

The following example will step through multiple crop year rate capping process. We are given the following 35's for crop years 2000 and 2001 for the listed type and practice. An abbreviated Record 1C (not all prior yield and rate fields are shown) is also displayed for each year

#### 2000 APH rates for corn in Adair Co., Iowa

TYPE: (016) Grain		PRAC: (002) Irrigated
53.0 & Below	R01	0.262
54.0 - 68.0	R02	0.207
69.0 - 83.0	R03	0.144
84.0 - 98.0	R04	0.108
99.0 - 115.0	R05	0.087
116.0 - 130.0	R06	0.077
131.0 - 145.0	R07	0.070
146.0 - 160.0	R08	0.063
161.0 & Above	R09	0.061

#### 2001 APH rates for corn in Adair Co., Iowa

Type:(016) Grain		PRAC:(002) Irrigated
REFERENCE YIELD(BU)	107	
REFERENCE RATE	0.058	
EXPONENT	-1.961	
FIXED RATE LOAD	0.032	

**Draft**

**Capping Example # 3**

# Year 1

**CY 2001**

The 1C record (abbreviated fields and field names)

crop yr	state	county	crop	IP	prac	type	ref yld	ref rate	exponent	sign	fixed rate	pr yld 3	pr bpr 3	pr yld 4	pr bpr 4	pr yld 5	pr bpr 5	ref yld	ref rate	exponent	sign	fixed rate
2001	19	1	0041	90	002	016	107	0.058	1.961	-	0.032	83.0	0.144	98.0	0.108	115.0	0.087	107	0.058	1.961	-	0.032
Initial year same as current																						

**CY 2001**

Assume APH Yield of 101 bu

- Calculate the current year's yield ratio (rounded to 2 decimals) 1  
 $101.0/107.0 = .94$
- Calculate the current year's uncapped base premium rate (rounded to 8 decimals) 2  
 $[[.94**-1.961] * .058 + .032 ] = .09748235$
- Refer to prior year capped APH rate for 101 bu and multiply by 1.2 3  
 $[ .087 * 1.2 ] = .10440000$
- Calculate the prior years yield ratio 4  
 $101.0/107.0 = .94$
- Calculate the prior years continuous rating base premium rate and multiply by 1.2 5  
 $[[.94**-1.961] * .058 + .032 ] * 1.2 = .11697882$
- Determine the preliminary base premium rate ( lower of 2, 3 and 5 ) 6  
 $[ .09748235, .10440000, .11697882 ] = .09748235$

# Year 2

**CY 2002**

The 1C record (abbreviated fields and field names)

crop yr	state	county	crop	IP	prac	type	ref yld	ref rate	exponent	sign	fixed rate	pr yld 3	pr bpr 3	pr yld 4	pr bpr 4	pr yld 5	pr bpr 5	ref yld	ref rate	exponent	sign	fixed rate
2002	19	1	0041	90	002	016	107	0.058	1.961	-	0.032	83.0	0.173	98.0	0.123	115.0	0.104	107	0.058	1.961	-	0.032
												2000 rates updated by 20%				Capped		2001 continuous rate function				

**CY 2002**

Assume APH Yield of 90 bu Approved 91 bu

- Calculate the current year's yield ratio (rounded to 2 decimals) 1  
 $90.0/107.0 = .84$
- Calculate the current year's uncapped base premium rate (rounded to 8 decimals) 2  
 $[[.84**-1.961] * .058 + .032 ] = .1136425$
- Refer to prior year capped APH rate for 90 bu and multiply by 1.2 3  
 $[ .123 * 1.2 ] = .14760000$
- Calculate the prior years yield ratio 4  
 $90.0/107.0 = .84$
- Calculate the prior years continuous rating base premium rate and multiply by 1.2 5  
 $[[.84**-1.961] * .058 + .032 ] *1.2 = .136371$
- Determine the preliminary base premium rate ( lower of 2, 3 and 5 ) 6  
 $[ .1136425, .14760000, .136371 ] = .1136425$

# Year 3

**CY 2003**

The 1C record (abbreviated fields and field names)

crop yr	state	county	crop	IP	prac	type	ref yld	ref rate	exponent	sign	fixed rate	pr yld 3	pr bpr 3	pr yld 4	pr bpr 4	pr yld 5	pr bpr 5	ref yld	ref rate	exponent	sign	fixed rate
2003	19	1	0041	90	002	016	110	0.060	2.000	-	0.033	83.0	0.208	98.0	0.148	115.0	0.123	107	0.058	1.961	-	0.032
												2000 rates updated by 20%			Capped		2002 continuous rate function					

**CY 2003**

Assume APH Yield of 95 bu  
 Assume RMA updated reference yield to 110 bu and rate variables

- 1 Calculate the current year's yield ratio (rounded to 2 decimals)  
 $95/110.0 = .86$
- 2 Calculate the current year's uncapped base premium rate (rounded to 8 decimals)  
 $[[.86**-2.000] * .060 + .033 ] = .11412493$
- 3 Refer to prior year capped APH rate for 29 bu and multiply by 1.2  
 $[ .148 * 1.2 ] = .17760000$
- 4 Calculate the prior years yield ratio  
 $95/107.0 = .89$
- 5 Calculate the prior years continuous rating base premium rate and multiply by 1.2  
 $[[.89**-1.961] * .058 + .032 ] * 1.2 = .12586926$
- 6 Determine the preliminary base premium rate ( lower of 2, 3 and 5 )  
 $[ .11412493, .17760000, .12586926 ] = .11412493$

# Year 4

**CY 2004**

The 1C record (abbreviated fields and field names)

crop yr	state	county	crop	IP	prac	type	ref yld	ref rate	exponent	sign	fixed rate	pr yld 3	pr bpr 3	pr yld 4	pr bpr 4	pr yld 5	pr bpr 5	ref yld	ref rate	exponent	sign	fixed rate
2004	19	1	0041	90	002	016	110	0.060	2.000	-	0.033	83.0	0.250	98.0	0.178	115.0	0.148	110	0.060	2.000	-	0.033
												2000 rates updated by 20%				Capped		2003 continuous rate function				

**CY 2004**

Assume APH Yield of 91 bu

- Calculate the current year's yield ratio (rounded to 2 decimals) 1  
 $91/110 = .83$
- Calculate the current year's uncapped base premium rate (rounded to 8 decimals) 2  
 $[[.83**-2.000] * .060 + .033 ] = .12009537$
- Refer to prior year capped APH rate for 91 bu and multiply by 1.2 3  
 $[ .178 * 1.2 ] = .21360000$
- Calculate the prior years yield ratio 4  
 $91/110 = .83$
- Calculate the prior years continuous rating base premium rate and multiply by 1.2 5  
 $[[.83**-2.000] * .060 + .033 ] * 1.2 = .14411444$
- Determine the preliminary base premium rate ( lower of 2, 3 and 5 ) 6  
 $[ .12009537, .21360000, .14411444 ] = .12009537$

107 0.058 1.961 - 0.032  
110 0.060 2.000 - 0.033

## Capped rates in year 3

yield	prior yr rate	current yr rate	cap
83	0.152	0.140	
84	0.149	0.137	
85	0.149	0.134	
86	0.146	0.132	
87	0.144	0.129	
88	0.141	0.127	
89	0.139	0.124	
90	0.136	0.122	
91	0.134	0.120	
92	0.132	0.118	
93	0.130	0.116	
94	0.128	0.116	
95	0.126	0.114	
96	0.124	0.112	
97	0.122	0.110	
98	0.120	0.109	
99	0.119	0.107	
100	0.119	0.105	
101	0.117	0.104	
102	0.115	0.102	
103	0.114	0.101	
104	0.112	0.099	
105	0.111	0.099	
106	0.109	0.098	
107	0.108	0.097	
108	0.107	0.095	
109	0.105	0.094	
110	0.104	0.093	
111	0.103	0.092	
112	0.102	0.091	
113	0.100	0.090	
114	0.099	0.088	
115	0.099	0.087	
116	0.098	0.087	
117	0.097	0.086	
118	0.096	0.085	
119	0.095	0.084	
120	0.094	0.084	
121	0.093	0.083	