

Exhibit Name: Premium Calculation

Exhibit Number: P11-9, Plan 90

Record Name: Acreage

Record Code: P11

Reinsurance Year: 2014

Version: Approved

Release Date: 9/27/2018

<u>Insurance Plan Code</u>	90 Actual Production History			
0012 Blueberries	0053 Grapes	0107 Alfalfa Seed	0230 Fire Cured Tobacco	
0013 Onions	0054 Apples	0114 Buckwheat	0231 Burley Tobacco	
0016 Oats	0055 Culti Wild Rice	0132 Cucumbers	0232 Maryland Tobacco	
0017 Millet	0058 Cranberries	0147 Pumpkins	0233 Dark Air Tobacco	
0019 Avocados	0059 Silage Sorghum	0156 Sweet Potatoes	0234 Cigar Filler Tobacco	
0022 Cotton Extra Long	0060 Figs	0201 Grapefruit	0235 Cigar Bindr Tobacco	
0023 Macadamia Nuts	0064 Green Peas	0202 Lemons	0236 Cigar Wrapper Tobacco	
0028 Almonds	0067 Dry Peas	0203 Tangelos	0238 Rio Red & Star Ruby	
<u>Commodity Code</u> 0029 Walnuts	0069 Mustard	0218 Fresh Apricots	0255 Banana	
0031 Flax	0072 Cabbage	0219 Processing Apricots	0256 Coffee	
0033 Forage Production	0074 Mint	0220 Fresh Nectarines	0257 Papaya	
0034 Peaches	0075 Peanuts	0221 Processing Cling Peaches	0309 Mandarins/Tangerines	
0036 Prunes	0084 Potatoes	0222 Processing Freestone	0333 Camelina	
0038 Sugar Cane	0086 Fresh Tomatoes	0223 Fresh Freestone Peaches	0396 Sesame	
0039 Sugar Beets	0087 Tomatoes	0224 Early & Midseason Oranges	0470 Pistachios	
0042 Sweet Corn	0089 Pears	0225 Late Oranges	0501 Olives	
0046 Canning Beans	0092 Fresh Plums	0226 All Other Grapefruit		
0047 Dry Beans	0094 Rye	0227 Oranges		
0049 Safflower	0102 Grass Seed	0228 Ruby Red Grapefruit		
0052 Table Grapes	0105 Fresh Market Beans	0229 Flue Cured Tobacco		

<u>Calculations</u>	<u>Field Name</u>	<u>Record Number</u>	<u>Field Number</u>	<u>Field Format</u>	<u>Field Rounding</u>	<u>Rules</u>
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Section 1: Liability Calculation

Guarantee Per Acre1 = Approved Yield * Coverage Level Percent	Guarantee Per Acre1	Internal		99999999.99	When Unit of Measure equals Pounds, "LBS", then Round to whole Number. When Unit of Measure equals Tons, "Tons", then Round to 2 decimals. Otherwise, Round to 1 decimal.	Guarantee Per Acre1 should be rounded to whole pounds for Dry Beans, "0047" (all types), and Dry Peas, "0067" (all types).
	Approved Yield	P11	46	99999999.99	None	
	Coverage Level Percent	P14	33	9.9999	None	

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Calculations	Field Name	Record Number	Field Number	Field Format	Field Rounding	Rules
Premium Acre Guarantee Quantity = Guarantee Per Acre1 * Yield Conversion Factor	Premium Acre Guarantee Quantity	Internal		99999999.99	When Unit of Measure equals Pounds, "LBS", then Round to whole Number. When Unit of Measure equals Tons, "Tons", then Round to 2 decimals. Otherwise, Round to 1 decimal.	Premium Acre Guarantee Quantity should be rounded to whole pounds for Dry Beans, "0047" (all types), and Dry Peas, "0067" (all types).
	Yield Conversion Factor	P11	63	9.999	None	Yield Conversion Factor must be valid; edit with the Yield Conversion ICE, "D00064".
Round(Guarantee Per Acre1 * Yield Conversion Factor, Acre Guarantee Quantity = lbs to 0, tons to 2, all other 1) * Guarantee Adjustment Factor	Acre Guarantee Quantity	P11	100	99999999.99	When Unit of Measure equals Pounds, "LBS", then Round to whole Number. When Unit of Measure equals Tons, "Tons", then Round to 2 decimals. Otherwise, Round to 1 decimal.	Acre Guarantee Quantity should be rounded to whole pounds for Dry Beans, "0047" (all types), and Dry Peas, "0067" (all types).
	Yield Conversion Factor	P11	63	9.999	None	Yield Conversion Factor must be valid; edit with the Yield Conversion ICE, "D00064".
	Guarantee Adjustment Factor	P11	75	0.999	None	Edit with the Guarantee Adjustment ICE, "D00068".
Premium Total Guarantee Amount = Premium Acre Guarantee Quantity * Reported Acreage	Premium Total Guarantee	Internal		99999999.99	When Unit of Measure equals Barrels or Tons, then Round to 1 decimal. Otherwise, Round to whole number.	
	Reported Acreage	P11	52	999999.99	None	Reported Acreage must equal the sum of all Land, P27, Reported Acreage.

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Calculations	Field Name	Record Number	Field Number	Field Format	Field Rounding	Rules
Total Guarantee Amount = Acre Guarantee Quantity * Reported Acreage	Total Guarantee Amount	P11	97	99999999.99	When Unit of Measure equals Barrels or Tons, then Round to 1 decimal. Otherwise, Round to whole number.	
	Reported Acreage	P11	52	999999.99	None	Reported Acreage must equal the sum of all Land, P27, Reported Acreage.
Price Election Amount = ADM Price (or Contract Price) * Price Election Percent	Price Election Amount	P11 (Internal)	49	9999.9999	See Appendix III Price Election Amount Rounding Exhibit P11-8.	Result will be capped if based on Contract Price and it exceeds Contract Price Max.
	ADM Price	ADM		99999.9999		Edit with ADM Price, "00810".
	Contract Price	P11	50	9999.9999	None	Contract Price, if applicable, should be entered in the Contract Price field.
	Price Election Percent	P14	35	9.9999	None	
Premium Liability Amount = Premium Total Guarantee Amount * Price Election Amount * Insured Share Percent	Premium Liability Amount	Internal		9999999999	Round to whole number	
	Price Election Amount	P11	49	9999.9999	None	Edit with ADM Price, "A00810".
	Insured Share Percent	P11	47	9.999	None	
For Mustard (commodity 0069): Premium Liability Amount = (Lesser of "Reported Pounds or Premium Total Guarantee Amount") * Price Election Amount * Insured Share Percent	Premium Liability Amount	Internal		9999999999	Round to whole number	
	Reported Pounds	P11	36	9999999999	None	
	Price Election Amount	P11	49	9999.9999	None	Edit with ADM Price, "A00810".
	Insured Share Percent	P11	47	9.999	None	
Liability Amount = Total Guarantee Amount * Price Election Amount * Insured Share Percent	Liability Amount	P11	88	9999999999	Round to whole number.	
	Price Election Amount	P11	49	9999.9999	None	
	Insured Share Percent	P11	47	9.999	None	
For Mustard (commodity 0069): Liability Amount = (Lesser of "Reported Pounds or Total Guarantee Amount") * Price Election Amount * Insured Share Percent	Liability Amount	P11	91	9999999999	Round to whole number	
	Reported Pounds	P11	36	9999999999	None	
	Price Election Amount	P11	49	9999.9999	None	Edit with ADM Price, "A00810".
	Insured Share Percent	P11	47	9.999	None	
Section 2: Base Premium Rate Calculation						
Current Year Yield Ratio = Rate Yield / Reference Yield	Current Year Yield Ratio	Internal		9999999.99	Round to 2 decimals.	Cup at 0.50 and Cap at 1.50.
	Rate Yield	P15	38	99999999.99	None	
	Reference Yield	ADM		99999.99	None	Edit with ADM Base Rate, "A01010".
Prior Year Yield Ratio = Rate Yield / Prior Year Reference Yield	Prior Year Yield Ratio	Internal		9999999.99	Round to 2 decimals.	
	Rate Yield	P15	38	99999999.99	None	
	Prior Year Reference Yield	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		999999.99999999	Round to 8 decimals.	
	Exponent Value	ADM		999.999	None	Edit with ADM Base Rate, "A01010".
Prior Year Rate Multiplier = Prior Year Yield Ratio ^ Prior Year Exponent Value	Prior Year Rate Multiplier	Internal		999999.99999999	Round to 8 decimals.	
	Prior Year Exponent Value	ADM		999.999	None	Edit with ADM Base Rate, "A01010".

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Calculations		Field Name	Record Number	Field Number	Field Format	Field Rounding	Rules
Current Year Base Rate =	When Rate Method Code equals Fixed Rate, "F": Sub County Rate	Current Year Base Rate	Internal		999999.99999999	Round to 8 decimals.	
	When Rate Method Code equals Additive, "A": Sub County Rate + (Current Year Rate Multiplier * Reference Rate + Fixed Rate)	Sub County Rate	ADM		9.9999	None	Edit with ADM Sub County Rate, "A01050".
	When Rate Method Code equals Multiplicative, "M": Sub County Rate * (Current Year Rate Multiplier * Reference Rate + Fixed Rate)	Reference Rate	ADM		9.9999	None	Edit with ADM Base Rate, "A01010".
	Otherwise: Current Year Rate Multiplier * Reference Rate + Fixed Rate.	Fixed Rate	ADM		9.9999	None	Edit with ADM Base Rate, "A01010".
Prior Year Base Rate =	When Rate Method Code equals Fixed Rate, "F": Sub County Rate	Prior Year Base Rate	Internal		999999.99999999	Round to 8 decimals.	
	When Rate Method Code equals Additive, "A": Sub County Rate + (Prior Year Rate Multiplier * Prior Year Reference Rate + Prior Year Fixed Rate)	Sub County Rate	ADM		9.9999	None	Edit with ADM Sub County Rate, "A01050".
	When Rate Method Code equals Multiplicative, "M": 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".
	Otherwise: 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".

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Calculations	Field Name	Record Number	Field Number	Field Format	Field Rounding	Rules
$\text{Current Year Base Premium Rate} = \frac{\text{Current Year Base Rate} * \text{Rate Differential Factor} * \text{Unit Residual Factor}}{\text{Residual Factor}}$	Current Year Base Premium Rate	Internal		999999.99999999	Round to 8 decimals.	
	Rate Differential Factor	ADM		9.99999999	None	Edit with ADM Coverage Level Differential, "A01040".
	Unit Residual Factor	ADM		9.999	None	Edit with ADM Coverage Level Differential, "A01040". When Unit Structure Code equals "OU", "UA", "UD", or "BU", then Unit Residual Factor. When Unit Structure Code equals "EU", then Enterprise Unit Residual Factor.
$\text{Prior Year Base Premium Rate} = \frac{\text{Prior Year Base Rate} * \text{Prior Year Rate Differential Factor}}{\text{Prior Year Residual Factor} * 1.2}$	Prior Year Base Premium Rate	Internal		999999.99999999	Round to 8 decimals.	
	Prior Year Rate Differential Factor	ADM		9.99999999	None	Edit with ADM Coverage Level Differential, "A01040".
	Prior Year Unit Residual Factor	ADM		9.999	None	Edit with ADM Coverage Level Differential, "A01040". When Unit Structure Code equals "OU", "UA", "UD", or "BU", then Prior Year Unit Residual Factor. When Unit Structure Code equals "EU", then Prior Year Enterprise Unit Residual Factor.
$\text{Base Premium Rate} = \text{MIN}(\text{Current Year Base Premium Rate}, \text{Prior Year Base Premium Rate}, \text{or } .999)$	Base Premium Rate	P11	91	999999.99999999	None	
Section 3: Optional Coverage Calculation						
$\text{Additive Optional Rate Adjustment Factor} = \frac{\text{SUM}(\text{Option Rate(s)}) * \text{Rate Differential Factor}}{\text{Rate Differential Factor}}$ <p>When Rate Method Code = A</p>	Additive Optional Rate Adjustment Factor	Internal		999999.9999	Round to 4 decimals.	
	Option Rate	ADM		9.9999	None	Edit with ADM Option Rate, "A01060".
	Rate Differential Factor	ADM		9.99999999	None	Edit with ADM Coverage Level Differential, "A01040".
$\text{Multiplicative Optional Rate Adjustment Factor} = \text{Product}(\text{Option Rate(s)})$ <p>When Rate Method Code = M</p>	Multiplicative Optional Rate Adjustment Factor	Internal		999999.9999	Round to 4 decimals.	
	Option Rate	ADM		9.9999	None	Edit with ADM Option Rate, "A01060".

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Calculations	Field Name	Record Number	Field Number	Field Format	Field Rounding	Rules
Section 4: Premium Rate Calculation						
$\text{Premium Rate} = \frac{\text{Base Premium Rate} * \text{Unit Structure Discount Factor} * \text{Multiplicative Optional Rate Adjustment Factor} + \text{Additive Optional Rate Adjustment Factor}}{\text{Unit Structure Discount Factor}}$	Premium Rate	Internal		999999.99999999	Round to 8 decimals.	Premium Rate is capped at 0.99900000.
	Unit Structure Discount Factor	ADM		9.999	None	Edit with ADM Unit Discount, "A01090". When Unit Structure Code equals "OU", "UA", or "UD", then Unit Structure Discount Factor equals Optional Unit Discount Factor. When Unit Structure Code equals "BU", then Unit Structure Discount Factor equals Basic Unit Discount Factor. When Unit Structure Code equals "EU", then Unit Structure Discount Factor equals Enterprise Unit Discount Factor.
Section 5: Total Premium, Subsidy, and Producer Premium Calculation						
$\text{Preliminary Total Premium Amount} = \frac{\text{Premium Liability Amount} * \text{Premium Rate} * \text{Experience Factor} * \text{Premium Surcharge Percent}}{\text{Factor}}$	Preliminary Total Premium Amount	Internal		9999999999	Round to whole number	
	Experience Factor	P11	51	9.999	None	Must be a value between minimum and maximum on ICE, "D10023".
	Premium Surcharge Percent	Internal		9.99	None	When Surcharge Applied Flag equals "Y", then Premium Surcharge Percent must equal 0.05, otherwise must equal 0.00.
$\text{Total Premium Amount} = \frac{\text{Preliminary Total Premium Amount} * \text{Multiple Commodity Adjustment Factor}}$	Total Premium Amount	P11	89	9999999999	Round to whole number	
	Multiple Commodity Adjustment Factor	ICE		9999.999	None	Edit with ICE Multiple Cropping, "D00063".
$\text{Subsidy Amount} = \text{Total Premium Amount} * \text{Subsidy Percent}$	Subsidy Amount	P11	87	9999999999	Round to whole number	
	Subsidy Percent	ADM		9.999	None	Edit with ADM Subsidy Percent, "A00070".
$\text{Producer Premium Amount} = \text{Total Premium Amount} - \text{Subsidy Amount}$	Producer Premium Amount	P11	90	9999999999	Round to whole number	

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Calculations	Field Name	Record Number	Field Number	Field Format	Field Rounding	Rules
						Information (Approved Yield, Rate Yield, Reported Acreage, Insured Share Percent, Base Premium Rate) will be obtained from ELS Cotton P11 record associated with the Cottonseed record.
Section 6: Liability Calculation						
Modified Yield = Approved Yield * Option Conversion Factor	Modified Yield	Internal		99999999.99	Round to whole Number.	
	Approved Yield	P11	46	99999999.99	None	From ELS cotton P11 record.
	Option Conversion Factor	P11	64	9.9999	None	Edit with ADM Option Rate, "A01060".
Guarantee Per Acre1 = Modified Yield * Coverage Level Percent	Guarantee Per Acre1	Internal		99999999.99	Round to whole Number.	
	Coverage Level Percent	P14	33	9.9999	None	
Premium Acre Guarantee Quantity = Guarantee Per Acre1	Premium Acre Guarantee Quantity	Internal		99999999.99	Round to whole Number.	
Acre Guarantee Quantity = Guarantee Per Acre1 * Guarantee Adjustment Factor	Acre Guarantee Quantity	P11	100	99999999.99		
	Guarantee Adjustment Factor	P11	75	0.999	None	Edit with the Guarantee Adjustment ICE, "D00068".
Premium Total Guarantee Amount = Premium Acre Guarantee Quantity * Reported Acreage	Premium Total Guarantee Amount	Internal		99999999.99	Round to whole number.	
	Reported Acreage	P11	52	999999.99	None	From ELS cotton P11 record.
Total Guarantee Amount = Acre Guarantee Quantity * Reported Acreage	Total Guarantee Amount	P11	97	99999999.99	Round to whole number.	
	Reported Acreage	P11	52	999999.99	None	From ELS cotton P11 record.
Premium Liability Amount = Premium Total Guarantee Amount * Price Election Amount * Insured Share Percent	Premium Liability Amount	Internal		9999999999	Round to whole number	
	Price Election Amount	P11	49	9999.9999	None	Edit with ADM Price, "A00810". Will always equal 100% of Cottonseed Established Price.
	Insured Share Percent	P11	47	9.999	None	
Liability Amount = Total Guarantee Amount * Price Election Amount * Insured Share Percent	Liability Amount	P11	88	9999999999	Round to whole number.	
	Price Election Amount	P11	49	9999.9999	None	
	Insured Share Percent	P11	47	9.999	None	
Section 7: Optional Coverage Calculation						
Additive Optional Rate Adjustment Factor = SUM (Option Rate(s)) * Rate Differential Factor When Rate Method Code = A	Additive Optional Rate Adjustment Factor	Internal		999999.9999	Round to 4 decimals.	
	Option Rate	ADM		9.9999	None	Edit with ADM Option Rate, "A01060".
	Rate Differential Factor	ADM		9.99999999	None	Edit with ADM Coverage Level Differential, "A01040".
Multiplicative Optional Rate Adjustment Factor = Product (Option Rate(s)) When Rate Method Code = M	Multiplicative Optional Rate Adjustment Factor	Internal		999999.9999	Round to 4 decimals.	
	Option Rate	ADM		9.9999	None	Edit with ADM Option Rate, "A01060".

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Section 8: Premium Rate Calculation						
	Premium Rate	Internal		999999.99999999	Round to 8 decimals.	
	Base Premium Rate	P11	91	999999.99999999	None	From ELS cotton P11 record.
$\text{Premium Rate} = \text{Base Premium Rate} * \text{Unit Structure Discount Factor} * \text{Multiplicative Optional Rate Adjustment Factor} + \text{Additive Optional Rate Adjustment Factor}$	Unit Structure Discount Factor	ADM		9.999	None	From ELS cotton P11 record. Edit with ADM Unit Discount, "A01090". When Unit Structure Code equals "OU", "UA", or "UD", then Unit Structure Discount Factor equals Optional Unit Discount Factor. When Unit Structure Code equals "BU", then Unit Structure Discount Factor equals Basic Unit Discount Factor. When Unit Structure Code equals "EU", then Unit Structure Discount Factor equals Enterprise Unit Discount Factor.
Section 9: Total Premium, Subsidy, and Producer Premium Calculation						
	Preliminary Total Premium Amount	Internal		9999999999	Round to whole number	
$\text{Preliminary Total Premium Amount} = \text{Premium Liability Amount} * \text{Premium Rate} * \text{Experience Factor} * \text{Premium Surcharge Percent}$	Experience Factor	P11	51	9.999	None	Must be a value between minimum and maximum on ICE, "D10023".
	Premium Surcharge Percent	Internal		9.99	None	When Surcharge Applied Flag equals "Y", then Premium Surcharge Percent must equal 0.05, otherwise must equal 0.00.
	Total Premium Amount	P11	89	9999999999	Round to whole number	
$\text{Total Premium Amount} = \text{Preliminary Total Premium Amount} * \text{Multiple Commodity Adjustment Factor}$	Multiple Commodity Adjustment Factor	ICE		9999.999	None	Edit with ICE Multiple Cropping, "D00063".
	Subsidy Amount	P11	87	9999999999	Round to whole number	
$\text{Subsidy Amount} = \text{Total Premium Amount} * \text{Subsidy Percent}$	Subsidy Percent	ADM		9.999	None	Edit with ADM Subsidy Percent, "A00070".
	Producer Premium Amount	P11	90	9999999999	Round to whole number	
$\text{Producer Premium Amount} = \text{Total Premium Amount} - \text{Subsidy Amount}$						