



# FARM BILL INFORMATION SERIES



## Updating Base Acreage and Yield — Cotton Example

Information Sheet No. 4

May 2002

### Example for 100 Acres of Cotton Base Under the 2002 Farm Bill

Cotton Base Acreage on the Farm =  
100 acres

Payment Acres =  
85% of Cotton Base

Cotton Program Payment Yield =  
721 pounds lint (*state avg.*)

**1998-2001 Production History:** (*yields and percent of base planted are approximately equal to state average*)

	Planted Cotton Acreage (acres)	Yield per Acre (lbs/acre)
1998	54	586
1999	62	709
2000	71	629
2001	87	578
Average	68.5	625.5

**2002 Cotton Program Parameters:**

	(\$/lb)
Target Price	\$0.7240
Loan Rate	\$0.5200
Fixed Payment	\$0.0667
Counter-cyclical Payment (maximum)	\$0.1373
Total Program Payment	\$0.2040

### Cotton Base Acreage and Program Yield Update Options:

#### 1 No Update of Base Acres or Program Yield (100 base acres / 85 payment acres)

[Fixed payment yield equals existing cotton program yield (721 lbs/acre)]

Counter-cyclical payment yield equals existing cotton program yield (721 lbs/acre)]

Program Payment Type	Payment Yield	Payment Rate	Payment per Acre	Payment Acres	Total Payment
Fixed payment	721	\$0.0667	\$48.09	85	\$4,088
Counter-cyclical	721	\$0.1373	\$98.99	85	\$8,414
					\$12,502

#### 2 Update of Base Acres but not Program Yield (68.5 base acres / 58.2 payment acres)

[Updated cotton base acres equals average 1998-2001 planted acreage (68.5 acres)]

Fixed payment yield equals existing cotton program yield (721 lbs/acre)

Counter-cyclical payment yield equals existing cotton program yield (721 lbs/acre)]

Program Payment Type	Payment Yield	Payment Rate	Payment per Acre	Payment Acres	Total Payment
Fixed payment	721	\$0.0667	\$48.09	58.2	\$2,799
Counter-cyclical	721	\$0.1373	\$98.99	58.2	\$5,761
					\$8,560

#### 3 Update of Base Acres and Program Yield (option 1) (68.5 base acres / 58.2 payment acres)

[Updated cotton base acres equals average 1998-2001 planted acreage (68.5 acres)]

Fixed payment yield equals existing cotton program yield (721 lbs/acre)

Counter-cyclical payment yield equals existing cotton program yield plus 70% of the increase of 1998-2001 average yield =  $721 + (625.5 - 721) \times 70\% = 654$  lbs/acre]

Program Payment Type	Payment Yield	Payment Rate	Payment per Acre	Payment Acres	Total Payment
Fixed payment	721	\$0.0667	\$48.09	58.2	\$2,799
Counter-cyclical	654	\$0.1373	\$89.79	58.2	\$5,226
					\$8,025

**4 Update of Base Acres and Program Yield (option 2) (68.5 base acres / 58.2 payment acres)**

[Updated cotton base acres equals average 1998-2001 planted acreage (68.5 acres)]

Fixed payment yield equals existing cotton program yield (721 lbs/acre)

Counter cyclical payment yield equals 93.5% of 1998-2001 average yield = 625.5 x 93.5% = 585 lbs/acre]

Program Payment Type	Payment Yield	Payment Rate	Payment per Acre	Payment Acres	Total Payment
Fixed payment	721	\$0.0667	\$48.09	58.2	\$2,799
Countercyclical	585	\$0.1373	\$77.55	58.2	<u>\$4,513</u>
					\$7,312

**Impact of Different Acreage and Yield Levels on Update Options**

**Impact of Percent of Cotton Base Planted on Total Program Payments:**

[100 acres of original cotton base, 1998-2001 yield (625.5) is 87% of the payment yield (721 lbs)]

----- Average Percent of cotton Base Planted in 1998-2001 -----

Total Payments	68.5%	75%	85%	95%	125%
(1) No update	\$12,502	\$12,502	\$12,502	\$12,502	\$12,502
(2) Update base only	\$ 8,564	\$ 9,377	\$10,627	\$11,877	\$15,628
(3) Update base & yield (70%)	\$ 8,030	\$ 8,791	\$ 9,964	\$11,136	\$14,652
(4) Update base & yield (93.5%)	\$ 7,475	\$ 8,185	\$ 9,276	\$10,367	\$13,641

**Impact of Program Payment Yield Gain on Total Program Payments:**

[100 acres of original cotton base, 1998-2001 average planted base is 68.5 acres (68.5%)

1998-2001 average cotton yield equals 625.5 lbs per acre]

---- Current Program Yield (cwt/acre) ----

Total Payments	650 lbs	721 lbs	775 lbs	825 lbs
(1) No update	\$11,271	\$12,502	\$13,439	\$14,306
(2) Update base only	\$ 7,721	\$ 8,564	\$ 9,205	\$ 9,799
(3) Update base & yield (70%)	\$ 7,584	\$ 8,030	\$ 8,369	\$ 8,683
(4) Update base & yield (93.5%)	\$ 7,200	\$ 7,475	\$ 7,685	\$ 7,879

**Calculating Yield Required to Give the Same Total Program Payments for a Cotton Farm**

Total Cotton Program Payments	=	Payment Acres	x	Payment per Acre
	=	[Base Acres x 85%]	x	[(FixedPmt x FPYld)+(CCPmt x CCYld)]
Example: \$12,502	=	(100 base acres x 85%)	x	[((\$0.0667 x 721) + (\$0.1373 x 721)]
	=	(90 base acres x 85%)	x	[((\$0.0667 x 721) + (\$0.1373 x 840)]
	=	(80 base acres x 85%)	x	[((\$0.0667 x 721) + (\$0.1373 x 989)]

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