**Actuarial Review of the APH Yield Exclusion Program**

Prepared by National Crop Insurance Services, Inc.

National Crop Insurance Services (NCIS) is an international not-for-profit organization representing the interests of private crop insurance companies.  In its capacity as the advisory organization for the crop insurance industry, NCIS has reviewed the report entitled *"Review of Adjustment in Actual Production History to Establish Insurable Yields; Determination of Actuarially Sound Premium Rates"* prepared by Sumaria Systems, Inc. on behalf of USDA Risk Management Agency.

## Executive Summary

The ability of producers to obtain higher levels of protection through the APH Yield Exclusion program than are currently available introduces an unprecedented degree of risk into the Federal Crop Insurance Program.  Even though RMA is currently revising its existing rating procedures in response to the higher effective coverage levels the program makes available to producers, it is highly uncertain that the proposed methodology will generate appropriate rates for effective coverage levels well in excess of the maximum coverage levels currently available to producers.  The proposed rating methodology for Yield Exclusion is not well supported, nor has the Sumaria study investigated relevant considerations such as the increased financial risk placed on participating insurers.  This review identifies several problems with the existing rating structure and ratemaking methodology as well as issues with the proposed Yield Exclusion rating methodology that call into question the accuracy of the rates.  In addition, this response points out the need for testing the consistency of the marginal rates implicit in the proposed Yield Exclusion rating methodology as well as the need to evaluate the proposed rating methodology on the existing book of business.  From the perspective of the participating insurers, high effective coverage levels will increase claim frequency and indemnities as well as the variability of program experience, with large increases in claim frequency occurring in years with only modest reductions in yields.  The availability of high effective coverage levels also increases the potential for adverse selection and moral hazard, neither of which is adequately addressed through RMA's rating methodology or the Sumaria review.

## Introduction

The APH Yield Exclusion procedure allows producers to exclude actual yields from their actual production history for any years RMA has designated as being excludable.   Years are eligible for exclusion if the average planted yield for the county was 50 percent or less of the simple average for the previous ten consecutive cropyears.  The same year is also eligible for exclusion in all contiguous counties.  The Yield Exclusion procedure applies to both Buy-up and Catastrophic Risk Protection forms of coverage under the Yield Protection, Revenue Protection, and Revenue Protection with Harvest Price Exclusion plans of insurance with a contract change date on or after November 30, 2014 and applies to the following spring 2015 crops: corn, soybeans, cotton, grain sorghum, spring wheat, spring barley, spring canola, rice, sunflowers, peanuts, and popcorn.  Yield exclusion will become available for fall crops starting with the 2016 cropyear.

The ability to exclude prior yields provides producers the opportunity to increase the APH used to establish their guarantees. Consider the example of a producer who has the option to exclude 7 of the 10 actual yields in his yield history. If the producer had low yields in 6 of the 7 years and chooses to exclude those 6 years, his adjusted APH is recomputed based on the remaining 4 yields. For example, suppose the producer has an APH of 100 bushels per acre and an adjusted APH after Yield Exclusion of 140 bushels. If the producer purchases coverage at the 80% coverage level, Yield Exclusion increases the producer's guarantee from 80 bushels to 112 bushels. As this illustrates, the producer's revised guarantee following Yield Exclusion may exceed his unadjusted APH. In this example, the producer has an effective coverage level of 112%, calculated as the ratio of his revised guarantee of 112 bushels to his unadjusted APH of 100 bushels versus an elected coverage level of 80%. Throughout the remainder of this report, all references to effective coverage level will be understood to be the ratio of the producer's revised guarantee after Yield Exclusion to his unadjusted APH prior to Yield Exclusion.

The Sumaria discussion notes that RMA's proposed rating method for Yield Exclusion is based on the principle that "the same premium should be charged for a given yield guarantee on a policy unit no matter whether the guarantee is derived from a simple average of APH yields or from an average of yields with Trend Adjustment or Yield Exclusion" (p.4). For example, a producer with an unadjusted APH of 120 bushels at the 85% coverage level would have a guarantee of 102 bushels. If the same producer has an adjusted APH of 136 bushels after Yield Exclusion and selects the 75% coverage level, the guarantee is again 102 bushels. Under the proposed rating method the premium for the two scenarios should be identical. In those situations where the producer's effective coverage level after Yield Exclusion falls between two coverage levels offered by RMA, the producer's rate at the effective coverage level is obtained by interpolating the rates between the two existing coverage levels. If the producer's effective coverage level exceeds the maximum coverage level offered in that county, the proposed rating method determines the producer's rate using a linear extrapolation based on the rates for the two highest coverage levels.

A variety of actuarial issues arise out of the introduction of the Yield Exclusion procedure. Among the issues the Sumaria report should have been expected to address[1] were (1) whether RMA had properly identified the Primary and Contiguous counties, (2) whether the implementation of the rating procedure in RMA's Cost Estimator is consistent with the recommended rating methodology, (3) an evaluation of the impact of Yield Exclusion on the program as a whole, (4) whether RMA's existing rating methodology is appropriate across the entire population or whether rate adequacy differs within segments of the program, (5) a discussion of alternative methodologies for establishing rates for producers who elect to exclude yields, (6) an evaluation of the alternative rating methodologies, (7) tests of the accuracy of the proposed rating methodology, (8) the increased potential for adverse selection and moral hazard within the insured population, (9) the impact of the Yield Exclusion program on the financial risk of the Approved Insurance Providers, and (10) an evaluation of the options to mitigate that risk. Most of these issues were not considered in the Sumaria report. The report primarily consisted of a recommendation for the proposed rating methodology and related implementation issues.

---

[1] The remainder of this response is structured to loosely parallel the items in this list.

The importance of the issues identified above is emphasized in the *Statement of Principles Regarding Property and Casualty Insurance Rating* of the Casualty Actuarial Society, which states that "proper actuarial procedures be employed to derive rates that protect the insurance system's financial soundness and promote equity and availability for insurance consumers."  The threats to the financial soundness of the program arise from the need to establish rates for effective coverage levels well in excess of any experience collected by RMA in past years; the possibility that the producer's guarantee may approach or exceed the producer's average yield, particularly in light of RMA's reluctance in earlier years to make high coverage levels available to producers due to the increased potential for adverse selection and moral hazard; the magnitude of the increase in APH for individual producers resulting from Yield Exclusion; and the volume of business affected by the change.  To address these concerns, NCIS prepared its own analysis of the Yield Exclusion procedure.  While the materials developed by NCIS are too extensive to include here, the following discussion provides an abbreviated review of the results from that analysis.
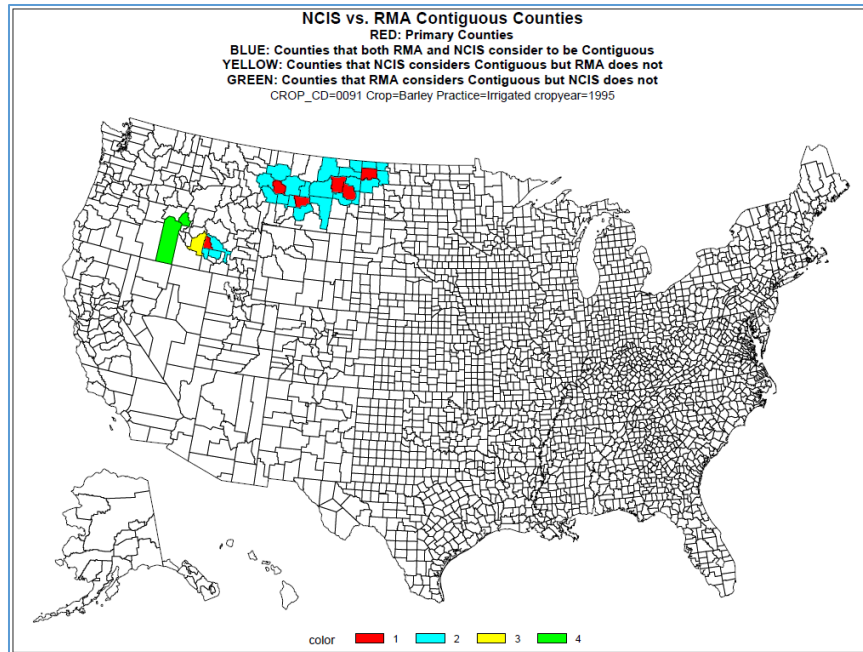
## Identification of Primary and Contiguous Counties

One of the more basic issues related to the implementation of the Yield Exclusion procedure is whether the designations of Primary and Contiguous counties have been properly identified.  Since RMA has not released the county average yields by crop, irrigation practice, and cropyear that it used to identify Primary counties, we are not able to verify whether those designations are accurate.

The only information released by RMA in regard to Primary and Contiguous county designations is a table of excludable years by crop, irrigation practice, and cropyear for 1995 through 2013.  The table also classifies each exclusion as either Primary or Contiguous.  Based on this information, NCIS prepared countrywide maps separately for each crop, irrigation practice, and cropyear to evaluate whether the RMA designation of Contiguous counties is consistent with the NCIS designation of Contiguous counties used in its Crop-Hail loss cost analyses.  A sample map is included below.  While the RMA designations are correct in a large majority of cases, a number of anomalies have been identified.  The errors include Primary counties not fully enclosed by Contiguous counties; Contiguous counties not adjacent to a Primary county; Contiguous counties on the opposite side of Lake Michigan from the Primary county; and duplication of county designations in consecutive years.  While these may not be material flaws in the program, RMA has a responsibility to ensure that Primary and Contiguous counties are properly identified.

The complete collection of maps can be found at the following link:
http://www.ag-risk.org/NCISPUBS/MPCIYieldExclusion/MPCIyieldexclusion.htm

NCIS vs. RMA Contiguous Counties
RED: Primary Counties
BLUE: Counties that both RMA and NCIS consider to be Contiguous
YELLOW: Counties that NCIS considers Contiguous but RMA does not
GREEN: Counties that RMA considers Contiguous but NCIS does not
CROP_CD=0091 Crop=Barley Practice=Irrigated cropyear=1995
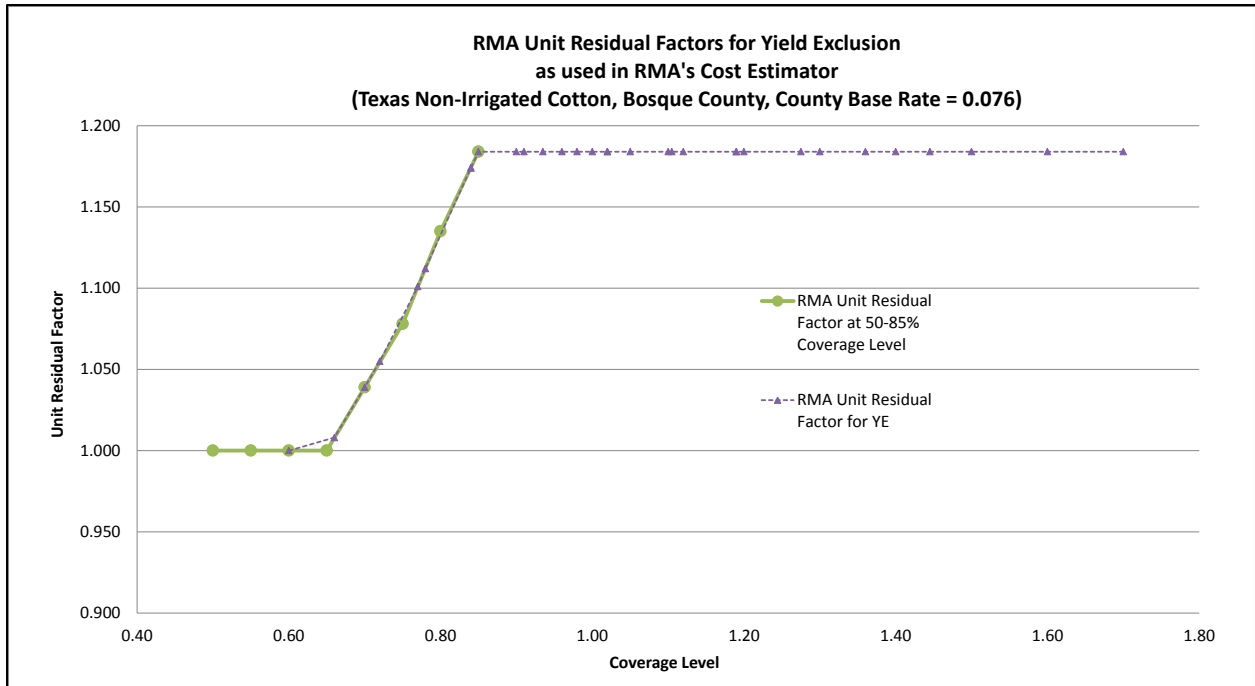
color ■ 1  ■ 2  ■ 3  ■ 4

## Testing the RMA Cost Estimator

NCIS conducted tests of the RMA Cost Estimator to evaluate whether the proposed rating methodology has been properly implemented.  As stated in the Sumaria report, the rate is to be interpolated between existing coverage levels whenever the effective coverage level as previously defined is less than the maximum coverage level offered in the county.  For higher effective coverage levels the rate is to be determined based on a linear extrapolation of the rate at the two highest coverage levels.  Since the rate at each coverage level is obtained by adjusting the base rate at the 65% coverage level by the appropriate Coverage Level Relativity and Unit Residual Factor, the NCIS tests focused on how these factors vary as a function of the effective coverage level.  The review found that Coverage Level Relativities and Unit Residual Factors are interpolated between coverage levels, consistent with the proposed methodology.  The review also found that Coverage Level Relativities are extrapolated to higher effective coverage levels.  However, as indicated in the following chart, Unit Residual Factors are not extrapolated beyond the 85% coverage level.  Since Unit Residual Factors[2] should increase as the coverage level increases, it is expected that these factors should continue to increase for effective coverage levels in excess of 85%.  The fact that the Unit Residual Factors are not being extrapolated beyond 85% suggests that the Cost Estimator underrates producers with high effective coverage levels. RMA and Sumaria should clarify whether the capping of the Unit Residual Factors was intentional or whether the proposed rating methodology was implemented incorrectly in the Cost Estimator.

---

[2]  If Unit Residual Factors are intended to represent an endogenous risk adjustment for moral hazard and adverse selection, the factors should increase as coverage increases, particularly at high coverage levels.  However, the Sumaria report provides no discussion of the method used to develop the factors nor does it provide a test of their adequacy or accuracy.

**RMA Unit Residual Factors for Yield Exclusion
as used in RMA's Cost Estimator
(Texas Non-Irrigated Cotton, Bosque County, County Base Rate = 0.076)**

NCIS conducted a second test of the RMA Cost Estimator to determine whether the producer's rate for a selected guarantee was unaffected by the producer's choice to use Yield Exclusion or not. The following example identifies a small inconsistency in the rates. The source of the discrepancy is a step in the calculation that computes the minimum of the estimated Yield Exclusion Proration Factor and 0.99. The error documented here was corrected by RMA later on the same day that NCIS identified the error.

NCIS is aware that AIPs have been in contact with RMA about a number of rating errors in the Cost Estimator. Modifications to the Cost Estimator at this late date are a clear indication that the proposed rating methodology was not adequately tested prior to the release of the Cost Estimator in December 2014. The initial premium calculation documents (PASS records) were issued by RMA in draft form in late October 2014. On December 17, 2014, RMA added a new section to the Yield Exclusion premium calculation record. In January 2015, additional changes were made to the new section. Further revisions were released for comment in early February 2015. The latest copy of the P11-1 Premium Calculation document is attached. The last two pages of the document show the most recent changes highlighted in yellow. The most recent release notes from the PASS test release are also attached, and include several changes for Yield Exclusion. Provided that testing goes well these changes will be pushed into production on February 18, just 10 days prior to the February 28 Sales Closing Date. This is clearly far from the ideal approach for implementing a new program.

| Base Premium Rate with and without Yield Exclusion at the same Effective Coverage Level (Saline County, Kansas, Non-Irrigated Corn) Source: RMA Cost Estimator | | | | | | | |
|---|---|---|---|---|---|---|---|
| Yield Exclusion | Rate Yield | Nominal Coverage Level | Approved Yield | Adjusted Yield | Guarantee | Effective Coverage Level | Base Premium Rate |
| Y | 59 | 50% | 102.0 | 60 | 51 | 85% | 0.240146 |
| N | 59 | 85% | 60 | | 51 | 85% | 0.242571 |

From a broader perspective, a review of the RMA Cost Estimator reveals extensive changes from prior years in the calculations used to determine the premium. Due to the increased complexity of the rating calculations, NCIS is not able to verify the accuracy of the premium calculations without extensive testing. Unless the person performing the rating is well-versed in how to determine the appropriate parameters to enter into the Cost Estimator, rating errors are likely to be more prevalent than in past years.

## Impact of Yield Exclusion on the Program

An evaluation of the impact of Yield Exclusion on the program is an essential aspect of an actuarial review in order to "protect the insurance system's financial soundness and promote equity and availability for insurance consumers." The reason for concern is that the Yield Exclusion procedure allows producers to purchase higher effective coverage levels than were ever available in the past. RMA does not have any historical experience at higher coverage levels to support the rating for the Yield Exclusion option beyond the 85% coverage level. However, the ability to exclude lower yields raises the possibility that producers may be able to insure at an effective coverage level in excess of 100% of the producer's unadjusted APH. It is our understanding that RMA has been hesitant in past years to offer high coverage levels to producers due to the greater likelihood of adverse selection and the increased potential for moral hazard due to the reduced incentive for producers to properly care for the crop under the knowledge that any shortfall would be indemnified by the insurer. We are not aware of any aspect of the Yield Exclusion procedure that mitigates these concerns, yet the Sumaria report provides no discussion or analysis of this issue.

The impact of the Yield Exclusion procedure on the program as a whole can be evaluated based on a review of the RMA table of excludable years, the premiums by crop and county from RMA's Summary of Business, and from the NASS planted acreage and production data by crop, county, practice, and year. The major concerns identified through this review are the large number of counties affected by the Yield Exclusion procedure; the large number of excludable years in many of the affected counties; the clustering of these counties in limited geographic regions; the large share of program premium written in these counties; and the large increases in effective coverage levels for individual producers within these counties.

The following table summarizes the number of counties with one or more excludable years from 1995 through 2013 (note: 1995 is the earliest eligible year under the Yield Exclusion procedure) based on information provided in RMA's Yield Exclusion table. A large number of counties are affected by the Yield Exclusion procedure. The Non-Irrigated practice is affected to a much greater extent than the

Irrigated Practice, with more than half of all counties for Corn, Cotton, Grain Sorghum, Peanuts, Soybeans, and Sunflowers having one or more excludable years.

| Number of Counties for which Yield Exclusion applies in 2015 Source: RMA Yield Exclusion and ADM tables | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Practice | Barley | Canola | Corn | Cotton | Grain Sorghum | Peanuts | Pop-corn | Rice | Soy-beans | Sun-flowers | Wheat |
| Irrigated | 155 | 0 | 394 | 173 | 279 | 50 | 16 | 18 | 263 | 61 | 15 |
| Non-Irrigated | 360 | 31 | 1,761 | 537 | 784 | 122 | 56 | 0 | 1,218 | 227 | 90 |
| Number of Counties where the Crop is Insurable in 2015 for either Practice | | | | | | | | | | |
| Counties | 948 | 278 | 2,484 | 730 | 1,186 | 149 | 265 | 135 | 2,086 | 329 | 2,276 |

Another perspective on these results can be obtained from the distribution of the number of counties shown in the table above based on the number of excludable years. For Non-Irrigated Corn, 1,761 counties have one or more excludable years. Of these, 40 counties have 10 or more excludable years, seven of which have 12 excludable years over the 19 year period, as shown in the following table.

| Frequency Distribution Non-Irrigated Corn Source: RMA Yield Exclusion table | |
|---|---|
| Number of Excludable Years | Number of Affected US Counties |
| 1 | 504 |
| 2 | 377 |
| 3 | 227 |
| 4 | 170 |
| 5 | 132 |
| 6 | 123 |
| 7 | 92 |
| 8 | 72 |
| 9 | 24 |
| 10 | 25 |
| 11 | 8 |
| 12 | 7 |

The largest number of excludable years for any crop over the 19 year period from 1995 through 2013 is 15. Three counties for Non-Irrigated Grain Sorghum fall into this category. Frequency distributions for all other crops and practices are available at the link indicated above.

One point worth noting is that since each producer's APH database includes at most 10 years of historical yields, it may be possible for certain producers to exclude every year from their own history. Provided that the producer has 4 or more years of actual yields, 100% of each year's T-Yield would be used in place of the excluded yields. In some cases, the T-Yield could exceed the highest value in the producer's yield history. In this situation, the producer's adjusted APH after Yield Exclusion could exceed any of his historical yields. This would virtually ensure that the producer would receive an indemnity under the current year's policy. This violates the one of the most basic principles of

insurance, that losses are random from the perspective of the insured, and undermines the ability of the insurance mechanism to effectively pool risk.

The following map presents the frequency distribution for Non-Irrigated Corn shown above in a different format. The map indicates that Iowa and Illinois will be only marginally affected by the Yield Exclusion procedure, while central and western Kansas and Nebraska and several other areas will be significantly impacted. Maps for all other crops and practices are available at the link indicated above.
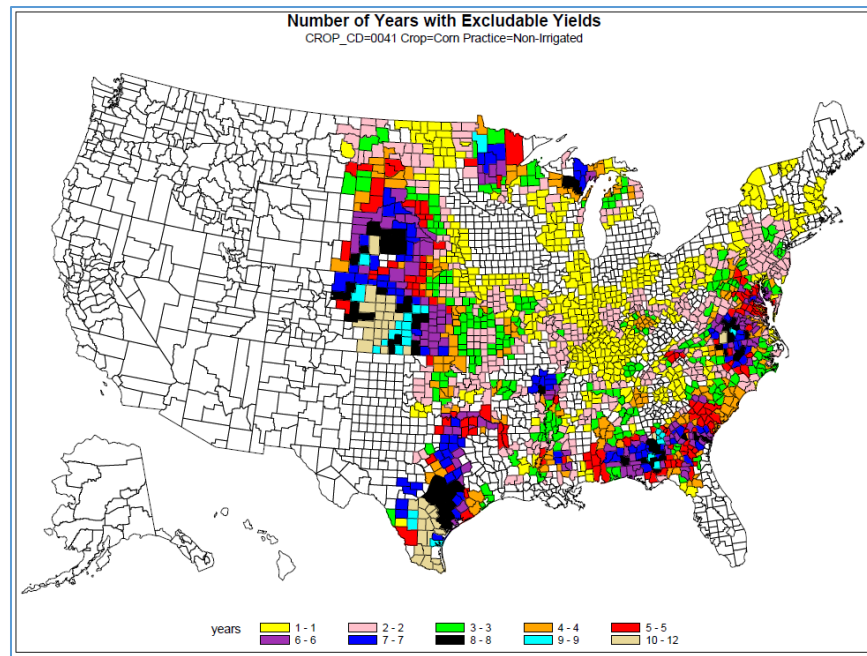


For Non-Irrigated Cotton, the counties with large numbers of excludable years also generate a large portion of the total premium for the crop. This is consistent with the observation that these are riskier counties that also tend to have high rates. The following table shows that the bulk of the premium for Non-Irrigated Cotton is written in counties with 10 or more excludable years[3]. Premium distributions for all other crops and practices are available at the link indicated above.

| Premium Distribution Non-Irrigated Cotton Source: RMA Yield Exclusion table and RMA Summary of Business | |
|---|---|
| Number of Excludable Years | Premium |
| 1 | 48,575,534 |
| 2 | 32,882,144 |
| 3 | 33,335,143 |
| 4 | 29,737,054 |
| 5 | 23,372,091 |
| 6 | 40,715,554 |

---

[3] The premium distribution is estimated from RMA Summary of Business data. The calculations are not precise because the Summary of Business provides the combined premium for the Irrigated and Non-Irrigated practices rather than separate premiums by practice.
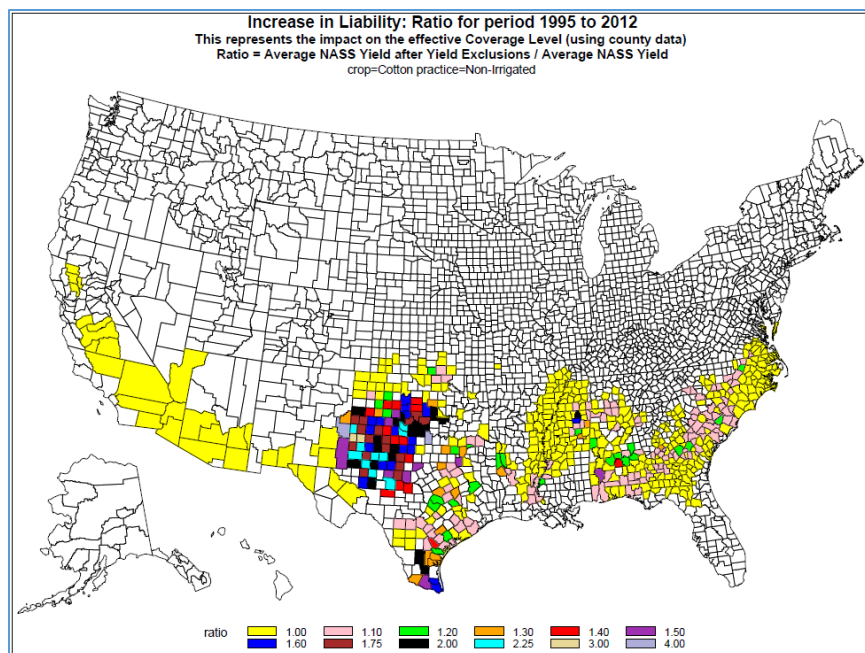
| | |
|---|---|
| 7 | 19,106,618 |
| 8 | 30,757,339 |
| 9 | 9,320,697 |
| 10 | 21,590,452 |
| 11 | 59,888,693 |
| 12 | 168,998,509 |
| 13 | 40,900,543 |
| 14 | 134,166,997 |
| 15 | 27,167,197 |

Producers in counties with zero excludable years are entirely unaffected by the Yield Exclusion procedure. In all other counties, the increase in a producer's APH depends on the number of years the producer is allowed to exclude. For any producer, the APH database includes as many as 10 years of yield history. The Yield Exclusion procedure may allow a producer to exclude from 1 to 10 of these yields, going back as far as 1995. Consequently, the actual increase in APH from excluding past yields will differ for each individual. However, NCIS does not have access to RMA's Yield History database, which prevents us from evaluating the impact of Yield Exclusion on individual producers or on all producers collectively.

As an alternative to a detailed analysis, NCIS has developed an estimate of the impact of Yield Exclusion on the average APH for a county by comparing the average NASS county yield after Yield Exclusion to the average NASS county yield for all years[4]. This can be viewed as being a proxy for the average increase in producers' APH due to Yield Exclusion. Under the assumption that the producer retains the previous year's coverage level selection, the ratio also represents the potential increase in effective coverage level as well as the increase in liability due to Yield Exclusion. Countrywide maps of the impact of Yield Exclusion on effective coverage levels and liabilities by crop and irrigation practice are available at the link indicated above.

As indicated in the following map for Non-Irrigated Cotton, the increase in effective coverage level can be considerable. While the counties in yellow (representing a ratio of 1.00) have essentially no change in their average yields, average yields increase by roughly 100% for the counties in black (a ratio of 2.00). In several counties, average yields increase by even more than 100%. As previously noted, this is a concern not only because RMA has no historical experience on which to base rates for effective coverage levels in excess of the maximum coverage levels currently offered, but also because high effective coverage levels, especially those in excess of 100%, have the potential to increase adverse selection against the program as well as provide additional incentive for moral hazard.

---

[4] For technical reasons, the NCIS analysis used NASS data for 1995 through 2012, excluding 2013. Since each APH database may use a different 10 year period, the ratio was estimated using yields for the entire 18 year period. This should not have a material effect on the analysis.

**Increase in Liability: Ratio for period 1995 to 2012**
This represents the impact on the effective Coverage Level (using county data)
Ratio = Average NASS Yield after Yield Exclusions / Average NASS Yield
crop=Cotton practice=Non-Irrigated

In addition to the increased uncertainty in regard to the adequacy of the rates and the expected profitability of the program, the Approved Insurance Providers (AIPs) will also be exposed to a greater degree of financial risk due to increased variability resulting from high effective coverage levels.  Due to the greater ease in triggering claims, claim frequency could increase sharply even with modest reductions in average yields, with a potential impact similar to that of the 2012 drought.  Even if the rates charged for high effective yields are adequate over the long term, Yield Exclusion increases the financial risk to the AIPs in the short-run due to the potential for widespread losses.

The impact of the Yield Exclusion procedure on the program cannot be disregarded in an actuarial evaluation of the rating of the procedure.  Actuarial Standards of Practice No. 1 calls "for the actuary to … exercise professional judgment to produce a "reasonable" result when rendering actuarial services. The intent is to call upon the actuary to exercise the level of care and diligence that, in the actuary's professional judgment, is necessary to complete the assignment in an appropriate manner."  Given the potential magnitude of Yield Exclusion on the program, the actuary's responsibility goes well beyond a technical evaluation of whether the proposed rating methodology seems reasonable and needs to consider the increase in financial risk imposed on the AIPs delivering the program.  The analysis also needs to be more thorough.  Section 3.2 of Actuarial Standard of Practice No. 41 states: "In the actuarial report, the actuary should state the actuarial findings, and identify the methods, procedures, assumptions, and data used by the actuary with sufficient clarity that another actuary qualified in the same practice area could make an objective appraisal of the reasonableness of the actuary's work as presented in the actuarial report."  The report is notably lacking in this regard.

### Testing of RMA's Current Rating Structure
In general, the rating structure for the Yield Protection plan the Federal Crop Insurance program follows the pattern established many years ago for the APH product.  The structure has been refined to some

degree but is still recognizable from earlier versions of the program. Coverage level relativities are still used but are now supplemented by Unit Residual Factors. The old step-rate rating mechanism that accounted for differences in risk between low APH and high APH producers has been replaced by a power function using an exponent. The program has also introduced new rating factors such as Enterprise Units that take account of the amount of acreage insured in the unit. While the rating structure has been somewhat stable, the ratemaking methodology itself has changed considerably over time. NCIS has reviewed limited portions of RMA's methodology in past years but has no access to the underlying policy level data. In addition, NCIS has previously expressed serious reservations regarding the earlier Sumaria ratemaking study released in late 2011 and implemented in cropyear 2012.
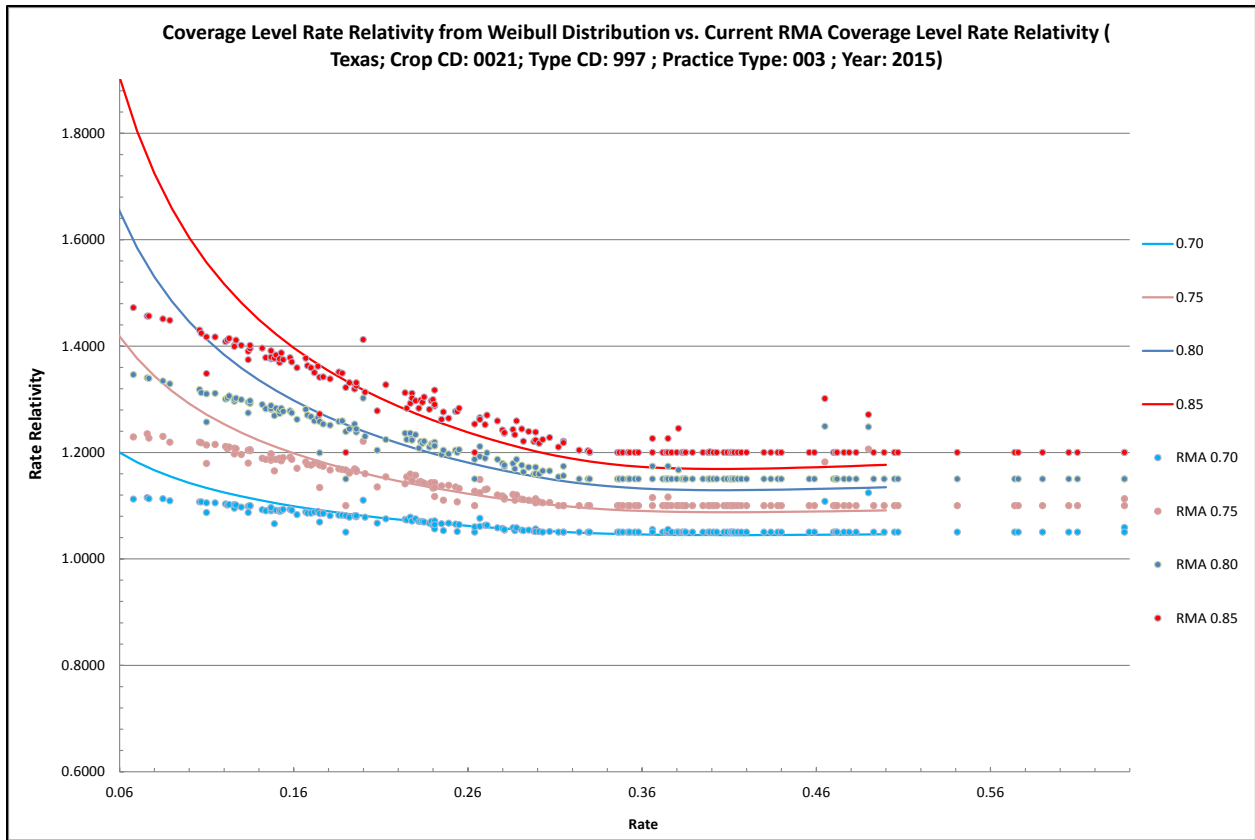
Due to the lack of availability of policy level data to conduct an analysis, the analytic method employed by NCIS has been to simulate producer yield distributions for each county and to use the fitted distributions to test the accuracy of RMA's current rating factors. Separate analyses were conducted in three states using a distinct family of distributions for each state. Weibull distributions were used to simulate producer yields in the first state, reverse lognormal distributions in the second state, and normal distributions in the third state. The family of distributions used in each state was selected based on a review of the published literature. Since the findings were robust across all three states, the analysis presented below reviews only one of the three.

The chart shown below has been developed under the assumption that producer yields in each county for Non-Irrigated Texas Cotton can be described as draws from a Weibull distribution. The parameters of the producer yield distribution have been selected to reproduce the county base rate for county rates ranging from $6 to $64 per hundred. The fitted distributions are then used to determine the indicated rate relativities between the various coverage levels[5]. Since rate relativities are the ratio of rates at two distinct coverage levels, any bias in the rates themselves tends to be reduced or eliminated in the calculation of the indicated rate relativities.

### Coverage Level Relativities
The chart included below compares the indicated coverage level relativities from the fitted distributions to RMA's published coverage level relativities. In general, RMA's coverage level relativities follow a fairly smooth relationship across the range of county base rates. Under the assumption that producer yields in any county can be approximated by a Weibull distribution, the chart indicates that RMA's coverage level relativities are reasonable for high rated counties but are noticeably inadequate in low rated counties. Furthermore, the chart shows that the coverage level relativities become increasingly inadequate at higher coverage levels. This calls into question RMA's proposed rating methodology for the Yield Exclusion procedure. If the rates are already severely inadequate in low rated counties at high coverage levels, the Yield Exclusion rating methodology will only magnify the underlying inadequacy for any higher effective coverage levels.

---

[5] The expected loss cost for any coverage level can be determined by integrating the indemnity function for that coverage level against the known producer yield distribution. The producer yield distribution for Texas Cotton is assumed to be Weibull. The base rate for an individual county can be considered to correspond to the expected loss cost at the 65% coverage level. Given the base rate, the parameters of the Weibull distribution can be determined that reproduce the county base rate. The resulting producer yield distribution is then used to determine the expected loss costs for all other coverage levels. Indicated rate relativities are defined as the ratio of the indicated rate at a given coverage level to the indicated rate at the 65% coverage level. These correspond to RMA's Coverage Level Relativities.

Coverage Level Rate Relativity from Weibull Distribution vs. Current RMA Coverage Level Rate Relativity ( Texas; Crop CD: 0021; Type CD: 997 ; Practice Type: 003 ; Year: 2015)

## Unit Residual Factors

The RMA coverage level relativities shown on the previous chart exclude the effect of Unit Residual Factors (URFs) on the rate. URFs are an additional rate adjustment applied by RMA for the higher coverage levels. URFs are consistently equal to 1.00 for coverage levels of 70% and below. At higher coverage levels, URFs are 1.00 in some counties and greater than 1.00 in others. In counties where the URFs exceed 1.00, the factors increase as the coverage level increases. Based on a comment in the Sumaria report, the URFs can be considered to correspond to the endogenous risk factors introduced in an earlier rate study more than a decade ago. However, the reason for the rate adjustment as well as the methodology for establishing these factors has never been adequately explained, either in the current Sumaria report or in any earlier RMA-contracted ratemaking study.

Our interest in URFs focused entirely on whether the factors were sufficient to correct for the rate discrepancy between the indicated rate relativities and RMA's published coverage level relativities shown in the chart. This suggests that the URFs should be associated with counties having low base rates. However, our review found that this was not the case. There is no evidence to suggest that the URFs are intended to correct the existing rate deficiencies at high coverage levels in low rated counties.

The observation that URFs in excess of 1.00 are currently applied across a broad range of county base rates raises the question of the purpose for this rate adjustment. The chart could be modified to show the combined effect of the coverage level relativities and the URFs, but this would only raise additional

questions. Instead of the fairly smooth relationship of coverage level relativities to county base rates, the combined effect of the coverage level relativities with the URFs would shift a seemingly random subset of points upward, creating two roughly parallel patterns in the place of each existing pattern. This calls into question the justification as well as the method of computation for determining URFs.

On a related issue, we normally would expect that a rating factor such as the URF should be reasonably stable from one year to the next. In the absence of detailed information on how RMA performs its rate reviews, we presume that the data used in its most recent analysis includes all of the data used in the previous analysis with the addition of one or more recent years of information. This would appear to be incompatible with the observation that the URF factor for Non-Irrigated Corn in Logan County, Kansas fell from its prior value of 1.132 in 2014 to the minimum possible value of 1.000 in 2015 (Cost Estimator printout available upon request). Our concern with a change of this magnitude is that it suggests the presence of a potential error in the ratemaking methodology.

One final point in regard to the URF's is the earlier observation that the Cost Estimator does not extrapolate URFs beyond the 85% coverage level. This appears to be an error in the calculations.

Needless to say, the issues identified here in regard to the URFs fail to offer reassurance regarding the accuracy of RMA's existing rating structure and ratemaking procedures upon which the Yield Exclusion rating procedure is based.

## Testing of RMA's Proposed Rating Methodology

### *The Equivalence Principle*
The proposed Yield Exclusion rating methodology is based on the principle that "the same premium should be charged for a given yield guarantee on a policy unit no matter whether the guarantee is derived from a simple average of APH yields or from an average of yields with Trend Adjustment or Yield Exclusion." If the principle is valid, the program and the AIPs delivering the program should be indifferent as to whether the producer obtains a higher guarantee through the selection of a higher coverage level or through the use of an adjusted yield. While this is not particularly controversial for the relatively small increases in average yield resulting from the Trend Adjustment procedure, it is not clear whether it would be appropriate for producers who are able to obtain a large increase in their APH as a result of excluding a portion of their history. Problems can arise from an inaccurate rating mechanism, particularly for effective coverage levels in excess of 85%, from self-selection of subsets of the population with different risk characteristics between the various coverage levels, or from a change in the mix of business leading to an increase in adverse selection against the program.

The equivalence principle described above is based on the assumption of a homogeneous population of producers with similar risk characteristics, including similar yield distributions. This would ensure that the loss experience for the subpopulation insured at the 85% coverage level would be indistinguishable from the experience of the subpopulation insured at the 65% coverage level except for the differences resulting from the use of different deductibles. As a result, the rate based on the experience of one subpopulation could be applied equally well to the second subpopulation. However, if the two

subpopulations have different risk characteristics, and those differences result in different coverage level selections, then the rate derived from the experience for the subpopulation historically insured at the 85% coverage level may not be appropriate for the subpopulation historically insured at the 65% coverage level if those producers were to select the 85% coverage level.

While the issue of homogeneity of the population cannot be evaluated without full access to RMA's policy level data, there are valid reasons to believe that different segments of the population have different degrees of risk. This could be due to the existence of risk characteristics such as soil types or yield variability not currently recognized in the rating structure. Alternatively, under the assumption that that producer yields can be approximated by a Weibull distribution, the departure of RMA's coverage level relativities from the indicated rate relativities in the previous chart could be an indication that the producers insured at higher coverage levels are drawn from a different population than those insured at 65%. Considering the importance of this issue, it would have been appropriate for RMA or Sumaria to have tested the equivalence principle by simulating the results from the existing book of business at higher effective coverage levels. While this would not address all of the concerns regarding the proposed rating methodology, it would have provided greater assurance than the current Sumaria report offers.

### *Interpolation*

The proposed methodology for rating the higher effective coverage levels relies on the assumption that the current RMA rating structure establishes adequate rates for producers in all counties. The previous chart calls this assumption into question by demonstrating the inconsistency of the current coverage level relativities for the lower rated counties.

As discussed in the Sumaria report, the proposed rating methodology interpolates rates between the existing coverage levels. A visual interpretation of this procedure can be obtained by reviewing the previous chart. Based on the assumption that producer yields follow a Weibull distribution, the rate should be obtained directly from the smooth rate relativity curves. In comparison, the proposed rating methodology determines the rate by interpolating between the various coverage level relativity series shown on the chart. Since both series of coverage level relativities are severely inadequate in the low rated counties, the interpolated rate will also be severely inadequate.

### *Extrapolation*

For effective coverage levels in excess of the maximum coverage level offered in the county, the proposed rating methodology determines the rate by using the difference in rates between the two highest coverage levels and extending that difference linearly to higher effective coverage levels. In terms of the previous chart, this approach would measure the gap between the points shown on the chart for the 80% and 85% coverage levels and add that difference to the points at the 85% coverage level to determine the rate to be charged for the 90% coverage level, and similarly for each higher coverage level. Since the indicated rate relativity curves shown on the chart increase exponentially for low rated counties, the proposed methodology would result in increasingly inadequate rates as the coverage level increases.

The following chart provides a direct comparison of the proposed Yield Exclusion rating methodology to the simulated rate relativity approach for a single county at a range of coverage levels. The rates generated by the linear extrapolation method in this example become increasingly inadequate at higher effective coverage levels. The coverage level relativity at a coverage level of 170% would be approximately 3.50, roughly half of the indicated value based on the fitted producer yield distribution.
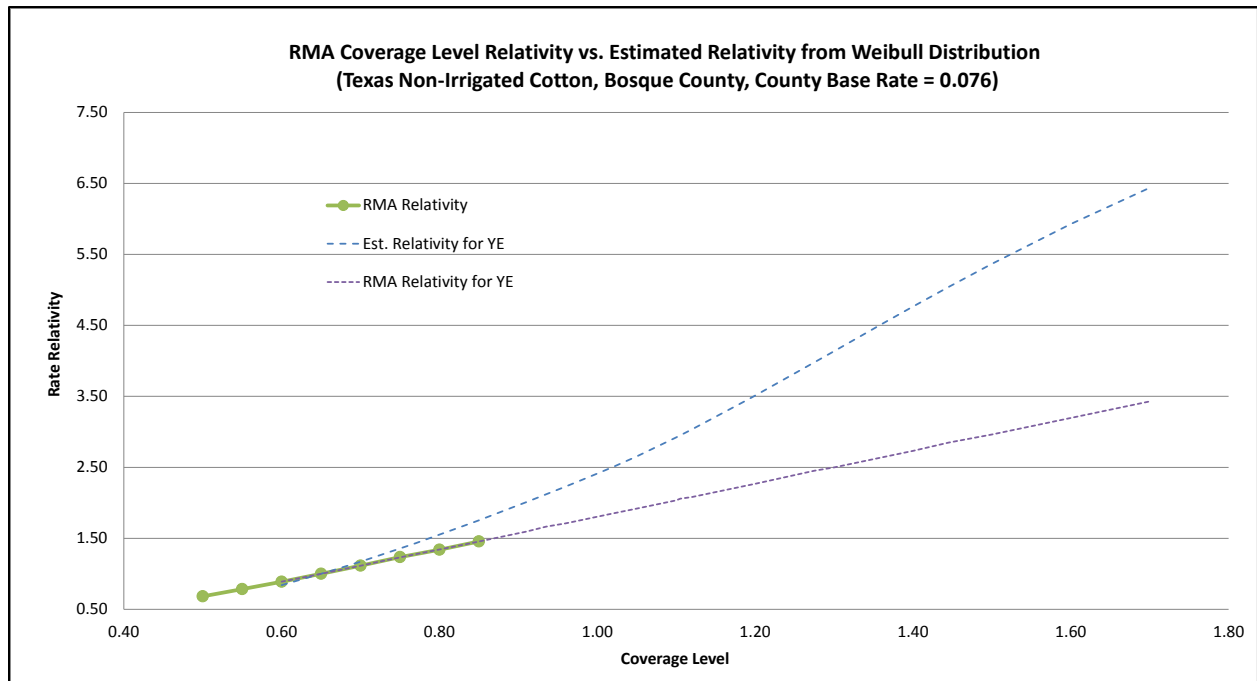


### Marginal Rates

The following chart illustrates how an increase in effective coverage level affects the indemnities paid to an individual producer. The vertical axis represents the indemnity payment the producer would receive corresponding to the producer yield shown on the horizontal axis. Separate indemnity curves are shown for effective coverage levels of 65%, 85%, 120%, and 150%. The producer yield distribution is beta with parameters $\alpha = \beta = 2$ with lower and upper bounds of 75 and 125, resulting in an expected yield of 100 bushels. Expected indemnities can be determined by integrating the indemnity function against the yield distribution.

In the example shown here, the producer has an expected loss cost of 0 at the 65% coverage level since the producer's yield never falls below the guarantee of 65 bushels. At the other extreme, the producer collects an indemnity every year at the 150% coverage level. The producer's expected indemnity at this coverage level is exactly 50 bushels, the difference between the guarantee of 150 and the expected yield of 100 bushels. Similarly, the producer's expected indemnity at the 125% coverage level is exactly 25 bushels since the producer's maximum possible yield is 125 bushels. For each one bushel increase in the producer's guarantee in excess of 125 bushels, the indemnity also increases by one bushel. Consequently, this producer should have a marginal rate of 100% for effective coverage levels of 125% or above.

The discussion presented here identifies a fundamental weakness in the proposed Yield Exclusion rating methodology. The proposed rating methodology increases the overall rate based on the producer's effective coverage level. However, the chart indicates that the producer's marginal rate should rapidly increase to 100% as the producer's effective coverage level increases. The proposed rating methodology gives no consideration to marginal rates and instead establishes the producer's rate as a simple linear interpolation or extrapolation of the rates at the available coverage levels. Whether the marginal rate structure underlying the proposed rating methodology is consistent with this approach is unclear without further analysis.



**Relationship of Indemnity to Effective Coverage Level
for an Individual Producer**
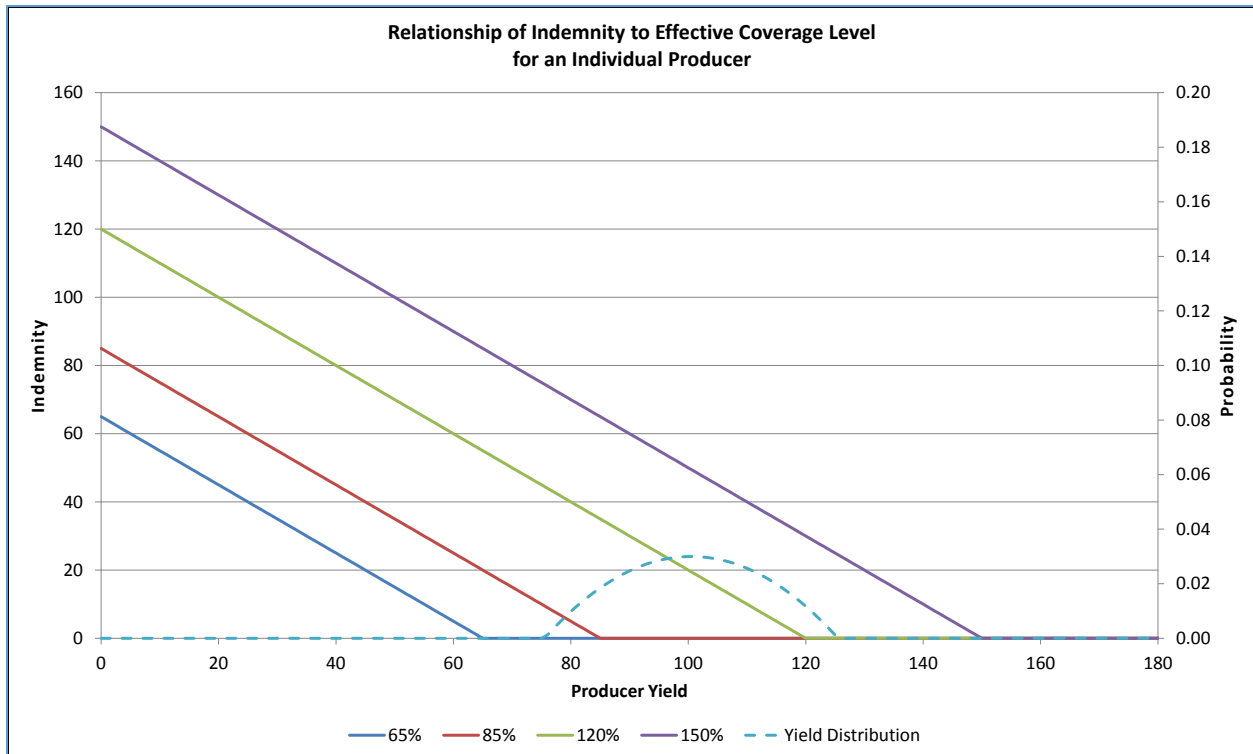
## Adverse Selection and Moral Hazard

### *Actuarial Standards with respect to Adverse Selection*
The Actuarial Standards of Practice emphasize the importance of considering the effects of adverse section on the insurance system. Actuarial Standard of Practice No. 12 defines Adverse Selection as:

> Actions taken by one party using risk characteristics or other information known to or suspected by that party that cause a financial disadvantage to the financial or personal security system (sometimes referred to as *antiselection*).

One method to reduce or prevent adverse selection is to charge equitable rates. Section 3.2.1 of Actuarial Standard of Practice No. 12 discusses rate equity in the following terms:

Rates within a risk classification system would be considered equitable if differences in rates reflect material differences in expected cost for risk characteristics.

Section 3.3.2.a of ASOP 12 discusses the need for a well-designed rate classification system or rating structure to limit the effects of adverse selection on the insurance system:

Adverse Selection – If the variation in expected outcomes within a risk class is too great, adverse selection is likely to occur. To the extent practical, the actuary should establish risk classes such that each has sufficient homogeneity with respect to expected outcomes to satisfy the purpose for which the risk classification system is intended.

Finally, section 3.4.1 points out the importance of evaluating the potential effects of adverse selection and calls upon the actuary to recommend possible remedies:

Adverse selection can potentially threaten the long-term viability of a financial or personal security system. The actuary should assess the potential effects of adverse selection that may result or have resulted from the design or implementation of the risk classification system. Whenever the effects of adverse selection are expected to be material, the actuary should, when practical, estimate the potential impact and recommend appropriate measures to mitigate the impact.

***Adverse Selection among Producers with Different Risk Characteristics in the Same County***
As an example of the increased potential for adverse selection following the introduction of the Yield Exclusion procedure, consider two producers in the same county, both with the same Rate Yield but different yield distributions.  Suppose that the first producer has reasonably stable yields while the second producer has much more variable yields.  Since both producers have the same Rate Yield, both are charged the same rate and pay the same premium for equivalent coverage.  However, the second producer is much riskier than the first producer and would be expected to collect greater indemnities over the long term.  Despite their differences in risk, the existing MPCI rating structure is incapable of capturing the difference in expected indemnities between the two producers.

Next, consider the effect of introducing Yield Exclusion.  This may have only a limited effect on the first producer with relatively stable yields but it has the potential to greatly increase the APH of the second producer with more variable yields.  As discussed in the previous paragraph, the second producer is already underrated under the existing rating structure relative to the first producer.  In addition, this producer would be able to increase the amount of coverage purchased to a much greater extent than the producer with more stable yields.  This is a textbook case of adverse selection, and would have the effect of undermining the financial soundness of the program over time.

***Adverse Selection between Counties***
A second example of the potential for increased adverse selection against the program due to the introduction of the Yield Exclusion procedure comes about through differences between counties.  The Exclusion procedure will have a greater impact on counties with highly variable yields.  These also tend

to be the high rated counties.  As a result, producers in the high rated counties will have a greater opportunity to purchase additional protection than producers in less risky counties.  The effect would be to increase the portion of the countrywide book of business written on high risk producers.

***Addressing Adverse Selection and Moral Hazard through the Unit Residual Factors***
As previously noted, if the set of producers in an individual county consists of two subpopulations with different risk characteristics, any deficiencies in the current rating structure or the Yield Exclusion rating procedure could increase the potential for adverse selection and moral hazard.  This might not be a major concern except for the potential magnitude of the increase in APH yields arising from the Yield Exclusion procedure.  NCIS expected that the Sumaria report would have considered this issue in some depth.  However, the Sumaria report includes only a brief observation on the impact of high effective coverage levels in relation to adverse selection and moral hazard, as follows:

> Ultimately, the tailoring of rates to very high effective coverage levels requires an understanding of the behavioral response to such coverage.

The 2010 Sumaria rate methodology review (Coble, et al.) provides additional discussion of this issue.  Page 41 of that report discusses the rating model for determining coverage level differentials.  In reference to equation 4.9 (this equation also appears in the recent Sumaria study), it states:

> The variable coverage level differentials are derived using a robust median regression method to estimate a model specification where the implied coverage level differential (from unit level historical loss cost data) is a function of...

Page 42 of the same report indicates that the coverage level relativities estimated using equation 4.9 fail to capture the effect of changes in incentives due to insuring at higher coverage levels:

> Another insight emerging from the RMA-commissioned study in 2002 is the need to account for endogenous risk changes associated with insuring at higher coverage levels (i.e. lower deductibles).  It is a widely accepted that economic incentives to produce are reduced at higher coverage levels.

This indicates that the endogenous risk factors, which correspond to the Unit Residual Factors in RMA's rating formula, represent an adjustment for the increased potential for adverse selection and moral hazard at higher coverage levels.

The 2010 report describes the endogenous risk adjustment in the following terms:

> The endogenous risk behavior is incorporated in the coverage level differential by calculating an endogenous risk factor using historical loss cost data at a specific coverage level and comparing it to an "implied" loss cost used in estimating equation 4.9.

Unfortunately, the Sumaria report does not discuss the method used to develop the endogenous risk adjustment nor does it provide a test of its accuracy.

We question the explanation that the endogenous risk adjustment is designed to address the effects of adverse selection or moral hazard. The description provided above of the methodology used to estimate the endogenous risk adjustment suggests instead that the Unit Residual Factor is better described as an adjustment for the estimation error resulting from the use of an incorrectly specified rating model in equation 4.9. This is demonstrated in the chart comparing Weibull versus RMA coverage level relativities, which indicates that an adjustment is needed in the low rated counties to correct the error in estimating the RMA coverage level relativities, presumably because RMA's quadratic rating formula may be inaccurate in states where county base rates vary across a wide range. If this interpretation is correct, the URFs are an attempt to offset model specification error rather than to address the endogenous risk resulting from adverse selection and moral hazard. This suggests that the potential increase in adverse selection or moral hazard with the introduction of Yield Exclusion is not adequately addressed through the existing rating structure or through the Yield Exclusion rating methodology. These concerns with the Unit Residual Factors and whether adverse selection and moral hazard have been properly considered in establishing the rates only serve to reduce confidence in the current rate structure and ratemaking methodology.

## Impact on Loss Adjustment Expenses and A&O Payments

The *Statement of Principles Regarding Property and Casualty Insurance Rating* provides a reminder that "proper actuarial procedures be employed to derive rates that protect the insurance system's financial soundness..." The financial soundness of the insurance system is particularly relevant when the changes being proposed have a material effect on the operation of the program. In addition, section 3.4.1 of ASOP 12 calls upon the actuary to "estimate the potential impact and recommend appropriate measures to mitigate the impact" whenever the effects of adverse selection are expected to be material, as they appear to be under the current circumstances.

Despite the material changes to the program as well as the potential increase in adverse selection and moral hazard resulting from the introduction of the Yield Exclusion procedure, the Sumaria report provides no estimates of the impact of program changes on liability, premiums, or indemnities as called for by the actuarial standards. At a bare minimum the report needs to include an evaluation of the expected increase in claim frequency and loss adjustment expense resulting from the increase in effective coverage levels. Whether or not RMA and Sumaria agree with the comments included in this response, there should be no debate over the expected increase in claim frequency and loss adjustment expense as effective coverage levels rise. The relevance of this issue rests in the fact that the SRA provides no additional compensation to the AIPs to cover their additional loss adjustment expense other than a small payment when the statewide gross loss ratio exceeds 120%. The Sumaria report provides no evaluation of whether the additional expense will affect the financial soundness of the insurance system.

**Reinsurance Issues**

Following the signing of the 2014 Farm Bill, RMA announced that implementation of the Yield Exclusion procedure would be postponed until 2016. This information would have been taken into consideration at the time the AIPs completed and submitted their Plan of Operations for the 2015 Reinsurance Year on or before April 1, 2014. Months later RMA revised its decision and announced that the Yield Exclusion procedure would be implemented in 2015 for all crops other than winter wheat. The analysis presented in this response suggests that RMA's decision may materially impact the risk and profit of the program for 2015 in a way that the AIPs had not anticipated at the time they submitted their Plan of Operations for the 2015 Reinsurance Year. Under the terms of the SRA, companies are not allowed to revisit those earlier decisions even though the Yield Exclusion procedure is now being implemented one year earlier than originally scheduled.

**Conclusions**

*Technical Concerns*

This review identifies several issues with the existing rating structure and ratemaking methodology as well as with the proposed Yield Exclusion rating methodology. RMA proposes to use the same rating method as is currently being used for Trend Adjustment to account for the additional risk at higher effective coverage levels. What this fails to recognize is that Trend Adjustment generates a relatively small change in the producer's APH whereas Yield Exclusion may result in a large increase in the producer's APH. The rating principle adopted by RMA, that the producer should have an equivalent premium regardless of the method the producer uses to obtain a given yield guarantee, assumes that the existing rating structure is equally valid for all producers and is effectively an argument that the AIPs should be indifferent to the increase in risk because the producer could have obtained a similar guarantee through the purchase of a higher coverage level. While this argument may be reasonable for low effective coverage levels, it clearly does not apply to situations in which the producer's effective coverage level exceeds the highest nominal coverage level offered by RMA. In addition, the argument relies on the assumption that existing rates are adequate, the population is homogeneous, and the availability of high effective coverage levels will not lead to an increase in adverse selection or moral hazard.

This review calls into question the adequacy of the rates at higher coverage levels in low rated counties as well as the accuracy of RMA's Unit Residual Factors. In addition, it notes that any flaws in the underlying rate structure are carried over and magnified by the Yield Exclusion rating methodology. It also calls into question the assumption that a linear extrapolation is the appropriate method for estimating rates at high effective coverage levels. To the limit of our information, no tests have been conducted on RMA's historical book of business to evaluate whether the rating principle is valid or whether the proposed Yield Adjustment rating methodology produces adequate rates. Similarly, no testing has been conducted on the reasonableness of the resulting marginal rates under the proposed rating methodology.

The concerns expressed here with respect to the validity of the existing rating structure and ratemaking methodologies employed by RMA as well as the adequacy of the resulting rates highlight a more general

concern regarding RMA's capability of empirically demonstrating the appropriateness of the actuarial procedures utilized in the Federal Crop Insurance program. Neither RMA nor Sumaria provide any empirical support for the Yield Exclusion procedure.  Not a single numeric estimate of the potential financial impact of Yield Exclusion is contained in the review.  Based on the documentation provided in the review, it is not possible to establish whether the current ratemaking methodology is valid without further empirical support.  We strongly recommend that RMA be more forthcoming with this information to ensure that the companies that risk their own capital in this program are fully aware of the risks they undertake by participating in the Federal Crop Insurance program.

### *Business Concerns*

NCIS represents the interests of the companies at risk in delivering the Federal Crop Insurance program.  In its capacity as the advisory organization for the crop insurance industry, NCIS would be remiss if it failed to consider the implications of the Yield Exclusion procedure on its member companies.  Based on the evaluation presented in this response, Yield Exclusion has the potential to have a significant impact on the program and the industry, depending on the decisions of individual producers.  This imposes a high degree of uncertainty on the companies in terms of the volume of business affected, the magnitude of the increase in liabilities and average effective coverage levels, the adequacy of the rates, the implications on claim frequency and loss adjustment expense, as well as how the additional exposure and risk will affect their reinsurance programs.

In addition to APH Yield Exclusion, the 2014 Farm Bill introduced a number of other programs that have an uncertain impact on the program and increase the financial risk of the Approved Insurance Providers.  These include the option to select different coverage levels by irrigation practice, the ability to separately insure Enterprise Units by irrigation practice, as well as the additional coverage provided under SCO and STAX.  Given the potential impact of these changes, the appropriate and prudent response by RMA and Sumaria would have been to simulate the effect of these changes on the existing book of business to evaluate the increase in risk exposure of the AIPs.  Unfortunately, no evaluation of the changes appears to have been conducted.  Had RMA and Sumaria conducted an evaluation, companies would have been in a position to assess the additional financial risk resulting from these changes.  In the absence of that evaluation, the AIPs find themselves in the position of being obligated to accept the increase in risk without any clear understanding of its magnitude.  The strength and resilience of the private sector delivery system depends on its ability to understand and manage risk as well as on continued access to the necessary financial resources to operate in an effective and consistent manner.  However, with the additional uncertainty resulting from the introduction of the Yield Exclusion and other Farm Bill programs, these changes are anticipated to adversely affect the ability to attract capital into the industry, detract from the ability of the AIPs to obtain adequate reinsurance at reasonable cost, and increase the financial risk of participating companies.

## REFERENCES

Undated Sumaria Report on Yield Exclusion Rating:
*Review of Adjustment in Actual Production History to Establish Insurable Yields; Determination of Actuarial Sound Premium Rates;* prepared by Sumaria Systems, Inc. on behalf of USDA Risk Management Agency.

2010 Sumaria rate methodology review:
*A Comprehensive Review of the RMA APH and Combo Rating Methodology*; Final Report March 15, 2010; Keith H. Coble, Thomas O. Knight, Barry K. Goodwin, Mary Frances Miller, Roderick M. Rejesus

Statement of Principles Regarding Property and Casualty Insurance Ratemaking:
http://casact.org/professionalism/standards/princip/sppcrate.pdf

CAS Code of Professional Conduct:
http://casact.org/professionalism/policiesProc/index.cfm?fa=code

Actuarial Standard of Practice No. 1 - Introductory Actuarial Standard of Practice:
http://www.actuarialstandardsboard.org/pdf/asops/asop001_170.pdf

Actuarial Standard of Practice No. 41 - Actuarial Communications:
http://www.actuarialstandardsboard.org/pdf/asops/asop041_120.pdf

Actuarial Standard of Practice No. 12 - Risk Classification:
http://www.actuarialstandardsboard.org/pdf/asops/asop012_132.pdf

2015 Standard Reinsurance Agreement:
http://www.rma.usda.gov/pubs/ra/sraarchives/15sra.pdf

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion | |
|---|---|---|---|---|---|
| Commodity Code | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley | |

| Calculations | | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|---|
| **Section 1: Liability Calculation** | | | | | | | |
| Premium Guarantee Per Acre Amount = Approved Yield * Coverage Level Percent | | Premium Guarantee Per Acre Amount | Internal | | 999999999.99 | If Unit of Measure equals Pounds "LBS", then round to whole number.<br><br>If Unit of Measure equals Tons "TONS", then round to 2 decimals.<br><br>Otherwise, round to 1 decimal. | Common Crop Insurance Policy definition 'production guarantee (per acre)'. |
| | | Approved Yield | P11 | 43 | 99999999.99 | None | For APH Trend and Yield Exclusion, the Approved Yield will be the greater of the calculated ~~Trended~~ yield and the adjusted yield ~~(the approved yield that would have been if TA wasn't selected without the effects to cups or floors)~~.<br><br>For skip row commodities, the approved yield is the converted approved yield from the P15 record with skip row (yield conversion factor) applied. |
| | | Coverage Level Percent | P14 | 34 | 9.9999 | None | For APH Trend and Yield Exclusion the Coverage Level Percent in this section is ALWAYS the chosen coverage level and NOT the Effective Coverage Level. |
| **When Guarantee Adjustment Type Code equals Late Planting, "L" OR Prevented Planting, "P":**<br><br>Guarantee Per Acre Amount = Premium Guarantee Per Acre Amount * Guarantee Adjustment Factor | | Guarantee Per Acre Amount | Internal | | 999999999.99 | If Unit of Measure equals Pounds "LBS", then round to whole number.<br><br>If Unit of Measure equals Tons "TONS", then round to 2 decimals.<br><br>Otherwise, round to 1 decimals. | |
| | | Guarantee Adjustment Factor | P11 | 72 | 0.999 | None | Edit with the Guarantee Adjustment ICE, "D00068". |
| | | | | | | When Commodity Code equals Barley, "0091", Corn, "0041", Cotton, "0021", Grain Sorghum, "0051", Soybeans, "0081" or Wheat, "0011"; round to nearest whole cent [$9.99]. If result is based on Contract Price for specialty type Corn, Soybeans or Barley; round to nearest one hundredth cent ($9.9999). | |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| Price Election Amount = Projected Price (or Contract Price) * Price Election Percent | Price Election Amount | Internal | | 9999.9999 | When Commodity Code equals Canola, "0015", Rice, "0018", Sunflowers, "0078"; round to nearest one-tenth cent [$9.999]. If result is based on Contract Price for specialty type Canola; round to nearest one hundredth cent ($9.9999).<br><br>When Commodity Code equals Popcorn, "0043", Dry Beans, "0047", or Dry Peas,"0067" round to nearest one-hundredth cent [$9.9999]. | |
| | Projected Price | ADM | | 99999.9999 | | Liability for Yield Protection, "01" allows the producer the opportunity to choose a percentage of the Projected Price. Liability for Revenue Protection, "02", or Revenue Protection with Harvest Price Exclusion, "03", requires the producer to choose 100 percent of the Projected Price. Edit with ADM Price, "00810". |
| | Contract Price | P11 | 47 | 9999.9999 | None | For Yield Protection, "01", Contract Price may be used in lieu of the Projected Price for Dry Beans, Dry Peas, specialty types of Canola, Corn, Soybean or Barley. For Revenue Protection, "02", or Revenue Protection with Harvest Price Exclusion, "03", Contract Price may be used in lieu of the Projected Price for Dry Beans, Dry Peas, or specialty types of Canola, Corn or Soybeans. If the insured chooses to use the contract price, the contract price per bushel should be entered in the contract price field. The contracted price will be capped by RMA at a certain percentage over the projected price for Canola, Corn, Soybean and Barley as specified in the Special Provisions. |
| | Price Election Percent | ICE | | 9.9999 | None | Price Election Percent must equal 1.000, when Insurance Plan Code is Revenue Protection, "02", or Revenue Protection with Harvest Price Exclusion, "03". Edit with ICE Price Election Percent, "D00007". |
| Premium Total Guarantee Amount = Premium Guarantee Per Acre Amount * Price Election Amount * Reported Acreage | Premium Total Guarantee Amount | Internal | | 99999999.99 | Round to 2 decimals. | |
| | Price Election Amount | Internal | | 9999.9999 | None | |
| | Reported Acreage | P11 | 49 | 99999999.99 | None | Reported Acreage must equal the sum of all Land, P27, Reported Acreage. |

| | | |
|---|---|---|
| **Exhibit Name:** Premium Calculation | | |
| **Exhibit Number:** P11-1, Plan 01, 02, 03 | **Reinsurance Year:** 2015 | |
| **Record Name:** Acreage | **Version:** Comment | |
| **Record Code:** P11 | **Release Date:** 2/5/2015 | |

| | | | |
|---|---|---|---|
| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans　　0075 Peanuts<br>0051 Grain Sorghum　0078 Sunflowers<br>0067 Dry Peas　　0081 Soybeans<br>　　　　　　　0091 Barley |

| Calculations | | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|---|
| Total Guarantee Amount = | Guarantee Per Acre Amount * Price Election Amount * Reported Acreage | Total Guarantee Amount | P11 | 100 | 99999999.99 | Round to 2 decimals. | |
| | | Price Election Amount | Internal | | 9999.9999 | None | |
| | | Reported Acreage | P11 | 49 | 999999.99 | None | Reported Acreage must equal the sum of all Land, P27, Reported Acreage. |
| Premium Liability Amount = Premium Total Guarantee Amount * Insured Share Percent | | Premium Liability Amount | Internal | | 9999999999 | Round to whole | |
| | | Insured Share Percent | P11 | 44 | 9.9999 | None | |
| Liability Amount = Total Guarantee Amount * Insured Share Percent | | Liability Amount | P11 | 91 | 9999999999 | Round to whole number. | |
| | | Insured Share Percent | P11 | 44 | 9.9999 | None | |

| **Section 2 3: Unit Discount Calculation** | | | | | | | The appropriate discount factor should be looked up and applied. |
|---|---|---|---|---|---|---|---|
| **When Commodity Code is NOT EQUAL to Wheat, "0011", Cotton, "0021", Corn, "0041", or Soybeans, "0081".** | | | | | | | |
| Revenue Lookup Adjustment Factor | = **When the Unit Structure Code is Optional Unit, "OU", "UA", "UD", Basic Unit, "BU", or Enterprise Unit, "EU" & "EP":**<br><br>Unit Structure Discount Factor | Revenue Lookup Adjustment Factor | Internal | | 9.99999999 | None | |
| | = **When the Unit Structure Code is Whole Farm Unit "WU":**<br><br>Unit Structure Discount Factor for Enterprise Unit "EU" | Unit Structure Discount Factor | Internal | | 9.99999999 | None | Capped at 1.0<br>From below for Unit Structures "OU, UA, UD, BU, or EU". |
| Unit Structure Discount Factor | = **When the Unit Structure Code is Optional Unit, "OU", "UA", or "UD":**<br><br>Optional Unit Discount Factor | Unit Structure Discount Factor | Internal | | 9.99999999 | None | capped at 1.0 |
| | | Optional Unit Discount Factor | ADM | | 9.999 | None | Edit with ADM Unit Discount, "A01090". |
| | = **When Unit Structure Code is Basic Unit, "BU":**<br><br>Basic Unit Discount Factor | Basic Unit Discount Factor | ADM | | 9.999 | None | Edit with ADM Unit Discount, "A01090". |
| | = **When the Unit Structure Code is Enterprise Unit, "EU" & "EP":**<br><br>Enterprise Unit Discount Factor | Enterprise Unit Discount Factor | ADM | | 9.999 | None | Edit with ADM Unit Discount, "A01090".<br><br>Enterprise Units will now mandate that all insured acreage for a commodity will be included in the Enterprise Unit. This includes both fall and spring planted acreage.<br><br>Enterprise Unit Discount Factor is contingent upon the sum of the reported acres which were not prevented from planting for all applicable units being greater than or equal to the Area Low Quantity and less than or equal to Area High Quantity fields contained on the ADM Unit Discount, "A01090". Unit is not eligible as an enterprise unit if summed planted acres are less than 20 acres or 20% of insured crop acreage. |

| | |
|---|---|
| **Exhibit Name:** Premium Calculation | |
| **Exhibit Number:** P11-1, Plan 01, 02, 03 | **Reinsurance Year:** 2015 |
| **Record Name:** Acreage | **Version:** Comment |
| **Record Code:** P11 | **Release Date:** 2/5/2015 |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans     0075 Peanuts<br>0051 Grain Sorghum    0078 Sunflowers<br>0067 Dry Peas     0081 Soybeans<br>                   0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| **When Commodity Code is EQUAL to Wheat, "0011", Cotton, "0021", Corn, "0041", or Soybeans, "0081".** | | | | | | |
| Revenue Lookup Adjustment Factor<br><br>= When the Unit Structure Code is Optional Unit, "OU", "UA", or "UD":<br><br>Unit Structure Discount Factor | Revenue Lookup Adjustment Factor | Internal | | 9.99999999 | None | |
| | Unit Structure Discount Factor | Internal | | 9.99999999 | None | Capped at 1.0<br>From below for Unit Structure "OU", "UA", or "UD". |
| **When Unit Structure Code is Basic Unit, "BU":**<br><br>Basic Unit Discount Factor for 65% Coverage Level | Basic Unit Discount Factor | ADM | | 9.999 | None | Edit with ADM Unit Discount, "A01090" for 65% Coverage Level.<br><br>Basic Unit Discount Factor is contingent upon the sum of the reported acres which were not prevented from planting for the unit being greater than or equal to the Area Low Quantity and less than or equal to Area High Quantity fields contained on the ADM Unit Discount, "A01090" for 65% Coverage Level. |
| = **When the Unit Structure Code is Enterprise Unit, "EU" & "EP" or Whole Farm Unit "WU":**<br><br>Enterprise Unit Discount Factor for 65% Coverage Level | Enterprise Unit Discount Factor | ADM | | 9.999 | None | Edit with ADM Unit Discount, "A01090" for 65% Coverage Level.<br><br>Enterprise Unit Discount Factor is contingent upon the sum of the reported acres which were not prevented from planting for all applicable units being greater than or equal to the Area Low Quantity and less than or equal to Area High Quantity fields contained on the ADM Unit Discount, "A01090" for 65% Coverage Level. |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|---|
| Unit Structure Discount Factor | **When the Unit Structure Code is Optional Unit, "OU", "UA", or "UD":**<br><br>Optional Unit Discount Factor | Unit Structure Discount Factor | Internal | | 9.99999999 | None | Capped at 1.0<br>See Section 19 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) |
| | | Optional Unit Discount Factor | ADM | | 9.999 | None | Edit with ADM Unit Discount, "A01090".<br>See Section 19 for Option Code "TA" (Trend Adjustment)and "YE" (Yield Exclusion). |
| | **When Unit Structure Code is Basic Unit, "BU":**<br><br>Basic Unit Discount Factor | Basic Unit Discount Factor | ADM | | 9.999 | None | Edit with ADM Unit Discount, "A01090" by Coverage Level.<br><br>Basic Unit Discount Factor is contingent upon the sum of the reported acres which were not prevented from planting for the unit being greater than or equal to the Area Low Quantity and less than or equal to Area High Quantity fields contained on the ADM Unit Discount, "A01090" for Coverage Level.<br><br>See Section 19 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| | **When the Unit Structure Code is Enterprise Unit, "EU" & "EP":**<br><br>Enterprise Unit Discount Factor | Enterprise Unit Discount Factor | ADM | | 9.999 | None | Edit with ADM Unit Discount, "A01090" by Coverage Level.<br><br>Enterprise Units will now mandate that all insured acreage for a commodity will be included in the Enterprise Unit. This includes both fall and spring planted acreage.<br><br>Enterprise Unit Discount Factor is contingent upon the sum of the reported acres which were not prevented from planting for all applicable units being greater than or equal to the Area Low Quantity and less than or equal to Area High Quantity fields contained on the ADM Unit Discount, "A01090" for Coverage Level. Unit is not eligible as an enterprise unit if summed planted acres are less than 20 acres or 20% of insured crop acreage.<br><br>See Section 19 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| **Section 3 2: Base Premium Rate Calculation** | | | | | | | |
| Current Year Yield Ratio = Rate Yield / Reference Amount | | Current Year Yield Ratio | Internal | | 9.9999 | Round to 2 decimals. | Cup at 0.50 and Cap at 1.50. |
| | | Rate Yield | P15 | 35 | 99999999.99 | None | For skip row commodities, the rate yield is the converted rate yield from the P15 record with skip row (yield conversion factor) applied. |
| | | Reference Yield | ADM | | 99999.99 | None | Edit with ADM Base Rate, "A01010". |
| Prior Year Yield Ratio = Rate Yield / Prior Year Reference Amount | | Prior Year Yield Ratio | Internal | | 9.9999 | Round to 2 decimals. | Cup at 0.50 and Cap at 1.50. |
| | | Rate Yield | P15 | 35 | 99999999.99 | None | For skip row commodities, the rate yield is the converted rate yield from the P15 record with skip row (yield conversion factor) applied. |
| | | Prior Year Reference Amount | ADM | | 99999.99 | None | Edit with ADM Base Rate, "A01010". |
| Current Year Rate Multiplier = Current Year Yield Ratio ^ Exponent Value | | Current Year Rate Multiplier | Internal | | 9999.99999999 | Round to 8 decimals. | |
| | | Exponent Value | ADM | | S99.999 | None | Edit with ADM Base Rate, "A01010". |
| Prior Year Rate Multiplier = Prior Year Yield Ratio ^ Prior Year Exponent Value | | Prior Year Rate Multiplier | Internal | | 9999.99999999 | Round to 8 decimals. | |
| | | Prior Year Exponent Value | ADM | | S99.999 | None | Edit with ADM Base Rate, "A01010". |

2/4/2015

| | | | | |
|---|---|---|---|---|
| **Exhibit Name:** Premium Calculation | | | | |
| **Exhibit Number:** P11-1, Plan 01, 02, 03 | | **Reinsurance Year:** 2015 | | |
| **Record Name:** Acreage | | **Version:** Comment | | |
| **Record Code:** P11 | | **Release Date:** 2/5/2015 | | |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans    0075 Peanuts<br>0051 Grain Sorghum   0078 Sunflowers<br>0067 Dry Peas   0081 Soybeans<br>        0091 Barley |

| Calculations | | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|---|
| Current Year Base Rate | | Current Year Base Rate | Internal | | 9999999999.99999999 | Round to 8 decimals. | |
| | **When Rate Method Code is Fixed, "F":**<br><br>Sub County Rate | Sub County Rate | ADM | | 99.9999 | None | Edit with ADM Sub County Rate, "A01050". See Section 21 for Written Agreement Sub County Rate information. |
| | **When Rate Method Code is Additive, "A":**<br><br>Sub County Rate + (Current Year Rate Multiplier * Reference Rate + Fixed Rate) | Current Year Rate Multiplier | Internal | | 9999.99999999 | None | |
| | **When Rate Method Code is Multiplicative, "M":**<br><br>Sub County Rate * (Current Year Rate Multiplier * Reference Rate +  Fixed Rate) | Reference Rate | ADM | | 9.9999 | None | Edit with ADM Base Rate, "A01010". See Section 20 for Written Agreement Rate Information. |
| | **Otherwise:**<br><br>Current Year Rate Multiplier * Reference Rate + Fixed rate | Fixed Rate | ADM | | 9.9999 | None | Edit with ADM Base Rate, "A01010". See Section 20 for Written Agreement Rate Information. |
| Prior Year Base Rate | | Prior Year Base Rate | Internal | | 9999999999.99999999 | Round to 8 decimals. | |
| | **When Rate Method Code is Fixed, "F":**<br><br>Sub County Rate | Sub County Rate | ADM | | 99.9999 | None | Edit with ADM Sub County Rate, "A01050". See Section 21 for Written Agreement Sub County Rate information. |
| | **When Rate Method Code is Additive, "A":**<br><br>Sub County Rate + (Prior Year Rate Multiplier * Prior Year Reference Rate + Prior Year Fixed Rate) | Prior Year Rate Multiplier | Internal | | 9999.99999999 | None | |
| | **When Rate Method Code is Multiplicative, "M":**<br><br>Sub County Rate * (Prior Year Rate Multiplier * Prior Year Reference Rate +  Prior Year Fixed Rate) | Prior Year Reference Rate | ADM | | 9.9999 | None | Edit with ADM Base Rate, "A01010". See Section 20 for Written Agreement Rate Information. |
| | **Otherwise:**<br><br>Prior Year Rate Multiplier * Prior Year Reference Rate + Prior Year Fixed rate | Prior Year Fixed Rate | ADM | | 9.9999 | None | Edit with ADM Base Rate, "A01010". See Section 20 for Written Agreement Rate Information. |
| Current Year Base Premium Rate | | Current Year Base Premium Rate | Internal | | 9999999999.99999999 | Round to 8 decimals. | If Option Code "YE" is applicable and the effective coverage level exceeds the highest coverage level for the offer in the ADM, see Section 25 for the Current Year Base Premium Rate calculation. |
| | **When Unit Structure Code is equal to Optional Unit, "OU", "UA", "UD", or Basic Unit, "BU":**<br><br>Round(Current Year Base Rate * Rate Differential Factor * Unit Residual Factor, 8) | Rate Differential Factor | ADM | | 9.999999999 | None | Edit with ADM Coverage Level Differential, "A01040". See Section 17 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| | | Unit Residual Factor | ADM | | 999.999 | None | Edit with ADM Coverage Level Differential, "A01040". See Section 18 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) where Unit Structure Code equal to Optional Unit, "OU", "UA", "UD", or Basic Unit, 'BU'. |
| | **When Unit Structure code is Enterprise Unit, "EU" & "EP":**<br><br>Round(Current Year Base Rate * Rate Differential Factor * Enterprise Unit Residual Factor, 8) | Enterprise Unit Residual Factor | ADM | | 9.999 | None | Edit with ADM Coverage Level Differential, "A01040". See Section 18 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) where Unit Structure Code equal to Enterprise Unit, 'EU'. |
| | **When Unit Structure code is Whole Farm Unit, "WU":**<br><br>Round(Current Year Base Rate * Rate Differential Factor * Whole Farm Unit Residual Factor, 8) | Whole Farm Unit Residual Factor | ADM | | 9.999 | None | Edit with ADM Coverage Level Differential, "A01040". See Section 18 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) where Unit Structure Code equal to Whole Farm Unit, 'WU'. |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Exhibit Name:** Premium Calculation | | | | | | |
| **Exhibit Number:** P11-1, Plan 01, 02, 03 | | | **Reinsurance Year:** 2015 | | | |
| **Record Name:** Acreage | | | **Version:** Comment | | | |
| **Record Code:** P11 | | | **Release Date:** 2/5/2015 | | | |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion | |
|---|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley | |

| | Calculations | Field<br>Name | Record<br>Number | Field<br>Number | Field<br>Format | Field<br>Rounding | Rules |
|---|---|---|---|---|---|---|---|
| Prior Year Base Premium Rate | **When Unit Structure Code is equal to Optional Unit, "OU", "UA", "UD", or Basic Unit, "BU":**<br><br>= Round(Prior Year Base Rate * Prior Year Rate Differential Factor * Prior Year Unit Residual Factor, 8) | Prior Year Base Premium Rate | Internal | | 9999999999.99999999 | Round to 8 decimals. | |
| | | Prior Year Rate Differential Factor | ADM | | 9.999999999 | None | Edit with ADM Coverage Level Differential, "A01040".<br>See Section 17 for Option code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| | | Prior Year Unit Residual Factor | ADM | | 999.999 | None | Edit with ADM Coverage Level Differential, "A01040".<br>See Section 18 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) where Unit Structure Code equal to Optional Unit, "OU", "UA", "UD", or Basic Unit, "BU". |
| | **When Unit Structure code is Enterprise Unit, "EU" & "EP":**<br><br>= Round(Prior Year Base Rate * Prior Year Rate Differential Factor * Prior Year Enterprise Unit Residual Factor, 8) | Prior Year Enterprise Unit Residual Factor | ADM | | 9.999 | None | Edit with ADM Coverage Level Differential, "A01040".<br>See Section 18 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) where Unit Structure Code equal to Enterprise Unit, 'EU'. |
| | **When Unit Structure code is Whole Farm Unit, 'WU':**<br><br>= Round(Prior Year Base Rate * Prior Year Rate Differential Factor * Prior Year Whole Farm Unit Residual Factor, 8) | Prior Year Whole Farm Unit Residual Factor | ADM | | 9.999 | None | Edit with ADM Coverage Level Differential, "A01040".<br>See Section 18 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) where Unit Structure Code equal to Whole Farm Unit, 'WU'. |
| Base Premium Rate = | MIN (Current Year Base Premium Rate, Prior Year Base Premium Rate * 1.2, .999) | Base Premium Rate | P11 | 94 | 9999999999.99999999 | Round to 8 decimals. | |
| Revenue Lookup Rate = | MIN(Current Year Base Rate, Prior Year Base Rate * 1.2, 0.9999) | Revenue Lookup Rate | Internal | | 9999999999.9999 | Round to 4 decimals. | |

| **Section 4: Optional Coverage (Additive "A" and Multiplicative "M")** | | | | | | If Option Rate Method Code equal "T" (Total Premium Rate Adjustment) see Section 9. |
|---|---|---|---|---|---|---|

| | Calculations | Field Name | Record Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| Additive Optional Rate Adjustment Factor = | **When Rate Method Code is Additive, "A":**<br><br>∑ Option Rate * Rate Differential Factor | Additive Optional Rate Adjustment Factor | Internal | 999999.9999 | Round to 4 decimals. | |
| | | Option Rate | ADM | 99999.9999 | None | Option Rate will be the Sum of all Option Rate with Rate Method Code equal to Additive, "A". Edit with ADM Option Rate, "A01060". |
| | | Rate Differential Factor | ADM | 9.99999999 | None | Edit with ADM Coverage Level Differential, "A01040".<br><br>See Section 17 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| Multiplicative Optional Rate Adjustment Factor = | **When Rate Method Code is Multiplicative, "M":**<br><br>∑ Option Rate1 * Option Rate2 * Option Rate3… | Multiplicative Optional Rate Adjustment Factor | Internal | 999999.9999 | Round to 4 decimals. | |
| | | Option Rate | ADM | 9.9999 | None | Edit with ADM Option Rate, "A01060". |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| **Calculations** | **Field Name** | **Record Number** | **Field Number** | **Field Format** | **Field Rounding** | **Rules** |
|---|---|---|---|---|---|---|
| Section 5: Revenue Coverage Add on Rates (Applicable only for Plans 02 and 03) | | | | | | It is recommended that other than hard coding for specific type and practice codes which will eventually change when the new key structure is adopted, that a condition be put in place that will set the add on rate to 0 when the Price Volatility is 0. This condition MUST occur at some point in order to circumvent the Calculation of Preliminary Revenue Protection Add on Rate and Preliminary Revenue Protection with Harvest Price Exclusion Add on Rate, which contains a constraint that the add on rate be at least 1% greater than the base Premium Rate. |
| | Lookup Rate | Internal | | 9999999999.9999 | Round to 4 decimals. | |
| Lookup Rate = Revenue Lookup Rate * Revenue Lookup Adjustment Factor | Revenue Lookup Rate | Internal | | 9999999999.9999 | Round to 4 decimals. | From Section 2. |
| | Revenue Lookup Adjustment Factor | Internal | | 9.99999999 | None | From Section 3. |
| | Adjusted Mean Quantity (AdjMean) | Internal | | 999999.99999999 | Round to 8 decimals. | |
| Adjusted Mean Quantity = Approved Yield * Mean Quantity / 100 | Approved Yield (AY) | P11 | 43 | 99999999.99 | None | For APH Trend and Yield Exclusion, the Approved Yield will be the greater of the calculated approved ~~Trended~~ yield and the adjusted yield ~~(the approved yield that would have been if TA wasn't selected without the effects to cups or floors)~~.<br><br>For skip row commodities, the approved yield is the converted approved yield from the P15 record with skip row (yield conversion factor) applied. |
| | Mean Quantity | ADM | | 999.999999999 | None | Edit with ADM Combo Revenue Factor, "A01030".<br><br>Search the Combo Revenue Factor, "A01030" for the Mean Quantity using Lookup Rate. |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| | Adjusted Standard Deviation Quantity (AdjStndDev) | Internal | | 9999999999.99999999 | Round to 8 decimals. | |
| Adjusted Standard Deviation Quantity = Approved Yield * Standard Deviation Quantity / 100 | Approved Yield (AY) | P11 | 43 | 99999999.99 | None | For APH Trend and Yield Exclusion, the Approved Yield will be the greater of the calculated approved ~~Trended~~ yield and the adjusted yield ~~(the approved yield that would have been if TA wasn't selected without the effects to cups or floors)~~.<br><br>For skip row cotton, the approved yield is the converted approved yield from the P15 record with skip row (yield conversion factor) applied. |
| | Standard Deviation Quantity | ADM | | 999.999999999 | None | Edit with ADM Combo Revenue Factor, "A01030".<br><br>Search the Combo Revenue Factor "A01030" for the Standard Deviation Quantity using Lookup Rate. |
| LnVar = Ln((Price Volatility Factor)^2 + 1) | Log Variance Quantity (LnVar) | Internal | | 999999.99999999 | Round to 8 decimals. | |
| | Price Volatility Factor | ADM | | 9.99 | | Edit with ADM Price, "A00810".<br>~~(Price Volatility Factor^2) is rounded to 2 decimal spaces before adding the 1 and taking the natural log of the sum.~~ |
| LnMean = Ln(Projected Price or Contract Price) − LnVar / 2 | log Mean Quantity (LnMean) | Internal | | 999999.99999999 | Round to 8 decimals. | |
| | Projected Price | ADM | | 99999.9999 | | Edit with ADM Price, "A00810". |
| | Contract Price | P11 | 47 | 9999.9999 | None | Contract price as addressed in Section 1, capped with Max Contract Price from ADM. |
| Yield Draw Quantity$_{Sequence\ Number}$ = **For Sequence Number 1 to 500** Yield Draw Quantity | Yield Draw Quantity | ADM | | S99.999999999 | None | Edit with ADM Beta, "A01020".<br><br>Use the Beta ID field from ADM Insurance Offer, "A00030" and the Beta "A01020" to obtain the applicable draws. There should be 500 draws (or sequence numbers) per Beta Id for every distinct Beta Id in the Insurance Offer ADM, "A00030". |
| Price Draw Quanity$_{Sequence\ Number}$ = **For Sequence Number 1 to 500** Price Draw Quantity | Price Draw Quantity | ADM | | S99.999999999 | None | Edit with ADM Beta, "A01020".<br><br>Use the Beta ID field from ADM Insurance Offer, "A00030" and the Beta "A01020" to obtain the applicable draws. There should be 500 draws (or sequence numbers) per Beta Id for every distinct Beta Id in the Insurance Offer ADM |

| | | | |
|---|---|---|---|
| **Exhibit Name:** Premium Calculation | | | |
| **Exhibit Number:** P11-1, Plan 01, 02, 03 | | **Reinsurance Year:** 2015 | |
| **Record Name:** Acreage | | **Version:** Comment | |
| **Record Code:** P11 | | **Release Date:** 2/5/2015 | |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans  0075 Peanuts<br>0051 Grain Sorghum  0078 Sunflowers<br>0067 Dry Peas  0081 Soybeans<br>0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| | Simulated Yield Protection Losses Quantity (SimYPLosses) | Internal | | 9999999999.99999999999 | Round to 12 decimals. | |
| Simulated Yield Protection Losses = Quantity $$\sum_{i=1}^{500} Round(MAX(0, AY * covlvl - Round(MAX(0, Yield_i * AdjStndDev + AdjMean),12)), 12)$$ | Approved Yield (AY) | P11 | 43 | 99999999.99 | None | For APH Trend and Yield Exclusion, the Approved Yield will be the greater of the calculated approved ~~Trended~~ yield and the adjusted yield ~~(the approved yield that would have been if TA wasn't selected without the effects to cups or floors)~~.<br><br>For skip row commodities, the approved yield is the converted approved yield from the P15 record with skip row (yield conversion factor) applied. |
| | Coverage Level Percent (covlvl) | P14 | 34 | 9.9999 | None | For Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) this will be Effective Coverage Level Percent.  See Section 16 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| | Yield Draw Quantity$_i$ (Yield$_i$) | ADM | | S99.999999999 | None | |
| | Simulated Revenue Protection Losses Quantity(SimRPLosses) | Internal | | 9999999999.99999999999 | Round to 12 decimals. | |
| Simulated Revenue Protection Losses = Quantity $$\sum_{i=1}^{500} Round(MAX(0, AY * covlvl * Round(MAX(ProjPrice, Round(MIN(2 * ProjPrice, Round(e^{(Price_i * Round(VLnVar,12) + LnMean)}, 12)),12)),12) - (Round(MAX(0, Yield_i * AdjStdDev + AdjMean),12) * Round(MIN(2 * ProjPrice, Round(e^{(Price_i * Round(VLnVar,12) + LnMean)},12)), 12))),12)$$ | Approved Yield (AY) | P11 | 43 | 99999999.99 | None | For APH Trend and Yield Exclusion, the Approved Yield will be the greater of the calculated approved ~~Trended~~ yield and the adjusted yield ~~(the approved yield that would have been if TA wasn't selected without the effects to cups or floors)~~.<br><br>For skip row commodities, the approved yield is the converted approved yield from the P15 record with skip row (yield conversion factor) applied. |
| | Coverage Level Percent (covlvl) | P14 | 34 | 9.9999 | None | For Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) this will be Effective Coverage Level Percent.  See Section 16 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| | Yield Draw Quantity$_i$ (Yield$_i$) | ADM | | S99.999999999 | None | |
| | Projected Priced or Contract Price (ProjPrice) | ADM | | 99999.9999 | None | Edit with ADM Price, "A00810".  Contract Price as addressed in Section 1. |

| | | |
|---|---|---|
| **Exhibit Name:** Premium Calculation | | |
| **Exhibit Number:** P11-1, Plan 01, 02, 03 | **Reinsurance Year:** 2015 | |
| **Record Name:** Acreage | **Version:** Comment | |
| **Record Code:** P11 | **Release Date:** 2/5/2015 | |

| <u>Insurance Plan Code</u> | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| <u>**Commodity Code**</u> | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans      0075 Peanuts<br>0051 Grain Sorghum      0078 Sunflowers<br>0067 Dry Peas      0081 Soybeans<br>      0091 Barley |

| <u>Calculations</u> | <u>Field<br>Name</u> | <u>Record<br>Number</u> | <u>Field<br>Number</u> | <u>Field<br>Format</u> | <u>Field<br>Rounding</u> | <u>Rules</u> |
|---|---|---|---|---|---|---|
| | Simulated Revenue Protection with Harvest Price Exclusion Losses Quantity (SimRPhpeLosses) | Internal | | 9999999999.99999999999 | Round to 12 decimals. | |
| Simulated Revenue Protection with Harvest Price Exclusion Losses Quantity $= \sum_{i=1}^{500}$ **Round(** MAX(0, AY * covlvl * ProjPrice - (**Round(** MAX(0, Yield$_i$ * AdjStdDev + AdjMean),**12)** * **Round(** MIN(2 * ProjPrice, **Round(** $e^{(price_i * \text{Round(VLnVar,12)} + \text{LnMean})}$ , **12)),12)))**, **12)** | Approved Yield (AY) | P11 | 43 | 99999999.99 | None | For APH Trend and Yield Exclusion, the Approved Yield will be the greater of the calculated approved ~~Trended~~ yield and the adjusted yield ~~(the approved yield that would have been if TA wasn't selected without the effects to cups or floors)~~.<br><br>For skip row commodities, the approved yield is the converted approved yield from the P15 record with skip row (yield conversion factor) applied. |
| | Coverage Level Percent (covlvl) | P14 | 34 | 9.9999 | None | For Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) this will be Effective Coverage Level Percent.  See Section 16 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| | Projected Priced or Contract Price (ProjPrice) | ADM | | 99999.9999 | None | Edit with ADM Price, "A00810".  Contract Price as addressed in Section 1. |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Exhibit Name:** | Premium Calculation | | | **Reinsurance Year:** | 2015 | |
| **Exhibit Number:** | P11-1, Plan 01, 02, 03 | | | **Version:** | Comment | |
| **Record Name:** | Acreage | | | **Release Date:** | 2/5/2015 | |
| **Record Code:** | P11 | | | | | |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion | |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| Simulated Yield Protection Base Premium Rate = (Simulated Yield Protection Losses Quantity / 500) / (Approved Yield * Coverage Level Percent) | Simulated Yield Protection Base Premium Rate | Internal | | 999999.99999999 | Round to 8 decimals. | For Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) Effective Coverage Level Percent will replace Coverage Level Percent. |
| Simulated Revenue Protection Base Premium Rate = (Simulated Revenue Protection Losses / 500) / (Approved Yield * Coverage Level Percent * (Projected Price or Contract Price)) | Simulated Revenue Protection Base Premium Rate | Internal | | 999999.99999999 | Round to 8 decimals. | For Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) Effective Coverage Level Percent will replace Coverage Level Percent. |
| Simulated Revenue Protection with Harvest Price Exclusion Base Premium Rate = (Simulated Revenue Protection with harvest Price Exclusion Losses Quantity / 500) / (Approved Yield * Coverage level Percent * (Projected Price or Contract Price)) | Simulated Revenue Protection with Harvest Price Exclusion Base Premium Rate | Internal | | 999999.99999999 | Round to 8 decimals. | For Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) Effective Coverage Level Percent will replace Coverage Level Percent. |
| Preliminary Revenue Protection Premium Add on Rate = MAX(Simulated Revenue Protection Base Premium Rate - Simulated Yield Protection Base Premium Rate, 0.01 * Base Premium Rate) | Preliminary Revenue Protection Premium Add on Rate | Internal | | 999999.99999999 | Round to 8 decimals. | This is a control meant to ensure that the premium rate associated with Revenue Protection is at least 1% greater than the basic Base Premium Rate where the Price Volatility Factor is NOT EQUAL to 0. |
| Preliminary Revenue Protection with Harvest Price Exclusion Add on Rate = MAX(Simulated Revenue Protection with Harvest Price Exclusion Base Premium Rate - Simulated Yield Protection Base Premium Rate, -0.5 * Base Premium Rate) | Preliminary Revenue Protection with Harvest Price Exclusion Add on Rate | Internal | | 999999.99999999 | Round to 8 decimals. | This is a control meant to ensure that the premium rate associated with Revenue Protection with Harvest Price Exclusion will not be less than half of the Base Premium Rate where the Price Volatility Factor is NOT EQUAL to 0. |
| Section 6: Historical Revenue Capping (Applicable only for Plans 02 and 03)<br>Note: This Section will not apply if record has a Written Agreement. | | | | | | This section is for calculation the 2010 Revenue Assurance Optional Unit Level Base Premium Rate for coverage level percents 65 thru 85 where applicable. Then it is used in conjunction with the Base Premium Rate and Revenue Add On Rates to compute capped Revenue Add On Rates. This table is set up such that the only value that will change from year to year is the Commodity Year. By doing this we are fixing a point where the premium calculation method was changed and applying an exponential capping over time.<br><br>If there is NOT a corresponding row in the Historical Revenue Capping ADM, "A01110", then this calculation does not need to be performed. Furthermore, since coverage level percents 50, 55, 60 did not exist for Revenue Assurance (RA) historically capping does not need to be performed for those coverage level percents as well. If TA is applicable then this will be based on the TA Effective Coverage Level Percent. See next statement.<br><br>When TA and YE Option is selected, this section does not apply when the Effective Coverage Level is less than 65%. |
| | Capping Yield Ratio | Internal | | 9.99 | Round to 2 decimals. | Cup at 0.50 and Cap at 1.50. |
| Capping Yield Ratio = Rate Yield / Capping Reference Yield | Rate Yield | P15 | 35 | 99999999.99 | None | For skip row commodities, the rate yield is the converted rate yield from the P15 record with skip row (yield conversion factor) applied. |
| | Capping Reference Yield | ADM | | 99999.99 | None | Edit with ADM Historical Revenue Capping, "A01110". |
| | Prior Capping Yield Ratio | Internal | | 9.99 | Round to 2 decimals. | Cup at 0.50 and Cap at 1.50. |
| Prior Capping Yield Ratio = Rate Yield / Prior Capping Reference Yield | Rate Yield | P15 | 35 | 99999999.99 | None | For skip row commodities, the rate yield is the converted rate yield from the P15 record with skip row (yield conversion factor) applied. |

| | | | | |
|---|---|---|---|---|
| **Exhibit Name:** Premium Calculation | | | | |
| **Exhibit Number:** P11-1, Plan 01, 02, 03 | | **Reinsurance Year:** 2015 | | |
| **Record Name:** Acreage | | **Version:** Comment | | |
| **Record Code:** P11 | | **Release Date:** 2/5/2015 | | |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion | |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|---|
| | | Prior Capping Reference Yield | ADM | | 99999.99 | None | Edit with ADM Historical Revenue Capping, "A01110". |
| Capping Rate Multiplier = Capping Yield Ratio ^Capping Exponent Value | | Capping Rate Multiplier | Internal | | 999999.99999999 | Round to 8 decimals. | |
| | | Capping Exponent Value | ADM | | S99.999 | None | Edit with ADM Historical Revenue Capping, "A01110". |
| Prior Capping Rate Multiplier = Prior Capping Yield Ratio ^Prior Capping Exponent Value | | Prior Capping Rate Multiplier | Internal | | 999999.99999999 | Round to 8 decimals. | |
| | | Prior Capping Exponent Value | ADM | | S99.999 | None | Edit with ADM Historical Revenue Capping, "A01110". |
| Historical Capping Base Rate = | **If Rate Method Code = Fixed, "F":**<br><br>Sub County Rate | Historical Capping Base Rate | Internal | | 999999.99999999 | Round to 8 decimals. | |
| | **If Rate Method Code = Additive, "A":**<br><br>Sub County Rate + (Capping Rate Multiplier * Capping Reference Rate + Capping Fixed Rate) | Sub County Rate | ADM | | 9.9999 | None | Edit with ADM Sub County Rate, "A01050". See Section 21 for Written Agreement Sub County Rate information. |
| | **If Rate Method Code = Multiplicative, "M":**<br><br>Sub County Rate * (Capping Rate Multiplier * Capping Reference Rate + Capping Fixed Rate) | Capping Reference Rate | ADM | | 9.9999 | | Edit with ADM Historical Revenue Capping, "A01110". |
| | **Otherwise:**<br><br>(Capping Rate Multiplier * Capping Reference Rate + Capping Fixed Rate) | Capping Fixed Rate | ADM | | 9.9999 | | Edit with ADM Historical Revenue Capping, "A01110". |
| Historical Prior Capping Base Rate = | **If Rate Method Code = Fixed "F":**<br><br>Sub County Rate | Historical Prior Capping Base Rate | Internal | | 999999.99999999 | Round to 8 decimals. | |
| | **If Rate Method Code = Additive, "A":**<br><br>Sub County Rate + (Prior Capping Rate Multiplier * Prior Capping Reference Rate + Prior Capping Fixed Rate) | Sub County Rate | ADM | | 9.9999 | None | Edit with ADM Sub County Rate, "A01050". See Section 21 for Written Agreement Sub County Rate information. |
| | **If Rate Method Code = Multiplicative, "M":**<br><br>Sub County Rate * (Prior Capping Rate Multiplier * Prior Capping Reference Rate + Prior Capping Fixed Rate) | Prior Capping Reference Rate | ADM | | 9.9999 | | Edit with ADM Historical Revenue Capping, "A01110". |
| | **Otherwise:**<br><br>(Prior Capping Rate Multiplier * Prior Capping Reference Rate + Prior Capping Fixed Rate) | Prior Capping Fixed Rate | ADM | | 9.9999 | | Edit with ADM Historical Revenue Capping, "A01110". |
| Historical Basic Unit Base Rate = .9 * MIN(.999, Historical Prior Capping Base Rate * 1.2, Historical Capping Base Rate) | | Historical Basic Unit Base Rate | Internal | | 999999.99999999 | Round to 8 decimals. | |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion | |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|---|
| Historical Revenue Protection Base Premium Rate | **When Unit Structure Code is equal to Optional Unit, "OU", "UA", "UD", or Basic Unit, "BU":** | Coverage Level Percent | P14 | 34 | 9.9999 | None | For Option Code "TA" (Trend Adjustment) wnd "YE" (Yield Exclusion) this will be Effective Coverage Level Percent.  See Section 16 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| | = [beta0 Factor +<br>Beta 1 Factor * Historical Basic Unit Base Rate + Beta 2 Factor * Historical Basic Unit Base Rate ^2 + Beta 3 Factor * Coverage Level Percent +<br>Beta 4 Factor * Coverage Level Percent ^2 +<br>Beta 5 Factor * Approved Yield / Capping Reference Yield +<br>Beta 6 Factor * (Approved Yield / Capping Reference Yield)^2 +<br>Beta 7 Factor * Price Volatility Factor +<br>Beta 8 Factor * Price Volatility Factor^2 +<br>Beta 9 Factor * Historical Basic Unit Base Rate * Coverage Level Percent +<br>Beta 10 Factor * Historical Basic Unit Base Rate * Approved Yield / Capping Reference Yield +<br>Beta 11 Factor * Historical Basic Unit Base Rate * Price Volatility Factor +<br>Beta 12 Factor * Coverage Level Percent * Approved Yield / Capping Reference Yield +<br>Beta 13 Factor * Coverage Level Percent * Price Volatility Factor +<br>Beta 14 Factor * (Approved Yield  / Capping Reference Yield) * Price Volatility Factor ] * Unit Residual Factor X 1.1 | Historical Revenue Protection Base Premium Rate | Internal | | 9999999999.99999999 | Round each intermittent Beta * calculation to 8 decimals as it has been done historically. | |
| | | Beta 0 Factor - Beta 14 Factor | ADM | | S99.999999999 | None | Edit with ADM Historical Revenue Capping, "A01110". |
| | | Price Volatility Factor | ADM | | 9.99 | None | Edit with ADM Price, "A00810". |
| | | Unit Residual Factor | ADM | | 999.999 | None | Edit with ADM Coverage Level Differential, "A01040".<br>See Section 18 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| | **When Unit Structure Code is equal to Enterprise Unit, "EU" & "EP":**<br><br>= Replace 'Unit Residual Factor' with 'Enterprise Unit Residual Factor' | Enterprise Unit Residual Factor | ADM | | 999.999 | None | Edit with ADM Coverage Level Differential, "A01040".<br>See Section 18 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|---|
| | **When Unit Structure Code is equal to Optional Unit, "OU", "UA", "UD", or Basic Unit, "BU":** | Coverage Level Percent | P14 | 34 | 9.9999 | None | For Option Code "TA" (Trend Adjustment) this will be Effective Coverage Level Percent. See Section 16 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| Historical Revenue Protection with Harvest Price Exclusion Base Premium Rate | = [beta0 Factor +<br>Beta 1 Factor * Historical Basic Unit Base Rate + Beta 2 Factor * Historical Basic Unit Base Rate ^2 + Beta 3 Factor * Coverage Level Percent +<br>Beta 4 Factor * Coverage Level Percent ^2 +<br>Beta 5 Factor * Approved Yield / Capping Reference Yield +<br>Beta 6 Factor * (Approved Yield / Capping Reference Yield)^2 +<br>Beta 7 Factor * Price Volatility Factor +<br>Beta 8 Factor * Price Volatility Factor^2 +<br>Beta 9 Factor * Historical Basic Unit Base Rate * Coverage Level Percent +<br>Beta 10 Factor * Historical Basic Unit Base Rate * Approved Yield / Capping Reference Yield +<br>Beta 11 Factor * Historical Basic Unit Base Rate * Price Volatility Factor +<br>Beta 12 Factor * Coverage Level Percent * Approved Yield / Capping Reference Yield +<br>Beta 13 Factor * Coverage Level Percent * Price Volatility Factor +<br>Beta 14 Factor * (Approved Yield / Capping Reference Yield) * Price Volatility Factor ] * Unit Residual Factor X 1.1 | Historical Revenue Protection with Harvest Price Exclusion Base Premium Rate | Internal | | 9999999999.99999999 | Round each intermittent Beta * calculation to 8 decimals as it has been done historically. | |
| | | Beta 0 Factor - Beta 14 Factor | ADM | | S99.999999999 | None | Edit with ADM Historical Revenue Capping, "A01110". |
| | | Price Volatility Factor | ADM | | 9.99 | None | Edit with ADM Price, "A00810". |
| | | Unit Residual Factor | ADM | | 999.999 | None | Edit with ADM Coverage Level Differential, "A01040".<br>See Section 18 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| | **When Unit Structure Code is equal to Enterprise Unit, "EU" & "EP":**<br>= Replace 'Unit Residual Factor' with 'Enterprise Unit Residual Factor' | Enterprise Unit Residual Factor | ADM | | 999.999 | None | Edit with ADM Coverage Level Differential, "A01040".<br>See Section 18 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| Capped Revenue Protection Add on Rate | = MIN(Base Premium Rate + Preliminary Revenue Protection Add On Rate, Historical Revenue Protection Base Premium Rate * 1.2^(Commodity Year - Capping Year)) - Base Premium Rate | Capped Revenue Protection Add on Rate | Internal | | 9999999999.99999999 | Round to 8 decimals. | Use the Preliminary Add On Rates for Insurance Plan Code Revenue Protection, "02" or Revenue Protection with Harvest Price Exclusion, "03" from section 5, the Base Premium Rate from section 2 to calculate the Capped Revenue add on factors. |
| | | Base Premium Rate | P11 | 94 | 999999.99999999 | None | |
| | | Commodity Year | P14 | 10 | CCYY | None | |
| | | Capping Year | ADM | | CCYY | None | Edit with ADM Historical Revenue Capping, "A01110". |
| Capped Revenue Protection with Harvest Price Exclusion Add on Rate | = MIN(Base Premium Rate + Preliminary Revenue Protection with Harvest Price Exclusion Add On Rate, Historical Revenue Protection with Harvest Price Exclusion Base Premium Rate * 1.2^(Commodity Year - Capping Year)) - Base Premium Rate | Capped Revenue Protection with Harvest Price Exclusion Add on Rate | Internal | | 9999999999.99999999 | Round to 8 decimal | Use the Preliminary Add On Rates for Insurance Plan Code Revenue Protection, "02" or Revenue Protection with Harvest Price Exclusion, "03" from section 5, the Base Premium Rate from section 2 to calculate the Capped Revenue add on factors. |
| | | Base Premium Rate | P11 | 94 | 999999.99999999 | None | |
| | | Commodity Year | P14 | 10 | CCYY | None | |
| | | Capping Year | ADM | | CCYY | None | Edit with ADM Historical Revenue Capping, "A01110". |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans     0075 Peanuts<br>0051 Grain Sorghum  0078 Sunflowers<br>0067 Dry Peas      0081 Soybeans<br>                0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| **Section 7: Whole Farm Unit Base Premium Rate** | | | | | | **The Whole Farm Unit Discount is only applicable to the Revenue Protection and Revenue Protection with Harvest Price Exclusion Insurance Plans, unless the Special Provisions allow Whole Farm Units for other Insurance Plans.**<br><br>**Whole Farm Units will now mandate that producers include both their spring and fall planted commodities into the whole farm unit for commodity/plans offering Whole Farm Units.**<br><br>**Malting Barley Coverage is NOT applicable for Whole Farm Unit.  Malting Barley Coverage is provided as a separate Basic Unit.** |
| | Lookup Rate | Internal | | 9999999999.9999 | Round to 4 decimals. | |
| Lookup Rate  = Revenue Lookup Rate * Revenue Lookup Adjustment Factor | Revenue Lookup Rate | Internal | | 9999999999.9999 | Round to 4 decimals. | From Section 2. |
| | Revenue Lookup Adjustment Factor | Internal | | 9.99999999 | None | From Section 3. |
| $\text{Mean Quantity}_{commodityj} = \text{Mean Quantity}_{commodityj} \text{ WHERE Lookup Rate}_{commodityj} = \text{Base Rate}_{commodityj}$ | Mean Quantity $_{commodityj}$ | ADM | | 999.999999999 | None | Edit with ADM Combo Revenue Factor, "A01030".<br><br> Search the Combo Revenue Factor, "A01030" for the Mean Quantity, When the Lookup Rate = Base Rate |
| | Lookup Rate $_{commodityj}$ | Internal | | 9.9999 | None | |
| | Base Rate $_{commodityj}$ | ADM | | 9.9999 | None | Edit with ADM Combo Revenue Factor, "A01030". |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion | |
|---|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley | |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| Standard Deviation Quantity $_{commodityj}$ = Standard Deviation Quantity $_{commodityj}$ WHERE Lookup Rate $_{commodityj}$ = Base Rate $_{commodityj}$ | Standard Deviation Quantity $_{commodityj}$ | ADM | | 999.999999999 | None | Edit with ADM Combo Revenue Factor, "A01030".<br><br>Search the Combo Revenue Factor, "A01030" for the Standard Deviation Quantity, When the Lookup Rate = Base Rate |
| | Lookup Rate $_{commodityj}$ | Internal | | 9.9999 | None | |
| | Base Rate $_{commodityj}$ | ADM | | 9.9999 | None | Edit with ADM Combo Revenue Factor, "A01030". |
| Adjusted Mean Quantity $_{commodityj}$ = Approved Yield $_{commodityj}$ * Mean Quantity $_{commodityj}$ / 100 | Adjusted Mean Quantity $_{commodityj}$ | Internal | | 999999.999999999 | Round to 8 decimals. | |
| | Approved Yield $_{commodityj}$ | P11 | 43 | 99999999.99 | None | For APH Trend and Yield Exclusion, the Approved Yield will be the greater of the calculated approved ~~Trended~~ yield and the adjusted yield ~~(the approved yield that would have been if TA wasn't selected without the effects to cups or floors)~~.<br><br>For skip row commodities, the approved yield is the converted approved yield from the P15 record with skip row (yield conversion factor) applied. |
| Adjusted Standard Deviation Quantity $_{commodityj}$ = Approved Yield $_{commodityj}$ * Standard Deviation Quantity $_{commodityj}$ / 100 | Adjusted Standard Deviation Quantity $_{commodityj}$ | Internal | | 9999999999.99999999 | Round to 8 decimals. | |
| | Approved Yield $_{commodityj}$ | P11 | 43 | 99999999.99 | None | For APH Trend and Yield Exclusion, the Approved Yield will be the greater of the calculated approved ~~Trended~~ yield and the adjusted yield ~~(the approved yield that would have been if TA wasn't selected without the effects to cups or floors)~~.<br><br>For skip row commodities, the approved yield is the converted approved yield from the P15 record with skip row (yield conversion factor) applied. |
| LnVariance $_{commodityj}$ = ln((Price Volatility Factor$_{commodityj}$)^2 + 1) | Log Variancecommodityj (LnVar) | Internal | | 999999.99999999 | Round to 8 decimals. | |
| | Price Volatility Factor$_{commodityj}$ | ADM | | 9.99 | None | Edit with ADM Price, "A00810".<br>~~(Price Volatility Factor^2) is rounded to 2 decimal spaces before adding the 1 and taking the natural log of the sum.~~ |

<table>
<tr><td colspan="2"><b>Exhibit Name:</b> Premium Calculation</td></tr>
<tr><td><b>Exhibit Number:</b> P11-1, Plan 01, 02, 03</td><td><b>Reinsurance Year:</b> 2015</td></tr>
<tr><td><b>Record Name:</b> Acreage</td><td><b>Version:</b> <span style="color:red">Comment</span></td></tr>
<tr><td><b>Record Code:</b> P11</td><td><b>Release Date:</b> 2/5/2015</td></tr>
</table>

| <u>Insurance Plan Code</u> | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| <u>Commodity Code</u> | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | <span style="color:red">0075 Peanuts</span><br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | <u>Field Name</u> | <u>Record Number</u> | <u>Field Number</u> | <u>Field Format</u> | <u>Field Rounding</u> | <u>Rules</u> |
|---|---|---|---|---|---|---|
| $\text{LnMean}_{\text{commodity}j} = \ln(\text{Projected Price or Contract Price}_{\text{commodity}j}) - \text{LnVariance}_{\text{commodity}j} / 2$ | log Mean$_{\text{commodity}j}$ (LnMean) | Internal | | 999999.99999999 | Round to 8 decimals. | |
| | Projected Price or Contract Price$_{\text{commodity}j}$ | ADM | | 99999.9999 | | Edit with ADM Price, "A00810". Contract Price as addressed in Section 1. |
| $\text{Yield Draw Quantity}_{\text{commodity}j \text{ Sequence Number}} = \text{Yield Draw Quantity}_{\text{commodity}}$ | Yield Draw Quantity | ADM | | S99.999999999 | None | ADM Insurance Offer, "A00030", and Beta, "A01020", should be used to obtain the applicable draws. There should be 500 Draws (or sequence numbers) per Beta Id in the ADM Beta, "A01020" for every distinct Beta Id in the ADM Insurance Offer, "A00030". |
| $\text{Price Draw Quantity}_{\text{commodity}j \text{ Sequence Number}} = \text{Price Draw Quantity}_{\text{commodity}}$ | Price Draw Quantity | ADM | | S99.999999999 | None | ADM Insurance Offer, "A00030", and Beta, "A01020", should be used to obtain the applicable draws. There should be 500 Draws (or sequence numbers) per Beta Id in the ADM Beta, "A01020" for every distinct Beta Id in the ADM Insurance Offer, "A00030". |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas    0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| **Calculations** | **Field Name** | **Record Number** | **Field Number** | **Field Format** | **Field Rounding** | **Rules** |
|---|---|---|---|---|---|---|
| | Simulated Revenue Protection Losses Whole Farm (SimRPLossesWF) | Internal | | 999999999.99999999999 | Round to 12 decimals. | Simulated Revenue Protection Losses for All Commodity/Acreage report line in the Whole Farm Unit. |
| | Coverage Level Percent$_{commodityj}$ (covlvl) | P14 | 34 | 9.9999 | None | For Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) this will be Effective Coverage Level Percent. See Section 16 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| Simulated Revenue Protection Losses Whole Farm $=$ $\sum\limits_{i=1}^{500}$ **Round(**MAX(0,$\sum\limits_{j=}^{all\ Commodities}$ Ay$_{commodityj}$ * Acres$_{commodityj}$ * covlvl$_{commodityj}$ * **Round(**MAX(ProjPrice$_{commodityj}$, **Round(**MIN(2 * ProjPrice$_{commodityj}$, **Round(**e$^{(Price_{commodityji} * }$ **Round(**VLnVarcommodityj**,12)** + LnMeancommodityj)**,12))**,12))**,12)** − $\sum\limits_{j=}^{all\ Commodities}$ **Round(**MAX(0,**Round(**Yield$_{commodityji}$ * AdjStdDev$_{commodityj}$ + AdjMean$_{commodityj}$**,12))**,12)** * **Round(**MIN(2 * ProjPrice$_{commodiyj}$, **Round(**e$^{(Price_{commodityji} * }$ **Round(**VLnVarcommodityj**,12)** + LnMeancommodityj)**,12))**,12)** * **Round(**Acres$_{commodityj}$**,12))**, 12)** | Approved Yield$_{commodityj}$ (AY) | P11 | 43 | 99999999.99 | None | Approved Yield for each Commodity/Acreage report line in the Whole Farm Unit.<br><br>For APH Trend and Yield Exclusion, the Approved Yield will be the greater of the calculated approved ~~Trended~~ yield and the adjusted yield ~~(the approved yield that would have been if TA wasn't selected without the effects to cups or floors)~~.<br><br>For skip row commodities, the approved yield is the converted approved yield from the P15 record with skip row (yield conversion factor) applied. |
| | Reported Acreage$_{commodity}$ (Acres) | P11 | 49 | 999999.99 | None | Reported Acreage must equal the sum of all Land, P27, Reported Acreage.<br><br>Reported Acreage for each Commodity/Acreage report line in the Whole Farm Unit. |
| | Projected Price or Contract Price$_{commodityj}$ (ProjPrice) | ADM | | 99999.9999 | None | Edit with ADM Price, "A00810".<br><br>Projected Price or Contract Price for each Commodity/Acreage report line in the Whole Farm Unit. |
| | Price Draw Quanity$_{commodityj}^{i}$ (Price) | ADM | | S99.999999999 | None | Price Draw Quantity for each Commodity/Acreage report line in the Whole Farm Unit. |
| | Log Variance$_{commodityj}$ (LnVar) | Internal | | 999999.99999999 | None | Log Variance for each Commodity/Acreage report line in the Whole Farm Unit. |
| | log Mean$_{commodityj}$ (LnMean) | Internal | | 999999.99999999 | None | Log Mean for each Commodity/Acreage report line in the Whole Farm Unit. |
| | Yield Draw Quantity$_{commodityj}^{i}$ (Yield) | ADM | | S99.999999999 | None | Yield Draw Quantity for each Commodity/Acreage report line in the Whole Farm Unit. |
| | Adjusted Standard Deviation Quantity$_{commodityj}$ (AdjStnDev) | Internal | | 999999999.99999999 | None | Adjusted Standard Deviation Quantity for each Commodity/Acreage report line in the Whole Farm Unit. |
| | Adjusted Mean Quantity$_{commodityj}$ (AdjMean) | Internal | | 999999.999999999 | None | Adjusted Mean Quantity for each Commodity/Acreage report line in the Whole Farm Unit. |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans 0075 Peanuts<br>0051 Grain Sorghum 0078 Sunflowers<br>0067 Dry Peas 0081 Soybeans<br>0091 Barley |

| **Calculations** | **Field Name** | **Record Number** | **Field Number** | **Field Format** | **Field Rounding** | **Rules** |
|---|---|---|---|---|---|---|
| | Simulated Revenue Protection Harvest Price Excluded Losses Whole Farm (SimRPhpeLossesWF) | Internal | | 9999999999.99999999999 | Round to 12 decimals. | Simulated Revenue Protection Harvest Price Excluded Losses for All Commodity/Acreage report lines in the Whole Farm Unit. |
| | Coverage Level Percent$_{commodityj}$ (covlvl) | P14 | 34 | 9.9999 | None | For Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) this will be Effective Coverage Level Percent.  See Section 16 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| $$\text{Simulated Revenue Protection Harvest Price Excluded Losses Whole Farm} = \sum_{i=1}^{500} \textbf{Round}(\text{MAX}(0, \sum_{j=}^{\text{all commodities}} \text{covlvl}_{commodityj} * AY_{commodityj} * \text{ProjPrice}_{commodityj} * \text{Acres}_{commodityj}) - \sum_{j=}^{\text{all commodities}} \textbf{Round}(\text{MAX}(0, \textbf{Round}(\text{Yield}_{commodityji} * \text{AdjStdDev}_{commodityj} + \text{AdjMean}_{commodityj},\textbf{12})),\textbf{12}) * \textbf{Round}(\text{MIN}(2 * \text{ProjPrice}_{commodityj}, \textbf{Round}(e^{(\text{Price}_{commodityji} * \textbf{Round}(\text{VLnVar}_{commodityj},\textbf{12}) + \text{LnMean}_{commodityj})},\textbf{12})),\textbf{12}) * \textbf{Round}(\text{Acres}_{commodityj},\textbf{12})),\textbf{12})$$ | Approved Yield$_{commodityj}$ (AY) | P11 | 43 | 99999999.99 | None | Approved Yield for each Commodity/Acreage report line in the Whole Farm Unit.<br><br>For APH Trend and Yield Exclusion, the Approved Yield will be the greater of the calculated approved ~~Trended~~ yield and the adjusted yield ~~(the approved yield that would have been if TA wasn't selected without the effects to cups or floors)~~.<br><br>For skip row commodities, the approved yield is the converted approved yield from the P15 record with skip row (yield conversion factor) applied. |
| | Reported Acreage$_{commodityj}$ (Acres) | P11 | 49 | 999999.99 | None | Reported Acreage must equal the sum of all Land, P27, Reported Acreage.<br><br>Reported Acreage for each Commodity/Acreage report line in the Whole Farm Unit. |
| | Projected Price or Contract Price$_{commodityj}$ (ProjPrice) | ADM | | 99999.9999 | None | Edit with ADM Price, "A00810".<br><br>Projected Price or Contract Price (as addressed in Section 1) for each Commodity/Acreage report line in the Whole Farm Unit. |
| | Yield Draw Quantity$_{commodityji}$ (Yield) | ADM | | S99.999999999 | None | Yield Draw Quantity for each Commodity/Acreage report line in the Whole Farm Unit. |
| | Adjusted Standard Deviation Quantity$_{commodityj}$ (AdjStnDev) | Internal | | 9999999999.99999999 | None | Adjusted Standard Deviation Quantity for each Commodity/Acreage report line in the Whole Farm Unit. |
| | Adjusted Mean Quantity$_{commodityj}$ (AdjMean) | Internal | | 999999.999999999 | None | Adjusted Mean Quantity for each Commodity/Acreage report line in the Whole Farm Unit. |
| | Price Draw Quanity$_{commodityji}$ (Price) | ADM | | S99.999999999 | None | Price Draw Quantity for each Commodity/Acreage report line in the Whole Farm Unit. |
| | Log Variance$_{commodityj}$ (LnVar) | Internal | | 999999.99999999 | None | Log Variance for each Commodity/Acreage report line in the Whole Farm Unit. |
| | log Mean$_{commodityj}$ (LnMean) | Internal | | 999999.99999999 | None | Log Mean for each Commodity/Acreage report line in the Whole Farm Unit. |
| | Coverage Level Percent$_{commodityj}$ (covlvl) | P14 | 34 | 9.9999 | None | For Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) this will be Effective Coverage Level Percent.  See Section 16 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| $$\text{Revenue Protection Whole Farm Rate} = \cfrac{\cfrac{\text{SimRPLossesWF}}{500}}{\sum_{j=}^{\text{all commodities}}(\text{covlvl}_{commodityj} * AY_{commodityj} * \text{ProjPrice}_{commodityj} *}$$ | Revenue Protection Whole Farm Rate | Internal | | 9999999999.99999999 | Round to 8 decimals. | |

| Exhibit Name: | Premium Calculation | | |
|---|---|---|---|
| **Exhibit Number:** | P11-1, Plan 01, 02, 03 | **Reinsurance Year:** | 2015 |
| **Record Name:** | Acreage | **Version:** | Comment |
| **Record Code:** | P11 | **Release Date:** | 2/5/2015 |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion | |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| $\text{Acres}_{\text{commodityj}}$) | Projected Price or Contract Price$_{\text{commodityj}}$ (ProjPrice) | ADM | | 99999.9999 | None | Edit with ADM Price, "A00810".<br><br>Projected Price or Contract Price (as addressed in Section 1) for each Commodity/Acreage report line in the Whole Farm Unit. |
| | Coverage Level Percent$_{\text{commodityj}}$ (covlvl) | P14 | 34 | 9.9999 | None | For Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) this will be Effective Coverage Level Percent.  See Section 16 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| Revenue Protection with Harvest Price Exclusion = $\dfrac{\dfrac{\text{SimRPhpeLossesWF}}{500}}{\sum\limits_{j=}^{\text{all commodities}}(\text{covlvl}_{\text{commodityj}} * \text{AY}_{\text{commodityj}} * \text{ProjPrice}_{\text{commodityj}} *}$ Whole Farm Rate | Revenue Protection with Harvest Price Exclusion Whole Farm Rate | Internal | | 9999999999.99999999 | Round to 8 decimals. | |
| $\text{Acres}_{\text{commodityj}}$) | Projected Price or Contract Price$_{\text{commodityj}}$ (ProjPrice) | ADM | | 99999.9999 | None | Edit with ADM Price, "A00810".<br><br>Projected Price or Contract Price (as addressed in Section 1) for each Commodity/Acreage report line in the Whole Farm Unit. |
| **When Insurance Plan Code equals Revenue Protection, "02":**<br><br>Whole Farm Base Premium Rate = Revenue Protection Whole Farm Rate | Whole Farm Base Premium Rate | Internal | | 9999999999.99999999 | None | |
| **When Insurance Plan Code equals Revenue Protection with Harvest Price Exclusion, "03":**<br><br>Whole Farm Base Premium Rate = Revenue Protection with Harvest Price Exclusion Whole Farm Rate | Whole Farm Base Premium Rate | Internal | | 9999999999.99999999 | None | |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| **Section 8: Premium Rate** | | | | | | **The Premium Rate for ALL Unit Structures should be capped at .999 in the event various adjustments to the Base Premium Rate would cause it to exceed 1.0.** |
| **When Unit Structure Code equals Whole Farm Unit, "WU":**<br><br>Premium Rate = MIN(.999,<br>Round(Whole Farm Base Premium Rate<br>* Sum ((Reported Acreage * Multiplicative Optional Rate Adjustment Factor) / Sum(Total Reported Acreage) for Whole Farm including Prevented Planting)<br>+ Sum ((Reported Acreage * Additive Optional Rate Adjustment Factor) / Sum(Total Reported Acreage) for Whole Farm including Prevented Planting), 8)) | Premium Rate | Internal | | 9999999999.99999999 | Round to 8 decimals. | Premium Rate is capped at 0.99900000.<br>For situations where the option factors vary by Commodity, a reported Acreage weighted average of the Option Factors should be used to determine the Multiplicative and Additive Optional Rate adjustments to be used in the computation of the Premium Rate for Whole Farm Unit. |
| | Total Reported Acreage | Internal | | 99999999.99 | None | Total Reported Acreage for the Whole Farm including Prevented Planting. |
| **When Unit Structure Code DOES NOT EQUAL Whole Farm Unit, "WU":**<br><br>Premium Rate = MIN(.999, Base Premium Rate * Unit Structure Discount Factor * Multiplicative Optional Rate Adjustment Factor+ Additive Optional Rate Factor + Capped Revenue Add On Factor) | Premium Rate | Internal | | 9999999999.99999999 | Round to 8 decimals. | **Set Capped Revenue Add On Factor as follows:**<br>If Insurance Plan Code equals 01, Capped Revenue Add On Factor will equal zero.<br>If Unit Structure Code does not equal Whole Farm (WU), set Capped Revenue Add On Factor as follows:<br>If Section 6 is applicable, Capped Revenue Add On Factor will equal Capped Revenue Protection Add On Rate when Insurance Plan Code equals 02 or Capped Revenue Protection with Harvest Price Exclusion Add On Rate when Insurance Plan Code equals 03.<br>If Section 6 is not applicable, Capped Revenue Add On Factor will equal Preliminary Revenue Protection Add On Rate when Insurance Plan Code equals 02 or Preliminary Revenue Protection with Harvest Price Exclusion Add On Rate when Insurance Plan Code equals 03. |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans　0075 Peanuts<br>0051 Grain Sorghum　0078 Sunflowers<br>0067 Dry Peas　0081 Soybeans<br>　0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| **Section 9: Total Premium Amount, Subsidy Amount, and Producer Premium Amount** | | | | | | |
| Preliminary Total Premium = Premium Liability Amount * Premium Rate * Experience Factor * Premium Surcharge Percent * Total Premium Multiplicative Optional Rate Adjustment Factor | Preliminary Total Premium | Internal | | 9999999999 | Round to whole number. | |
| | Experience Factor | P11 | 48 | 9.999 | None | Experience Factor is only applicable for Insurance Plan Code Yield Protection, "01". |
| | Premium Surcharge Percent | Internal | | | | Use when the Approved Yield Had a Cup or Surcharge applied. |
| | Total Premium Multiplicative Optional Rate Adjustment Factor | ADM | | 9.9999 | None | If Option Rate with Rate Method Code equal "T". Edit with ADM Option Rate, "A01060". Currently this will be used for Short Rate Option. |
| Total Premium Amount = Preliminary Total Premium * Multiple Commodity Adjustment Factor | Total Premium Amount | P11 | 92 | 9999999999 | Round to whole number. | |
| | Multiple Commodity Adjustment Factor | ICE | | 9999.999 | None | Edit with ICE Multiple Cropping, "D00063". Used when there is a first Commodity Loss. |
| Subsidy Amount = Total Premium Amount * Subsidy Percent | Subsidy Amount | P11 | 90 | 9999999999 | Round to whole number. | If this record qualifies for Beginning Farmer and Rancher or Native Sod, see Section 24 for subsidy calculations. |
| | Subsidy Percent | ADM | | 9.999 | None | Edit with ADM Subsidy Percent, "A00070". |
| Producer Premium Amount = Total Premium Amount - Subsidy Amount | Producer Premium Amount | P11 | 93 | 9999999999 | Round to whole number. | |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| **Malting Barley Options MA & MB** | | | | | | If either the Malting Barley Option A or Malting Barley option B is chosen, a new record(s) will need to be prepared for this endorsement.  These record should meet the following criteria:<br>1) The acreage records for the MA or MB records should be less than or equal to the acreage of the base offer<br>2) The Base Offer will not have the MA/MB option returned in the option field<br>3) The Acreage records with the MA or MB option will have the MA or MB option indicated in the option Field. |
| | | | | | | **Malting Barley Option A Requirements:**<br><br>To qualify for this option, the producer must:<br>1) Provide acceptable Malting Barley sales records for at least the 4 most recent Commodity Years and the number of acres planted to malting varieties.<br>2) If produced under a contract or price agreement, a copy of the current contract or price agreement must be provided on or before the acreage reporting date if the additional value price from the contract/price agreement is to be used for determining liability. |
| | | | | | | **Malting Barley Option B Requirements:**<br><br>To qualify for this option, the producer must:<br>1) Have planted Malting Barley for at least one of the three Commodity Years directly preceding the previous Commodity Year<br>2) Sold at least 75% of the contracted amount for the Commodity Year such contract was applicable<br>3) Provide a copy of the prior contract and acceptable records of sales. |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | | Field<br>Name | Record<br>Number | Field<br>Number | Field<br>Format | Field<br>Rounding | Rules |
|---|---|---|---|---|---|---|---|
| **Section 10: Liability Calculation** | | | | | | | |
| Approved Yield = | Approved Yield calculated in accordance with the Basic Provisions<br><br>OR<br><br>∑(Number of Bushels / Reported Acreage) / ∑ number of years | Approved Yield | P11 | 43 | 999999999.99 | | According to the Malting Barley Price and Quality Endorsement, the Approved Yield can be based on either the procedures established in the Basic Provisions, or by averaging the yields required to meet the qualifications for Option A. |
| Premium Guarantee Per Acre Amount | = Approved Yield * Coverage Level Percent | Premium Guarantee Per Acre Amount | Internal | | 999999999.99 | Round to 1 decimals. | Common Crop Insurance Policy definition 'production guarantee (per acre)'. |
| | | Approved Yield | P11 | 43 | 99999999.99 | None | |
| | | Coverage Level Percent | P14 | 34 | 9.9999 | None | |
| Price Election Amount = | Additional Value Price | Price Election Amount | Internal | | 9999.9999 | None | Price Election Amount will be set equal to the Additional Value Price.  The Additional Value price is the difference between the contract price and regular Barley's Projected Price or the additional value price provided in the ADM if the contract price is not used.<br>1) The Contract Price:  a) The sale price per bushel established in the contract or price agreement less the projected price for Barley.  b) The amount per bushel (not including discounts or incentives) above the feed barley price that is determined at a later date, provided the method of determining the price is specified in the contract or price agreement.  c) If the contract or price agreement has a variable price option, the price OR the method of determining a price that will be treated as the sale price.<br><br>2) The additional Value price indicated in the actuarial documents: a) if there is no malting barley contract. b) The contract or price agreement was not provided by the acreage reporting date.<br><br>3) The additional Value price:  a) For Option A **WILL NOT EXCEED $1.25**.  b) For Option B **WILL NOT EXCEED $2.00**. |

| Exhibit Name: | Premium Calculation | | |
|---|---|---|---|
| **Exhibit Number:** | P11-1, Plan 01, 02, 03 | **Reinsurance Year:** | 2015 |
| **Record Name:** | Acreage | **Version:** | Comment |
| **Record Code:** | P11 | **Release Date:** | 2/5/2015 |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans    0075 Peanuts<br>0051 Grain Sorghum    0078 Sunflowers<br>0067 Dry Peas    0081 Soybeans<br>    0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| Reported Acreage (Record 1) = MIN(Total Reported Acreage, Malting Barley Contract 1 Bushels / Approved Yield)<br><br>Reported Acreage (Record 2) = MIN(Total Reported Acreage - Reported Acreage for Record 1, Malting Barley Contract 2 Bushels / Approved Yield)<br><br>Reported Acreage (Record X) = MIN(Total Reported Acreage - $\sum_{i=1}^{x-1}$ Malting Barley Contract I, malting Barley Contract X) | Reported Acreage | Internal | | | None | There may need to be multiple record is there are multiple contracts and/or there are more acres insured to yield more bushels than the contract(s) call for.<br><br>Acreage in excess of contracted acreage will be insured at the additional value price on the actuarial documents.<br><br>If there is not enough reported acres to support all of the contracts, Insurance will be limited to what the total reported acreage will support. |
| Premium Guarantee Per Acre Amount = Approved Yield * Coverage Level Percent | Premium Guarantee Per Acre Amount | Internal | | 999999999.99 | Round to 1 decimals. | Determine the Premium Guarantee Per Acre Amount and the Guarantee Per Acre Amount for each record.<br>Common Crop Insurance Policy definition 'production guarantee (per acre)'. |
| **If Late Planting applies:** | | | | | | |
| Guarantee Per Acre Amount = Premium Guarantee Per Acre Amount * Guarantee Adjustment Factor | Guarantee Per Acre  Amount | Internal | | 999999999.99 | Round to 1 decimals. | Prevented Planting does not apply to Malting Barley Option A or Malting Barley Option B records. |
| Premium Total Guarantee Amount = Premium Guarantee Per Acre Amount * Price Election Amount * Reported Acreage | Premium Total Guarantee Amount | Internal | | 99999999.99 | Round to 2 decimals. | |
| Total Guarantee Amount = Guarantee Per Acre Amount * Price Election Amount * Reported Acreage | Total Guarantee Amount | P11 | 100 | 99999999.99 | Round to 2 decimals. | |
| Premium Liability Amount = Premium Total Guarantee Amount * Insured Share Percent | Premium Liability Amount | Internal | | 9999999999 | Round to whole number. | |
| Liability Amount = Total Guarantee Amount * Insured Share Percent | Liability Amount | P11 | 91 | 9999999999 | Round to whole number. | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Exhibit Name:** Premium Calculation | | | | | | |
| **Exhibit Number:** P11-1, Plan 01, 02, 03 | | | | | | |
| **Record Name:** Acreage | | | **Reinsurance Year:** 2015 | | | |
| **Record Code:** P11 | | | **Version:** Comment | | | |
| | | | **Release Date:** 2/5/2015 | | | |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion | |
|---|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley | |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| **Section 11: Premium Rate** | | | | | | |
| Premium Rate = MIN(.999, Base Premium Rate * Unit Structure Discount Factor * Multiplicative Optional Rate Adjustment Factor+ Additive Optional Rate Factor) | Premium Rate | Internal | | 9999999999.99999999 | Round to 8 decimals. | Premium Rate is capped at 0.99900000.<br>To Determine the Premium Rate for the Malting Barley Option Records:<br>1) Use the Rate Yield as determined under normal procedures.<br>2) Process the Rate Yield through section 2 of these procedures as if it was a normal Yield Protection Plan of Insurance using the rating components for the regular Barley offer.<br>3) Find the Basic Unit Discount Factor to be applied later from section 3 of these procedures as if it was a normal Yield Protection Plan of Insurance<br>4) Find the applicable Malting Barley Option Factor to be applied later from section 4. This will be the only option factor applied to a Malting Barley record.<br>5) Sections 5, 6, 7 are not applicable for MA/MB records. |
| | Multiplicative Optional Rate Adjustment Factor | Internal | | 999999.9999 | | |
| | Additive Optional Rate Adjustment Factor | Internal | | 999999.9999 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Exhibit Name:** Premium Calculation | | | | | | |
| **Exhibit Number:** P11-1, Plan 01, 02, 03 | | | **Reinsurance Year:** 2015 | | | |
| **Record Name:** Acreage | | | **Version:** Comment | | | |
| **Record Code:** P11 | | | **Release Date:** 2/5/2015 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Insurance Plan Code** | 01 Yield Protection | | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion | |
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley | |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| **Section 12: Total Premium Amount, Subsidy Amount, and Producer Premium Amount** | | | | | | |
| Preliminary Total Premium = Premium Liability Amount * Premium Rate * Experience Factor * Premium Rate Surcharge Percent | Preliminary Total Premium | Internal | | 9999999999 | Round to whole number. | |
| | Experience Factor | P11 | 48 | 9.999 | None | Experience Factor is only applicable for Insurance Plan Code Yield Protection, "01". |
| | Premium Rate Surcharge Percent | | | | | |
| Total Premium Amount = Preliminary Total Premium * Multiple Commodity Adjustment Factor | Total Premium Amount | P11 | 92 | 9999999999 | Round to whole number. | |
| | Multiple Commodity Adjustment Factor | ICE | | 9999.999 | None | Edit with ICE Multiple Cropping, "D00063". |
| Subsidy Amount = Total Premium Amount * Subsidy Percent | Subsidy Amount | P11 | 90 | 9999999999 | Round to whole number. | If this record qualifies for Beginning Farmer and Rancher or Native Sod, see Section 24 for subsidy calculations. |
| | Subsidy Percent | ADM | | 9.999 | None | Edit with ADM Subsidy Percent, "A00070". |
| Producer Premium Amount = Total Premium Amount - Subsidy Amount | Producer Premium Amount | P11 | 93 | 9999999999 | Round to whole number. | |
| **Cottonseed Endorsement Option 'SE'** | | | | | | Information (Approved Yield, Reported Acreage, Insured Share Percent) will be obtained from Cotton P11 record and Rate Yield from P15 record associated with the Cottonseed record. CAT does not apply to Plan 01 Cottonseed. Unit Structure Code 'WU' does not apply to Cottonseed. |
| **Section 13: Liability Calculation** | | | | | | |
| Modified Yield = Approved Yield * Option Conversion Factor | Modified Yield | Internal | | 99999999.99 | Round to whole Number. | |
| | Approved Yield | P11 | 43 | 99999999.99 | None | From Cotton P11 record.<br>For skip row cotton, the approved yield is the converted approved yield from the P15 record with skip row (yield conversion factor) applied. |
| | Option Conversion Factor | ADM | | 9.9999 | None | Edit with ADM Option Rate, "A01060". |
| Premium Guarantee Per Acre Amount = Modified Yield * Coverage Level Percent | Premium Guarantee Per Acre Amount | Internal | | 999999999.99 | Round to whole number. | |
| | Coverage Level Percent | P14 | 34 | 9.9999 | None | |

| Exhibit Name: | Premium Calculation | | | Reinsurance Year: | 2015 |
|---|---|---|---|---|---|
| Exhibit Number: | P11-1, Plan 01, 02, 03 | | | Version: | Comment |
| Record Name: | Acreage | | | Release Date: | 2/5/2015 |
| Record Code: | P11 | | | | |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| Commodity Code | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| Guarantee Per Acre Amount = | **When Guarantee Adjustment Type Code equals Late Planting, "L" OR Prevented Planting, "P":** | Guarantee Per Acre Amount | Internal | | 999999999.99 | Round to whole number. | |
| | Premium Guarantee Per Acre Amount * Guarantee Adjustment Factor | Guarantee Adjustment Factor | P11 | 72 | 0.999 | None | Edit with the Guarantee Adjustment ICE, "D00068". |
| Price Election Amount = Projected Price * Price Election Percent | | Price Election Amount | Internal | | 9999.9999 | Round to nearest one-tenth cent [$9.999]. | Cottonseed will equal the Projected Price from ADM regardless of Price Election Percent for Cotton Lint. |
| | | Projected Price | ADM | | 99999.9999 | | |
| | | Price Election Percent | ICE | | 9.9999 | None | Will always be 1.000 for Cottonseed. |
| Premium Total Guarantee Amount = Premium Guarantee Per Acre Amount * Price Election Amount * Reported Acreage | | Premium Total Guarantee Amount | Internal | | 99999999.99 | Round to 2 decimals. | |
| | | Price Election Amount | Internal | | 9999.9999 | None | |
| | | Reported Acreage | P11 | 49 | 99999999.99 | None | From Cotton P11 record. |
| Total Guarantee Amount = Guarantee Per Acre Amount * Price Election Amount * Reported Acreage | | Total Guarantee Amount | P11 | 100 | 99999999.99 | Round to 2 decimals. | |
| | | Price Election Amount | Internal | | 9999.9999 | None | |
| | | Reported Acreage | P11 | 49 | 999999.99 | None | From Cotton P11 record. |
| Premium Liability Amount = Premium Total Guarantee Amount * Insured Share Percent | | Premium Liability Amount | Internal | | 9999999999 | Round to whole number. | |
| | | Insured Share Percent | P11 | 44 | 9.9999 | None | From Cotton P11 record. |
| Liability Amount = Total Guarantee Amount * Insured Share Percent | | Liability Amount | P11 | 91 | 9999999999 | Round to whole number. | |
| | | Insured Share Percent | P11 | 44 | 9.9999 | None | From Cotton P11 record. |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | Field<br>Name | Record<br>Number | Field<br>Number | Field<br>Format | Field<br>Rounding | Rules |
|---|---|---|---|---|---|---|
| **Section 14: Premium Rate** | | | | | | |
| Premium Rate = MIN(.999, Base Premium Rate * Unit Structure Discount Factor * Multiplicative Optional Rate Adjustment Factor+ Additive Optional Rate Factor) | Premium Rate | Internal | | 9999999999.99999999 | Round to 8 decimals. | To Determine the Premium Rate for the Cottonseed records:<br>1) Use the Rate Yield as determined under normal procedures.<br>2) Process the Rate Yield through section 2 of these procedures using the rating components for regular Cotton offer.<br>3) Find the Unit Structure Discount Factor to be applied later from section 3 of these procedures for regular Cotton offer.<br>4) Find the applicable Option Factors to be applied later from section 4 for regular Cotton offer.<br>5) Sections 5, 6, 7 are not applicable for Cottonseed records. |
| | Multiplicative Optional Rate Adjustment Factor | Internal | | 999999.9999 | | |
| | Additive Optional Rate Adjustment Factor | Internal | | 999999.9999 | | |
| **Section 15: Total Premium Amount, Subsidy Amount, and Producer Premium Amount** | | | | | | |
| Preliminary Total Premium = Premium Liability Amount * Premium Rate * Experience Factor * Premium Rate Surcharge Percent | Preliminary Total Premium | Internal | | 9999999999 | Round to whole number. | |
| | Experience Factor | P11 | 48 | 9.999 | None | Experience Factor is only applicable for Insurance Plan Code Yield Protection, "01". |
| | Premium Rate Surcharge Percent | | | | | |
| Total Premium Amount = Preliminary Total Premium * Multiple Commodity Adjustment Factor | Total Premium Amount | P11 | 92 | 9999999999 | Round to whole number. | |
| | Multiple Commodity Adjustment Factor | ICE | | 9999.999 | None | Edit with ICE Multiple Cropping, "D00063". |
| Subsidy Amount = Total Premium Amount * Subsidy Percent | Subsidy Amount | P11 | 90 | 9999999999 | Round to whole number. | If this record qualifies for Beginning Farmer and Rancher or Native Sod, see Section 24 for subsidy calculations. |
| | Subsidy Percent | ADM | | 9.999 | None | Edit with ADM Subsidy Percent, "A00070". |
| Producer Premium Amount = Total Premium Amount - Subsidy Amount | Producer Premium Amount | P11 | 93 | 9999999999 | Round to whole number. | |

| | | | |
|---|---|---|---|
| **Exhibit Name:** Premium Calculation | | | |
| **Exhibit Number:** P11-1, Plan 01, 02, 03 | | **Reinsurance Year:** 2015 | |
| **Record Name:** Acreage | | **Version:** Comment | |
| **Record Code:** P11 | | **Release Date:** 2/5/2015 | |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans    0075 Peanuts<br>0051 Grain Sorghum    0078 Sunflowers<br>0067 Dry Peas    0081 Soybeans<br>                0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| **APH Yield Trend (Trend Adjustment Option 'TA') and Yield Exclusion (Option 'YE')** | | | | | | Trend Adjustment Option (TA) and Yield Exclusion Option (YE) ONLY available in select counties for selected crops.  See "white papers" for examples. |
| **Section 16:  Effective Coverage Level Calculation** | | | | | | |
| | Effective Coverage Level Percent | Internal | | 9.99 | Rounded to 2 decimal places. | |
| | Coverage Level Percent | P14 | 34 | 9.9999 | None | |
| Effective Coverage Level Percent = Coverage Level Percent * Approved Yield/Adjusted Yield | Approved Yield | P11 | 73 | 99999999.99 | None | For APH Trend and Yield Exclusion, the Approved Yield will be the greater of the calculated approved Trended yield and the adjusted yield (the approved yield that would have been if TA wasn't selected without the effects to cups or floors).<br><br>For skip row commodities, the approved yield is the converted approved yield from the P15 record with skip row (yield conversion factor) applied. |
| | Adjusted Yield | P15 | 44 | 99999999.99 | None | For skip row commodities, the adjusted yield is the converted adjusted yield from the P15 record with skip row (yield conversion factor) applied. |
| **Section 17:  Rate Differential Factor** | | | | | | When Trend Adjustment Option (TA) was chosen and yield reflects a trend or when Yield Exclusion Option "YE" was chosen. |
| | Rate Differential Factor | Internal | | 9.999999999 | Round to 9 decimal places | |
| | Base Rate Differential Factor | ADM | | 9.999999999 | None | Base Rate Differential Factor is equal to Rate Differential for Minimum of 1) Maximum available Coverage Level or; 2) available Coverage Level less than or equal to Effective Coverage Level.  Edit with ADM Coverage Level Differential, "A01040". |
| Rate Differential Factor = Round(Base Rate Differential Factor + (Upper Bound Rate Differential Factor - Lower Bound Rate Differential Factor) * (Effective Coverage Level Percent - Floored Effective Coverage Level Percent) * 20, 9) | Upper Bound Rate Differential Factor | ADM | | 9.999999999 | None | Based on the 'upper bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on the higher ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the highest ADM Coverage Level. |
| | Lower Bound Rate Differential Factor | ADM | | 9.999999999 | None | Based on the 'lower bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level Percent equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level Percent.<br>If the Effective Coverage Level Percent falls between existing ADM Coverage Levels then this will be based on the lower ADM Coverage Level. |
| | Effective Coverage Level Percent | Internal | | 9.99 | None | |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| | Floored Effective Coverage Level Percent | Internal | | 9.99 | None | Based on the 'floored' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level Percent equals an existing ADM Coverage Level then this will be the Effective Coverage Level Percent.<br>If the Effective Coverage Level Percent falls between existing ADM Coverage Levels then this will be the lower ADM Coverage Level.<br>If the Effective Coverage Level Percent is greater than the maximum ADM Coverage Level then this will be the highest ADM Coverage Level. |

| | | | | |
|---|---|---|---|---|
| **Exhibit Name:** Premium Calculation | | | | |
| **Exhibit Number:** P11-1, Plan 01, 02, 03 | | **Reinsurance Year:** 2015 | | |
| **Record Name:** Acreage | | **Version:** Comment | | |
| **Record Code:** P11 | | **Release Date:** 2/5/2015 | | |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| **Calculations** | **Field Name** | **Record Number** | **Field Number** | **Field Format** | **Field Rounding** | **Rules** |
|---|---|---|---|---|---|---|
| | Prior Year Rate Differential Factor | Internal | | 9.999999999 | Round to 9 decimal places. | |
| | Base Prior Year Rate Differential Factor | ADM | | 9.999999999 | None | Base Prior Year Rate Differential Factor is equal to Prior Year Rate Differential for Minimum of 1) Maximum available Coverage Level or; 2) available Coverage Level less than or equal to Effective Coverage Level. Edit with ADM Coverage Level Differential, "A01040". |
| | Upper Bound Prior Year Rate Differential Factor | ADM | | 9.999999999 | None | Based on the 'upper bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040". <br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on the higher ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the highest ADM Coverage Level. |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans    0075 Peanuts<br>0051 Grain Sorghum    0078 Sunflowers<br>0067 Dry Peas    0081 Soybeans<br>    0091 Barley |

| | **Calculations** | **Field Name** | **Record Number** | **Field Number** | **Field Format** | **Field Rounding** | **Rules** |
|---|---|---|---|---|---|---|---|
| Prior Year Rate Differential Factor | = Round(Base Prior Year Rate Differential Factor + (Upper Bound Prior Year Rate Differential Factor - Lower Bound Prior Year Rate Differential Factor) * (Effective Coverage Level Percent - Floored Effective Coverage Level Percent) * 20, 9) | Lower Bound Prior Year Rate Differential Factor | ADM | | 9.999999999 | None | Based on the 'lower bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040". If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level. If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on lower ADM Coverage Level. If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the second highest ADM Coverage Level. |
| | | Effective Coverage Level Percent | Internal | | 9.99 | None | |
| | | Floored Effective Coverage Level Percent | Internal | | 9.99 | None | Based on the 'floored' Coverage Level.  Edit with ADM Coverage Level Differential, "A01040". If the Effective Coverage Level Percent equals an existing ADM Coverage Level then this will be the Effective Coverage Level Percent. If the Effective Coverage Level Percent falls between existing ADM Coverage Levels then this will be the lower ADM Coverage Level. If the Effective Coverage Level Percent is greater than the maximum ADM Coverage Level then this will be the highest ADM Coverage Level. |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion | |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|---|
| **Section 18: Unit Residual Factor** | | | | | | | The lookup/interpolation/extrapolation procedure for 'Unit Residual Factor and Prior Unit Residual Factor' when Trend Adjustment Option (TA) was chosen and yield reflects a trend or when Yield Exclusion Option "YE" was chosen. |
| **When Unit Structure Code is equal to Optional Unit, "OU", "UA", "UD", or Basic Unit, "BU", use the following calculations for Unit Residual Factor and Prior Year Unit Residual Factor:** | | | | | | | |
| Unit Residual Factor = | Round(Base Unit Residual Factor + (Upper Bound Unit Residual Factor - Lower Bound Unit Residual Factor) * (Effective Coverage Level Percent - Floored Effective Coverage Level Percent) * 20, 3) | Unit Residual Factor | Internal | | 999.999 | Round to 3 decimal places. | The cap value for the Residual Factors is the MAX(Residual Factor) from all coverage levels within the chosen unit structure |
| | | Base Unit Residual Factor | ADM | | 999.999 | None | Base Unit Residual Factor is equal to Unit Residual for Minimum of 1) Maximum available Coverage Level or; 2) available Coverage Level less than or equal to Effective Coverage Level. Edit with ADM Coverage Level Differential, "A01040". |
| | | Upper Bound Unit Residual Factor | ADM | | 999.999 | None | Based on the 'upper bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040". If the Effective Coverage Level Percent equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level Percent. If the Effective Coverage Level Percent falls between existing ADM Coverage Levels then this will be based on the higher ADM Coverage Level. If the Effective Coverage Level Percent is greater than the maximum ADM Coverage Level then this will be based on the highest ADM Coverage Level. |
| | | Lower Bound Unit Residual Factor | ADM | | 999.999 | None | Based on the 'lower bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040". If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level. If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on the lower ADM Coverage Level. If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the second highest ADM Coverage Level. |
| | | Effective Coverage Level Percent | Internal | | 9.99 | None | |
| | | Floored Effective Coverage Level Percent | Internal | | 9.99 | None | Based on the 'floored' Coverage Level. Edit with ADM Coverage Level Differential, "A01040". If the Effective Coverage Level Percent equals an existing ADM Coverage Level then this will be the Effective Coverage Level Percent. If the Effective Coverage Level Percent falls between existing ADM Coverage Levels then this will be the lower ADM Coverage Level. If the Effective Coverage Level Percent is greater than the maximum ADM Coverage Level then this will be the highest ADM Coverage Level. |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Exhibit Name:** Premium Calculation | | | | | | |
| **Exhibit Number:** P11-1, Plan 01, 02, 03 | | | **Reinsurance Year:** 2015 | | | |
| **Record Name:** Acreage | | | **Version:** Comment | | | |
| **Record Code:** P11 | | | **Release Date:** 2/5/2015 | | | |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| | Prior Year Unit Residual Factor | Internal | | 999.999 | Round to 3 decimal places. | The cap value for the Residual Factors is the MAX(Residual Factor) from all coverage levels within the chosen unit structure |
| | Base Prior Year Unit Residual Factor | ADM | | 999.999 | None | Base Prior Year Unit Residual Factor is equal to Prior Year Unit Residual for Minimum of 1) Maximum available Coverage Level or; 2) available Coverage Level less than or equal to Effective Coverage Level.  Edit with ADM Coverage Level Differential, "A01040". |
| | Upper Bound Prior Year Unit Residual Factor | ADM | | 999.999 | None | Based on the 'upper bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on the higher ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the highest ADM Coverage Level. |
| Prior Year Unit Residual Factor = Round(Base Prior Year Unit Residual Factor + (Upper Bound Prior Year Unit Residual Factor - Lower Bound Prior Year Unit Residual Factor) * (Effective Coverage Level Percent - Floored Effective Coverage Level Percent) * 20, 3) | Lower Bound Prior Year Unit Residual Factor | ADM | | 999.999 | None | Based on the 'lower bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on lower ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the second highest ADM Coverage Level. |
| | Effective Coverage Level Percent | Internal | | 9.99 | None | |
| | Floored Effective Coverage Level Percent | Internal | | 9.99 | None | Based on the 'floored' Coverage Level.  Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be the lower ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be the highest ADM Coverage Level. |

| Exhibit Name: | Premium Calculation | | |
|---|---|---|---|
| Exhibit Number: | P11-1, Plan 01, 02, 03 | Reinsurance Year: | 2015 |
| Record Name: | Acreage | Version: | Comment |
| Record Code: | P11 | Release Date: | 2/5/2015 |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| Commodity Code | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| **When Unit Structure Code is equal to Enterprise Unit, 'EU' or 'EP', use the following calculations for Enterprise Unit Residual Factor and Prior Year Enterprise Unit Residual Factor:** | | | | | | |
| Enterprise Unit Residual Factor = Round(Base Enterprise Unit Residual Factor + (Upper Bound Enterprise Unit Residual Factor - Lower Bound Enterprise Unit Residual Factor) * (Effective Coverage Level Percent - Floored Effective Coverage Level Percent) * 20, 3) | Enterprise Unit Residual Factor | Internal | | 999.999 | Round to 3 decimal places. | The cap value for the Residual Factors is the MAX(Residual Factor) from all coverage levels within the chosen unit structure |
| | Base Enterprise Unit Residual Factor | ADM | | 999.999 | None | Base Enterprise Unit Residual Factor is equal to Enterprise Unit Residual for Minimum of 1) Maximum available Coverage Level or; 2) available Coverage Level less than or equal to Effective Coverage Level. Edit with ADM Coverage Level Differential, "A01040". |
| | Upper Bound Enterprise Unit Residual Factor | ADM | | 999.999 | None | Based on the 'upper bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level Percent equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level Percent.<br>If the Effective Coverage Level Percent falls between existing ADM Coverage Levels then this will be based on the higher ADM Coverage Level.<br>If the Effective Coverage Level Percent is greater than the maximum ADM Coverage Level then this will be based on the highest ADM Coverage Level. |
| | Lower Bound Enterprise Unit Residual Factor | ADM | | 999.999 | None | Based on the 'lower bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on the lower ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the second highest ADM Coverage Level. |
| | Effective Coverage Level Percent | Internal | | 9.99 | None | |
| | Floored Effective Coverage Level Percent | Internal | | 9.99 | None | Based on the 'floored' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level Percent equals an existing ADM Coverage Level then this will be the Effective Coverage Level Percent.<br>If the Effective Coverage Level Percent falls between existing ADM Coverage Levels then this will be the lower ADM Coverage Level.<br>If the Effective Coverage Level Percent is greater than the maximum ADM Coverage Level then this will be the highest ADM Coverage Level. |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans   0075 Peanuts<br>0051 Grain Sorghum   0078 Sunflowers<br>0067 Dry Peas   0081 Soybeans<br>   0091 Barley |

| Calculations | | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|---|
| | | Prior Year Enterprise Unit Residual Factor | Internal | | 999.999 | Round to 3 decimal places. | The cap value for the Residual Factors is the MAX(Residual Factor) from all coverage levels within the chosen unit structure |
| | | Base Enterprise Prior Year Unit Residual Factor | ADM | | 999.999 | None | Base Enterprise Prior Year Unit Residual Factor is equal to Enterprise Prior Year Unit Residual for Minimum of 1) Maximum available Coverage Level or; 2) available Coverage Level less than or equal to Effective Coverage Level. Edit with ADM Coverage Level Differential, "A01040". |
| | | Upper Bound Prior Year Enterprise Unit Residual Factor | ADM | | 999.999 | None | Based on the 'upper bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on the higher ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the highest ADM Coverage Level. |
| Prior Year Enterprise Unit Residual Factor | = Round(Base Enterprise Prior Year Unit Residual Factor + (Upper Bound Prior Year Enterprise Unit Residual Factor - Lower Bound Prior Year Enterprise Unit Residual Factor) * (Effective Coverage Level Percent - Floored Effective Coverage Level Percent) * 20, 3) | Lower Bound Prior Year Enterprise Unit Residual Factor | ADM | | 999.999 | None | Based on the 'lower bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on lower ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the second highest ADM Coverage Level. |
| | | Effective Coverage Level Percent | Internal | | 9.99 | None | |
| | | Floored Effective Coverage Level Percent | Internal | | 9.99 | None | Based on the 'floored' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be the lower ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be the highest ADM Coverage Level. |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Exhibit Name:** Premium Calculation | | | | | | |
| **Exhibit Number:** P11-1, Plan 01, 02, 03 | | | | **Reinsurance Year:** 2015 | | |
| **Record Name:** Acreage | | | | **Version:** Comment | | |
| **Record Code:** P11 | | | | **Release Date:** 2/5/2015 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Insurance Plan Code** | 01 Yield Protection | | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion | |
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley | |

| Calculations | | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|---|
| **When Unit Structure Code is equal to Whole Farm Unit, 'WU', use the following calculations for Whole Farm Unit Residual Factor and Prior Year Whole Farm Unit Residual Factor:** | | | | | | | |
| Whole Farm Unit Residual Factor | Round(Base Whole Farm Unit Residual Factor + (Upper Bound Whole Farm Unit Residual Factor - Lower Bound Whole Farm Unit Residual Factor) * (Effective Coverage Level Percent - Floored Effective Coverage Level Percent) * 20, 3) | Whole Farm Unit Residual Factor | Internal | | 999.999 | Round to 3 decimal places. | The cap value for the Residual Factors is the MAX(Residual Factor) from all coverage levels within the chosen unit structure |
| | | Base Whole Farm Unit Residual Factor | ADM | | 999.999 | None | Base Whole Farm Unit Residual Factor is equal to Whole Farm Unit Residual for Minimum of 1) Maximum available Coverage Level or; 2) available Coverage Level less than or equal to Effective Coverage Level. Edit with ADM Coverage Level Differential, "A01040". |
| | | Upper Bound Whole Farm Unit Residual Factor | ADM | | 999.999 | None | Based on the 'upper bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level Percent equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level Percent.<br>If the Effective Coverage Level Percent falls between existing ADM Coverage Levels then this will be based on the higher ADM Coverage Level.<br>If the Effective Coverage Level Percent is greater than the maximum ADM Coverage Level then this will be based on the highest ADM Coverage Level. |
| | | Lower Bound Whole Farm Unit Residual Factor | ADM | | 999.999 | None | Based on the 'lower bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on the lower ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the second highest ADM Coverage Level. |
| | | Effective Coverage Level Percent | Internal | | 9.99 | None | |
| | | Floored Effective Coverage Level Percent | Internal | | 9.99 | None | Based on the 'floored' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level Percent equals an existing ADM Coverage Level then this will be the Effective Coverage Level Percent.<br>If the Effective Coverage Level Percent falls between existing ADM Coverage Levels then this will be the lower ADM Coverage Level.<br>If the Effective Coverage Level Percent is greater than the maximum ADM Coverage Level then this will be the highest ADM Coverage Level. |
| | | Prior Year Whole Farm Unit Residual Factor | Internal | | 999.999 | Round to 3 decimal places. | The cap value for the Residual Factors is the MAX(Residual Factor) from all coverage levels within the chosen unit structure |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| **Calculations** | **Field Name** | **Record Number** | **Field Number** | **Field Format** | **Field Rounding** | **Rules** |
|---|---|---|---|---|---|---|
| | Base Whole Farm Base Prior Year Unit Residual Factor | ADM | | 999.999 | None | Base Whole Farm Base Prior Year Unit Residual Factor is equal to Whole Farm Base Prior Year Unit Residual for Minimum of 1) Maximum available Coverage Level or; 2) available Coverage Level less than or equal to Effective Coverage Level. Edit with ADM Coverage Level Differential, "A01040". |
| | Upper Bound Prior Year Whole Farm Unit Residual Factor | ADM | | 999.999 | None | Based on the 'upper bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040". If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level. If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on the higher ADM Coverage Level. If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the highest ADM Coverage Level. |
| Prior Year Whole Farm Unit Residual Factor = Round(Base Whole Farm Prior Year Unit Residual Factor + (Upper Bound Prior Year Whole Farm Unit Residual Factor - Lower Bound Prior Year Whole Farm Unit Residual Factor) * (Effective Coverage Level Percent - Floored Effective Coverage Level Percent) * 20, 3) | Lower Bound Prior Year Whole Farm Unit Residual Factor | ADM | | 999.999 | None | Based on the 'lower bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040". If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level. If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on lower ADM Coverage Level. If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the second highest ADM Coverage Level. |
| | Effective Coverage Level Percent | Internal | | 9.99 | None | |
| | Floored Effective Coverage Level Percent | Internal | | 9.99 | None | Based on the 'floored' Coverage Level. Edit with ADM Coverage Level Differential, "A01040". If the Effective Coverage Level equals an existing ADM Coverage Level then this will be the Effective Coverage Level. If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be the lower ADM Coverage Level. If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be the highest ADM Coverage Level. |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Exhibit Name:** Premium Calculation | | | | | | |
| **Exhibit Number:** P11-1, Plan 01, 02, 03 | | | | **Reinsurance Year:** 2015 | | |
| **Record Name:** Acreage | | | | **Version:** Comment | | |
| **Record Code:** P11 | | | | **Release Date:** 2/5/2015 | | |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| **Section 19: Unit Discount Calculation** | | | | | | The lookup/interpoloation/extrapolation procedure for 'Optional Unit Discount Factor, Basic Unit Discount Factor, and Enterprise Unit Discount Factor' when Trend Adjustment Option (TA) or Yield Exclusion Option (YE) was chosen and yield reflects a trend. |
| **When Unit Structure Code is equal to Optional Unit, "OU", "UA", or "UD", use the following calculation for Unit Structure Discount Factor:** | | | | | | |
| | Unit Structure Discount Factor | Internal | | 9.999999999 | Round to 4 8 decimal places. | Capped at 1.0 |
| | Base Coverage Level Percent Optional Unit Discount Factor | ADM | | 9.999999999 | None | Base Coverage Level Percent Optional Unit Discount Factor is equal to Percent Optional Discount for Minimum of 1) Maximum available Coverage Level or; 2) available Coverage Level less than or equal to Effective Coverage Level. Edit with ADM Coverage Level Differential, "A01040". |
| | Upper Bound Coverage Level Percent Optional Unit Discount Factor | ADM | | 9.999999999 | None | Based on the 'upper bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040". If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level. If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on the higher ADM Coverage Level. If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the highest ADM Coverage Level. |
| Unit Structure Discount Factor = Round(Base Coverage Level Percent Optional Unit Discount Factor + (Upper Bound Coverage Level Percent Optional Unit Discount Factor - Lower Bound Coverage Level Percent Optional Unit Discount Factor) * (Effective Coverage Level Percent - Floored Effective Coverage Level Percent) * 20, 4) | Lower Bound Coverage Level Percent Optional Unit Discount Factor | ADM | | | None | Based on the 'lower bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040". If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level. If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on the lower ADM Coverage Level. If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the second highest ADM Coverage Level. |
| | Effective Coverage Level Percent | Internal | | 9.99 | None | |

| | | | |
|---|---|---|---|
| **Exhibit Name:** Premium Calculation | | **Reinsurance Year:** 2015 | |
| **Exhibit Number:** P11-1, Plan 01, 02, 03 | | **Version:** Comment | |
| **Record Name:** Acreage | | **Release Date:** 2/5/2015 | |
| **Record Code:** P11 | | | |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans 0075 Peanuts<br>0051 Grain Sorghum 0078 Sunflowers<br>0067 Dry Peas 0081 Soybeans<br>0091 Barley |

| Calculations | Field<br>Name | Record<br>Number | Field<br>Number | Field<br>Format | Field<br>Rounding | Rules |
|---|---|---|---|---|---|---|
| | Floored Effective Coverage Level Percent | Internal | | 9.99 | None | Based on the 'floored' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be the lower ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be the highest ADM Coverage Level. |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| **When Unit Structure Code is equal to Basic Unit, 'BU', use the following calculation for Unit Structure Discount Factor:** | | | | | | |
| | Unit Structure Discount Factor | Internal | | 9.999999999 | Round to 4 decimal places. | Capped at 1.0 |
| | Base Coverage Level Percent Basic Unit Discount Factor | ADM | | 9.999999999 | None | Base Coverage Level Percent Basic Unit Discount Factor is equal to Basic Unit Discount Factor for Minimum of 1) Maximum available Coverage Level or; 2) available Coverage Level less than or equal to Effective Coverage Level. Edit with ADM Coverage Level Differential, "A01040". |
| | Upper Bound Coverage Level Percent Basic Unit Discount Factor | ADM | | 9.999999999 | None | Based on the 'upper bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on the higher ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the highest ADM Coverage Level. |
| Unit Structure Discount Factor = Round(Base Coverage Level Percent Basic Unit Discount Factor + (Upper Bound Coverage Level Percent Basic Unit Discount Factor - Lower Bound Coverage Level Percent Basic Unit Discount Factor) * (Effective Coverage Level Percent - Floored Effective Coverage Level Percent) * 20, 4) | Lower Bound Coverage Level Percent Basic Unit Discount Factor | ADM | | | None | Based on the 'lower bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on the lower ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the second highest ADM Coverage Level. |
| | Effective Coverage Level Percent | Internal | | 9.99 | None | |
| | Floored Effective Coverage Level Percent | Internal | | 9.99 | None | Based on the 'floored' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be the lower ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be the highest ADM Coverage Level. |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion | |
|---|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley | |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| **When Unit Structure Code is equal to Enterprise Unit, 'EU' or 'EP', use the following calculation for Unit Structure Discount Factor:** | | | | | | |
| | Unit Structure Discount Factor | Internal | | 9.999999999 | Round to 4 decimal places. | Capped at 1.0 |
| | Base Coverage Level Percent Enterprise Unit Discount Factor | ADM | | 9.999999999 | None | Base Coverage Level Percent Enterprise Unit Discount Factor is equal to Enterprise Unit Discount Factor for Minimum of 1) Maximum available Coverage Level or; 2) available Coverage Level less than or equal to Effective Coverage Level.  Edit with ADM Coverage Level Differential, "A01040". |
| | Upper Bound Coverage Level Percent Enterprise Unit Discount Factor | ADM | | 9.999999999 | None | Based on the 'upper bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on the higher ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the highest ADM Coverage Level. |
| Unit Structure Discount Factor = Round(Base Coverage Level Percent Enterprise Unit Discount Factor + (Upper Bound Coverage Level Percent Enterprise Unit Discount Factor - Lower Bound Coverage Level Percent Enterprise Unit Discount Factor) * (Effective Coverage Level Percent - Floored Effective  Coverage Level Percent) * 20, 4) | Lower Bound Coverage Level Percent Enterprise Unit Discount Factor | ADM | | | None | Based on the 'lower bound' Coverage Level. Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be based on the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be based on the lower ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be based on the second highest ADM Coverage Level. |

| | |
|---|---|
| **Exhibit Name:** | Premium Calculation |
| **Exhibit Number:** | P11-1, Plan 01, 02, 03 |
| **Record Name:** | Acreage |
| **Record Code:** | P11 |

| | |
|---|---|
| **Reinsurance Year:** | 2015 |
| **Version:** | Comment |
| **Release Date:** | 2/5/2015 |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| Calculations | Field<br>Name | Record<br>Number | Field<br>Number | Field<br>Format | Field<br>Rounding | Rules |
|---|---|---|---|---|---|---|
| | Effective Coverage Level Percent | Internal | | 9.99 | None | |
| | Floored Effective Coverage Level Percent | Internal | | 9.99 | None | Based on the 'floored' Coverage Level.  Edit with ADM Coverage Level Differential, "A01040".<br>If the Effective Coverage Level equals an existing ADM Coverage Level then this will be the Effective Coverage Level.<br>If the Effective Coverage Level falls between existing ADM Coverage Levels then this will be the lower ADM Coverage Level.<br>If the Effective Coverage Level is greater than the maximum ADM Coverage Level then this will be the highest ADM Coverage Level. |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion | |
|---|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley | |

| Calculations | | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|---|
| **Written Agreement Rate Information** | | | | | | | |
| **Section 20: Written Agreement Rate Calculation** | | | | | | | The following information will be used only when an applicable county program does not exist in the county and written agreement (WA) specifies a Multiplicative Rate, Add-on Rate, or Designated Rate. This would include situations where a written agreement (WA) for a type or practice not contained in the Actuarial materials. |
| **When WA specifies a Multiplicative Rate:** | | | | | | | |
| Reference Rate | = (Round(Reference Rate + Fixed Rate) * Written Agreement Multiplicative Rate Adjustment,3) - Fixed Rate | Reference Rate | Internal | | 9.9999 | None | |
| | | Reference Rate | ADM | | 9.9999 | None | Edit with ADM Base Rate, "A01010". |
| | | Fixed Rate | ADM | | 9.9999 | None | Edit with ADM Base Rate, "A01010". |
| | | Written Agreement Multiplicative Rate Adjustment | WA | | 9.9999 | None | |
| Prior Year Reference Rate | = (Round(Reference Rate + Fixed Rate) * Written Agreement Multiplicative Rate Adjustment,3) - Fixed Rate | Prior Year Reference Rate | Internal | | 9.9999 | None | |
| | | Reference Rate | ADM | | 9.9999 | None | Edit with ADM Base Rate, "A01010". |
| | | Fixed Rate | ADM | | 9.9999 | None | Edit with ADM Base Rate, "A01010". |
| | | Written Agreement Multiplicative Rate Adjustment | WA | | 9.9999 | None | |
| **When WA specifies a Add-on Rate:** | | | | | | | |
| Fixed Rate | = Fixed Rate + Written Agreement Add-on Rate | Fixed Rate | Internal | | 9.9999 | None | |
| | | Fixed Rate | ADM | | 9.9999 | None | Edit with ADM Base Rate, "A01010". |
| | | Written Agreement Add-on Rate | WA | | 9.9999 | None | |
| Prior Year Fixed Rate | = Fixed Rate + Written Agreement Add-on Rate | Prior Year Fixed Rate | Internal | | 9.9999 | None | |
| | | Fixed Rate | ADM | | 9.9999 | None | Edit with ADM Base Rate, "A01010". |
| | | Written Agreement Add-on Rate | WA | | 9.9999 | None | |

| | | | | |
|---|---|---|---|
| **Exhibit Name:** | Premium Calculation | | |
| **Exhibit Number:** | P11-1, Plan 01, 02, 03 | **Reinsurance Year:** | 2015 |
| **Record Name:** | Acreage | **Version:** | Comment |
| **Record Code:** | P11 | **Release Date:** | 2/5/2015 |

| Insurance Plan Code | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans  0075 Peanuts<br>0051 Grain Sorghum  0078 Sunflowers<br>0067 Dry Peas  0081 Soybeans<br>0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| **When WA specifies a Designated Rate:** | | | | | | |
| Reference Rate = zero (0) | Reference Rate | Internal | | 9.9999 | None | |
| Fixed Rate = Designated Rate | Fixed Rate | Internal | | 9.9999 | None | |
| | Designated Rate | WA | | 9.9999 | None | |
| Prior Year Reference Rate = zero (0) | Prior Year Reference Rate | Internal | | 9.9999 | None | |
| Prior Year Fixed Rate = Designated Rate | Prior Year Fixed Rate | Internal | | 9.9999 | None | |
| | Written Agreement Designated Rate | WA | | 9.9999 | None | |
| **Section 21: Written Agreement Sub County Rate Calculation** | | | | | | The following information will be used when written agreement (WA) modifies a Sub County Rate (High Risk or Map Rate). |
| Sub County Rate = Written Agreement Sub County Rate | Written Agreement Sub County Rate | WA | | 9.9999 | None | Replace Sub County Rate if Written Agreement Sub County Rate is lower.  Set Sub County Rate to zero if Written Agreement removes Sub County Rate. |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion | |
|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans<br>0051 Grain Sorghum<br>0067 Dry Peas | 0075 Peanuts<br>0078 Sunflowers<br>0081 Soybeans<br>0091 Barley |

| **Calculations** | **Field Name** | **Record Number** | **Field Number** | **Field Format** | **Field Rounding** | **Rules** |
|---|---|---|---|---|---|---|
| **Downed Rice Endorsement (DRE) Option 'DC'** | | | | | | CAT does not apply to Downed Rice (DRE). Only Unit Structure Codes 'BU and OU' apply regardless of the base Rice selection. Price Election Percent for base Rice will apply to DRE. Subsidy Level will be 38% for DRE regardless of the base Rice Unit Structure or Coverage Level. Insured Share can be different for DRE than base Rice. Insured Share will be 100%. DRE coverage is not available for high-risk CAT acreage if excluded from additional coverage for Base Rice. |
| **Section 22: Liability Calculation** | | | | | | |
| Premium Liability Amount = Dollar Amount of Insurance * Reported Acreage * Insured Share Percent * Price Election Percent | Premium Liability Amount | Internal | | 9999999999 | Round to whole number. | |
| | Dollar Amount of Insurance | ADM | | 99999 | None | Edit with ADM Price, "A00810", Fixed Coverage Amount with insurance option = 'DC'. |
| | Reported Acreage | P11 | 49 | 99999999.99 | None | |
| | Insured Share Percent | P11 | 44 | 9.9999 | None | DRE insured share will always be 100% without regards to base Rice. |
| | Price Election Percent | ICE | | 9.9999 | None | From base Rice P14 record. |
| Liability Amount = Dollar Amount of Insurance * Reported Acreage * Insured Share Percent * Price Election Percent | Liability Amount | P11 | 91 | 9999999999 | Round to whole number. | |
| | Dollar Amount of Insurance | ADM | | 99999 | None | Edit with ADM Price, "A00810", Fixed Coverage Amount with insurance option = 'DC'. |
| | Reported Acreage | P11 | 49 | 999999.99 | None | |
| | Insured Share Percent | P11 | 44 | 9.9999 | None | DRE insured share will always be 100% without regards to base Rice. |
| | Price Election Percent | ICE | | 9.9999 | None | From base Rice P14 record. |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | | 03 Revenue Protection with Harvest Price Exclusion | |
|---|---|---|---|---|---|
| **Commodity Code** | 0011 Wheat  0015 Canola  0018 Rice | 0021 Cotton  0041 Corn  0043 Popcorn | 0047 Dry Beans  0051 Grain Sorghum  0067 Dry Peas | 0075 Peanuts  0078 Sunflowers  0081 Soybeans  0091 Barley | |

| Calculations | | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|---|
| **Section 23: Total Premium Amount, Subsidy Amount, and Producer Premium Amount** | | | | | | | |
| Preliminary Total Premium | = Premium Liability Amount * Premium Rate | Preliminary Total Premium | Internal | | 9999999999 | Round to whole number. | |
| | | Premium Rate | ADM | | | None | Edit with ADM Option Rate, "A01060", rate with insurance option = 'DC'. |
| Total Premium Amount | = Preliminary Total Premium | Total Premium Amount | P11 | 92 | 9999999999 | Round to whole number. | |
| Subsidy Amount | = Total Premium Amount * Subsidy Percent | Subsidy Amount | P11 | 90 | 9999999999 | Round to whole number. | If this record qualifies for Beginning Farmer and Rancher or Native Sod, see Section 24 for subsidy calculations. |
| | | Subsidy Percent | ADM | | 9.999 | None | Edit with ADM Subsidy Percent, "A00070". Will always be 38% for DRE. |
| Producer Premium Amount | = Total Premium Amount - Subsidy Amount | Producer Premium Amount | P11 | 93 | 9999999999 | Round to whole number. | |
| **Section 24: Beginning Farmer and Rancher (BFR) and Native Sod (NS) Subsidy Calculations** | | | | | | | |
| Base Subsidy Amount | = Total Premium Amount * Subsidy Percent | Base Subsidy Amount | Internal | | 9999999999 | Round to whole number | Cupped by the standard rule of $1 if applicable. |
| | | Subsidy Percent | ADM | | 9.999 | None | Edit with ADM Subsidy Percent, "A00070". |
| BFR Subsidy Amount | = Total Premium Amount * 0.10 | BFR Subsidy Amount | Internal | | 9999999999 | Round to whole number | Beginning Farmer Rancher Subsidy Amount. If Applicable; else 0. 0.10 (10%). |
| Native Sod Subsidy Amount | = Total Premium Amount * 0.50 | Native Sod Subsidy Amount | Internal | | 9999999999 | Round to whole number | If Applicable; else 0. 0.50 (50%). For CAT coverage, Native Sod Subsidy Amount is always 0. |
| Subsidy Amount | = Base Subsidy Amount + BFR Subsidy Amount - Native Sod Subsidy Amount | Subsidy Amount | P11 | 90 | 9999999999 | Round to whole number | Subsidy Amount cannot exceed Total Premium Amount. Subsidy Amount will be cupped at $0. |
| Producer Premium Amount | = Total Premium Amount - Subsidy Amount | Producer Premium Amount | P11 | 93 | 9999999999 | Round to whole number | |

| | | |
|---|---|---|
| **Exhibit Name:** Premium Calculation | | |
| **Exhibit Number:** P11-1, Plan 01, 02, 03 | **Reinsurance Year:** 2015 | |
| **Record Name:** Acreage | **Version:** Comment | |
| **Record Code:** P11 | **Release Date:** 2/5/2015 | |

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans   0075 Peanuts<br>0051 Grain Sorghum   0078 Sunflowers<br>0067 Dry Peas   0081 Soybeans<br>0091 Barley |

| Calculations | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|
| **Section 25: Yield Exclusion Current Year Base Premium Rate Calculations (only use when the Effective Coverage Level for the record exceeds the highest coverage level for the offer in the ADM)** | | | | | | |
| Unadjusted Liability Amount = (Coverage Level Percent/Effective Coverage Level Percent) * Premium Liability Amount | Unadjusted Liability Amount | Internal | | 9999999999 | Round to whole number | |
| | Coverage Level Percent | P14 | 34 | 9.9999 | None | |
| | Effective Coverage Level Percent | Internal | | 9.9999 | | |
| | Premium Liability Amount | Internal | | 9999999999 | Round to whole number | |
| | Max Coverage Level Adjustment Factor | Internal | | 999999999.99999999 | Round to 8 decimals. | |
| | Unadjusted Liability Amount | Internal | | 9999999999 | Round to whole number | |
| **When Unit Structure Code is equal to Optional Unit, "OU", "UA" &"UD::**<br><br>ROUND(1.00/ Current Year Base Rate,8) – ROUND(Unadjusted Liability Amount/(Current Year Base Rate * Premium Liability Amount),8) + ROUND(ROUND(Base Rate Differential Factor * Base Unit Residual Factor * Base Optional Unit Structure Discount Factor * Unadjusted Liability Amount,8)/Premium Liability Amount,8) | Current Year Base Rate | Internal | | 10000000000 | Round to 8 decimals. | |
| | Premium Liability Amount | Internal | | 9999999999 | Round to whole number | |
| | Base Rate Differential Factor | ADM | | 9.999999999 | None | |
| | Base Unit Residual Factor | ADM | | 999.999 | None | |
| | Base Optional Unit Structure Discount Factor | ADM | | 9.999999999 | None | Base Optional Unit Structure Discount Factor is equal to Optional Unit Discount Factor for Minimum of 1) Maximum available Coverage Level or; 2) available Coverage Level less than or equal to Effective Coverage Level.  Edit with ADM Coverage Level Differential, "A01040".  See Section 19 for more info. |
| **When Unit Structure code is Basic Unit, "BU":**<br><br>ROUND(1.00/ Current Year Base Rate,8) – ROUND(Unadjusted Liability Amount/(Current Year Base Rate * Premium Liability Amount),8) + ROUND(ROUND(Base Rate Differential Factor * Base Unit Residual Factor * Base Basic Unit Structure Discount Factor * Unadjusted Liability Amount,8)/Premium Liability Amount,8) | Base Basic Unit Structure Discount Factor | ADM | | 9.999999999 | None | Base Basic Unit Structure Discount Factor is equal to Basic Unit Discount Factor for Minimum of 1) Maximum available Coverage Level or; 2) available Coverage Level less than or equal to Effective Coverage Level.  Edit with ADM Coverage Level Differential, "A01040".  See Section 19 for more info.<br>When the total planted acres for the unit is 0 (all acres are prevented planted) set to 1.00. |
| **When Unit Structure code is Enterprise Unit, "EU" & "EP":**<br><br>ROUND(1.00/ Current Year Base Rate,8) – ROUND(Unadjusted Liability Amount/( Current Year Base Rate * Premium Liability Amount),8) + ROUND(ROUND(Base Rate Differential Factor * Base Enterprise Unit Residual Factor * Base Enterprise Unit Structure Discount Factor * Unadjusted Liability Amount,8)/Premium Liability Amount,8) | Base Enterprise Unit Structure Discount Factor | ADM | | 9.999999999 | None | Base Enterprise Unit Structure Discount Factor is equal to Enterprise Unit Discount Factor for Minimum of 1) Maximum available Coverage Level or; 2) available Coverage Level less than or equal to Effective Coverage Level.  Edit with ADM Coverage Level Differential, "A01040".  See Section 19 for more info.<br>When the total planted acres for the unit is 0 (all acres are prevented planted) set to 1.00. |
| | Base Enterprise Unit Residual Factor | ADM | | 999.999 | None | Base Enterprise Unit Residual Factor is equal to Enterprise Unit Residual for Minimum of 1) Maximum available Coverage Level or; 2) available Coverage Level less than or equal to Effective Coverage Level.  Edit with ADM Coverage Level Differential, "A01040". |
| **When Unit Structure code is Whole Farm Unit "WU":**<br><br>ROUND(1.00/ Current Year Base Rate,8) – ROUND(Unadjusted Liability Amount/( Current Year Base Rate * Premium Liability Amount),8) + ROUND(ROUND(Base Rate Differential Factor * Base Whole Farm Unit Residual Factor * Unit Structure Discount Factor * Unadjusted Liability Amount,8)/Premium Liability Amount,8) | Unit Structure Discount Factor | Internal | | 9.99999999 | None | Capped at 1.0<br>See Section 19 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| | Base Whole Farm Unit Residual Factor | ADM | | 999.999 | None | Base Whole Farm Unit Residual Factor is equal to Whole Farm Unit Residual for Minimum of 1) Maximum available Coverage Level or; 2) available Coverage Level less than or equal to Effective Coverage Level.  Edit with ADM Coverage Level Differential, "A01040". |

Max Coverage Level Adjustment Factor =

| **Insurance Plan Code** | 01 Yield Protection | 02 Revenue Protection | 03 Revenue Protection with Harvest Price Exclusion |
|---|---|---|---|
| **Commodity Code** | 0011 Wheat<br>0015 Canola<br>0018 Rice | 0021 Cotton<br>0041 Corn<br>0043 Popcorn | 0047 Dry Beans  0075 Peanuts<br>0051 Grain Sorghum  0078 Sunflowers<br>0067 Dry Peas  0081 Soybeans<br>0091 Barley |

| Calculations | | Field Name | Record Number | Field Number | Field Format | Field Rounding | Rules |
|---|---|---|---|---|---|---|---|
| **Yield Exclusion Proration Marginal Rate Adjustment Factor** = | | Marginal rate Adjustment Yield Exclusion Proration Marginal Adjustment Rate Factor | Internal | | 9.99999999 | Round to 8 decimals. | |
| | | Max Coverage Level Adjustment Factor | Internal | | 999999999.99999999 | Round to 8 decimals. | |
| | Max Coverage Level Adjustment Factor /(Rate Differential Factor * Unit Residual Factor * Unit Structure Discount Factor) | Rate Differential Factor | ADM | | 9.999999999 | None | Edit with ADM Coverage Level Differential, "A01040".<br>See Section 17 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| | | Unit Residual Factor | ADM | | 999.999 | None | Edit with ADM Coverage Level Differential, "A01040".<br>See Section 18 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| | | Unit Structure Discount Factor | Internal | | 9.99999999 | None | Capped at 1.0<br>See Section 19 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| | When Unit Structure code is Enterprise Unit, "EU" & "EP":<br><br>Max Coverage Level Adjustment Factor /(Rate Differential Factor * Enterprise Unit Residual Factor * Unit Structure Discount Factor) | Enterprise Unit Residual Factor | ADM | | 9.999 | None | Edit with ADM Coverage Level Differential, "A01040".<br>See Section 18 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) where Unit Structure Code equal to Enterprise Unit, 'EU'. |
| | When Unit Structure code is Whole Farm Unit, "WU":<br><br>Max Coverage Level Adjustment Factor /(Rate Differential Factor * Whole Farm Unit Residual Factor * Unit Structure Discount Factor) | Whole Farm Unit Residual Factor | ADM | | 9.999 | None | Edit with ADM Coverage Level Differential, "A01040".<br>See Section 18 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) where Unit Structure Code equal to Whole Farm Unit, 'WU'. |
| **Current Year Base Premium Rate** = | | Current Year Base Premium Rate | Internal | | 9999999999.99999999 | Round to 8 decimals. | |
| | When Unit Structure Code is equal to Optional Unit, "OU", "UA", "UD", or Basic Unit, "BU":<br><br>Round(Current Year Base Rate * Rate Differential Factor * Unit Residual Factor, 8) * MIN(Yield Exclusion Proration Marginal Rate Adjustment Factor, 1.00 0.99) | Rate Differential Factor | ADM | | 9.999999999 | None | Edit with ADM Coverage Level Differential, "A01040".<br>See Section 17 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion). |
| | | Unit Residual Factor | ADM | | 999.999 | None | Edit with ADM Coverage Level Differential, "A01040".<br>See Section 18 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) where Unit Structure Code equal to Optional Unit, "OU", "UA", "UD", or Basic Unit, 'BU'. |
| | | Yield Exclusion Proration Marginal Rate Adjustment Factor | Internal | | 9999999999.99999999 | Round to 8 decimals. | |
| | When Unit Structure code is Enterprise Unit, "EU" & "EP":<br><br>Round(Current Year Base Rate * Rate Differential Factor * Enterprise Unit Residual Factor, 8) * MIN(Yield Exclusion Proration Marginal Rate Adjustment Factor, 1.00 0.99) | Enterprise Unit Residual Factor | ADM | | 9.999 | None | Edit with ADM Coverage Level Differential, "A01040".<br>See Section 18 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) where Unit Structure Code equal to Enterprise Unit, 'EU'. |
| | When Unit Structure code is Whole Farm Unit, "WU":<br><br>Round(Current Year Base Rate * Rate Differential Factor * Whole Farm Unit Residual Factor, 8) * MIN(Yield Exclusion Proration Marginal Rate Adjustment Factor, 1.00 0.99) | Whole Farm Unit Residual Factor | ADM | | 9.999 | None | Edit with ADM Coverage Level Differential, "A01040".<br>See Section 18 for Option Code "TA" (Trend Adjustment) and "YE" (Yield Exclusion) where Unit Structure Code equal to Whole Farm Unit, 'WU'. |

Yield Exclusion – Update:

- This release patches the known issue in the rollout of the Yield Exclusion calculation/validation on the P15. Following the release, AIP's should correctly calculate Approved Yields based on CIH instructions when the number of excluded yields brings the APH database below the required 4 years of history. Additionally, the same protections afforded Yield Trend are also in affect for Yield Exclusion as it relates to the Adjusted Yield. If Yield Exclusion results in an Approved Yield that is LESS THAN the Adjusted Yield, the AIP's should set the Approved Yield EQUAL to the Adjusted Yield on their submission. This implementation completes all known issues concerning Yield Exclusion in PASS.

D00054:
- CR 36379 - Modified 2015 Commodity Code 0075 rows from Insurance Plan Code 90 to Insurance Plan Code 01, 02, 03.

D00066:
- CR 36379 - Modified 2015 Commodity Code 0075 rows from Insurance Plan Code 90 to Insurance Plan Code 01, 02, 03.

D00068:
- CR 36379 - Modified 2015 Commodity Code 0075 rows from Insurance Plan Code 90 to Insurance Plan Code 01, 02, 03.

D00077:
- CR 36379 - Modified 2015 Commodity Code 0075 rows from Insurance Plan Code 90 to null.

D00080:
- CR 36379 - Modified 2015 Commodity Code 0075 rows from Insurance Plan Code 90 to Insurance Plan Code 01, 02, 03.

D00101:
- CR 40345 - Added PIC 415 for PL for 2015.

D00129:
- CR 36379 - Modified 2015 Commodity Code 0075 Maximum Replant Guarantee Per Acre Amount to 95.

P11:

- CR 36379 - Implemented Peanut Revenue program on the 2015 P11 record type.  The following P11 rules were modified as part of this CR:  5244, 5276, 5278, 5283, 5284, 5289, 5396, 5691, 6623, 6911, 7011, 7026, 7267, 7269, 8137, 8485, 8489, 8491, 8492, 8493, 8498, 8499, 8500, 8517, 8518, 8519, 8520, 8521, 8522, 8523, 8540, 8541, 9092, 9093, 9094, 9098, 9099, 9100, 9918, 9919, 10771, 10772, 10773, 10810, 10811, 10836, 10860, 12057, 12064, 12129, 12130, 12132, 12133, 16270, 16271, 16272, 16276, 16277, 16278, 16279, 19605, 26218, 38714, 45444, 45445, 52110, 76726, 77772, 77773, 77777, 77778, and 77781.  Please refer to the Appendix III and Peanut Revenue White Paper for details of the Peanut Revenue program.

P11A:
- CR 36379 - Implemented Peanut Revenue program on the 2015 P11A record type.  Four new fields were added to the P11A.  Those fields are as follows:  Contract Liability Record Flag, Reported Pounds, Contract Price, and Projected Price.  The following P11A rules were modified as part of this CR:  52448, 76711, 76712, 76713, 76714, 76715, 76716, 76717, 76718, 76719, 76720, 76721, 76722, 76723, and 76724.  Please refer to the Appendix III and Peanut Revenue White Paper for details of the Peanut Revenue program.

P21:
- CR 36379 - Implemented Peanut Revenue program on the 2015 P21 record type.  The following P21 rules were modified as part of this CR:  7507, 7605, 7672, 7673, 7684, 7685, 7686, 7736, 7740, 9577, 9654, 9911, 10137, 19288, 20950, 20951, 27224, 27225, 45465, 45466, 52272, and 52275.  Please refer to the Appendix III and Peanut Revenue White Paper for details of the Peanut Revenue program.

E11:
- CR 40294 - This CR implements five new requirements for Yield Exclusion functionality in the Corporate Calculation Web Service. First, the new Unadjusted Liability Amount, Maximum Coverage level Adjustment Factor, and Marginal Rate Adjustment Factor calculations will only apply when Effective Coverage Level Percent is greater than the Maximum Coverage Level Percent. Second, when Total Planted Acreage is zero (all acres are Prevented Planted) then use a value of 1.000 for Base Basic Unit Structure Discount Factor and Base Enterprise Unit Structure Discount Factor. Third, do not use Coverage Type Code to look up Maximum Coverage Level Percent. When looking up Base, Lower Bound,

and Upper Bound Unit Structure Discount Factor and Unit Residual Factor, if a record doesn't exist for the given Coverage Type Code (i.e. C for CAT) then look for the A for Buy-Up record. Fourth, change all references from Yield Exclusion Proration Factor to Marginal Rate Adjustment Factor. Fifth, in the Current Year Base Premium Rate calculation, change the minimum of the Marginal Rate Adjustment Factor and 0.99 to 1.00.

P11:

- CR 40294 - This CR implements five new requirements for Yield Exclusion functionality in PASS. First, the new Unadjusted Liability Amount, Maximum Coverage level Adjustment Factor, and Marginal Rate Adjustment Factor calculations will only apply when Effective Coverage Level Percent is greater than Maximum Coverage Level Percent. Second, when Total Planted Acreage is zero (all acres are Prevented Planted) then use a value of 1.000 for Base Basic Unit Structure Discount Factor and Base Enterprise Unit Structure Discount Factor. Third, do not use Coverage Type Code to look up Maximum Coverage Level Percent. When looking up Base, Lower Bound, and Upper Bound Unit Structure Discount Factor and Unit Residual Factor, if a record doesn't exist for the given Coverage Type Code (i.e. C for CAT) then look for the A for Buy-Up record. Fourth, change all references from Yield Exclusion Proration Factor to Marginal Rate Adjustment Factor. Fifth, in the Current Year Base Premium Rate calculation, change the minimum of the Marginal Rate Adjustment Factor and 0.99 to 1.00.

P10:

- CR 40345 - Added PIC 415 for PL for 2015 to the IcePic D00101 and IceAipState D10001 tables.

P14:

- CR 36474 – Modified an internal rule to set an internal flag to correct the 3586 error on P09 record where the WA Number is being added after the fund designation cutoff date. Changes will apply for all years 2011 forward to allow the WA Number to be added after the Fund Designation Cutoff date providing there is no change to the Fund Designation Flag.

P14:

- CR 37395 – Added new rule 73458 for 2015 SCO and STAX plans. For SCO/STAX, the policy must be buy up coverage (Coverage Type Code = 'A') even though the base policy is

CAT coverage. For SCO plans 31, 32, 33 and STAX plans 35, 36 rule 73458 will trip if the Coverage Type Code is not equal to 'A'.

P14:
- CR 37395 - Updated rule 5706 to address an issue where the SCO or STAX policy is getting this error because the base policy has CAT coverage but the SCO or STAX policy must be buy up coverage.

P14:
- CR 37395 - Modified rule 9892 for RY-2015 forward so that it is not running for multiple P14 records for Dry Bean (0047) and Dry Peas (0067) by types with the LP option by irrigation/non-irrigation practices. For multiple P14 records for Dry Bean (0047) and Dry Peas (0067) by types with the LP option by irrigation/non-irrigation practices rule 72741 will apply instead. There must two P14 records by type for Irrigated/Non-Irrigated Practices sent by the Sales Closing Date and the coverage levels must be different by irrigation practice.

P14:
- CR 37395 - Added new rule 74632 for 2015 SCO and STAX plans to reject the SCO/STAX policy if the associated base policy has been rejected. For SCO and/or STAX policy where the base policy existed, the base policy must be in 'accepted' status; otherwise, reject the SCO/STAX.

P14:
- CR 37395 – Rule 72734 was implemented RY-2015 forward for Commodity not by type or variety where the Commodity Code is not one of the following values: ('0052', '0053', '0034', '0054', '0047', '0067') and the Insurance Option Code List contains 'LP', there must two P14 records for Irrigated/Non-Irrigated Practices sent by the Sales Closing Date and the coverage levels must be different by irrigation practice. This rule 72734 has been modified to exclude SCO or STAX policy and for the base policy where SCO and/or STAX policy exists. Rule 73328 will apply instead.

P14:
- CR 37395 – Added new rule 73328 for SCO/STAX for RY-2015 forward for Commodity not by type or variety where the Commodity Code is not one of the following values: ('0052',

'0053', '0034', '0054', '0047', '0067') and the Insurance
Option Code List contains 'LP', there must two P14 records
for Irrigated/Non-Irrigated Practices sent by the Sales
Closing Date and the coverage levels must be different by
irrigation practice. This rule will allow two P14 records
by irrigated/non-irrigated practices per SCO, STAX, or base
policy.

P14:
- CR 37395 – Added new rule 76687 to ensure that the
  Associated Aip Insurance In Force Key must be unique within
  the same policy for SCO or STAX. There must be one and only
  one SCO or STAX P14 record pointing to a particular base
  P14 record. Multiple SCO or STAX P14 records for the same
  policy, same Associated Aip Policy Producer Key, and same
  Associated AIP Insurance In Force Key are not allowed.

P14:
- CR 37395 – Added new rule 76688 to ensure that the
  Associated Aip Policy Producer Key and Associated Aip
  Insurance In Force Key on the P14 record must be populated
  for STAX if the STAX policy is found to have a
  base/companion policy. They can only be empty (NULL) if the
  STAX is a standalone policy.

P14:
- CR 37395 – For ARPI plans 04, 05, 06 with multiple types
  and practices, there must be a one to one match of STAX
  P14's to ARPI base/companion P14. Added new rule 76689 to
  validate the base policy to the STAX policy. For base
  policy under ARPI plan 04, 05, or 06 with multiple types
  and practices, if the STAX policy (plan 35 or 36) exists,
  then there must be a one to one match by Type by Practice
  of STAX P14 record to APRI base/companion P14 record. Added
  new rule 76690 to validate the STAX policy to the base
  policy. For STAX policy (plan 35 or 36), if the base policy
  is ARPI plan 04, 05, or 06 with multiple types and
  practices, then there must be a one to one match by Type by
  Practice of STAX P14 record to APRI base/companion P14
  record.

P14:
- CR 37395 – Added new rule 76710 to ensure that if the
  base/companion policy has the LP option, then the LP option
  must also be on the SCO policy.

P15A:

- CR 38727 – This CR improves performance of the Skip Row Code and Skip Row Width validations against the Skip Row ICE "D00039" on the P15A and P11. The validation is now split into two rules, one for Cotton 0021 and 0022, and one for Corn 0041.

P11:
- CR 38727 – This CR improves performance of the Skip Row Code and Skip Row Width validations against the Skip Row ICE "D00039" on the P15A and P11. The validation is now split into two rules, one for Cotton 0021 and 0022, and one for Corn 0041.