



# Ag Decision Maker



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### Five options offered for 2002 Farm Bill

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The Farm Security and Rural Investment Act of 2002, better known as the 2002 Farm Bill, offers farmers and landowners a chance to update the base acres and yields that are used to calculate their commodity program payments. The Farm Service Agency has defined five separate options from which to choose.

#### Handbook Updates

For those of you subscribing to the *Ag Decision Maker Handbook*, the following updates are included.

#### Crop Planning Prices—

File A1-10 (2 pages)

#### Livestock Planning Prices—

File B1-10 (1 page)

Please add these files to your handbook and remove the out-of-date material.

#### Option 1

The first option is to retain only the acreage bases that the producer had under the past program. These are shown as 2002 Product Flexibility Contracts (PFC) acres on the Farm Summary Report sent out by FSA around August 1. The example in this article shows current bases of 300 acres for corn and 25 acres for oats. Prior programs did not include bases for oilseeds, such as soybeans. If the producer has grown any soybeans in the past four years, option 1 will probably not be favorable. Farmers who have grown only corn and have not increased yields since the early 1980s are the only ones who would find option 1 attractive.

#### Option 2

Under option 2, producers can retain existing PFC acreage bases and add an oilseed base.

The number of acres eligible for a soybean base is based on actual crop acres from 1998 through 2001. Eligible acres are the smaller of the average:

- actual planted and prevented planted soybean acres, or
- total acres of program crops minus the acres in existing bases.

For example, if the producer planted 500 total acres of corn and soybeans (50/50 rotation) each of the past four years, and

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his/her current bases are 300 acres of corn and 25 acres of oats, he/she could claim up to 175 acres toward his/her soybean base. However, if the producer averaged only 150 acres of soybeans in 1998–2001, then the soybean base will be only 150 acres.

Producers who grow both corn and soybeans, and who have a current PFC corn base somewhat larger than their average corn acres during 1998–2001, are most likely to maximize payments under option 2.

**Option 3**

Under option 3, the soybean base is the producer’s average actual acres of soybeans for 1998 through 2001. However, if this is greater than what the producer’s soybean base would be under option 2, he/she must reduce his/her base acres of other crops by the difference in soybean acres. In the example farm, the soybean base would increase from 175 acres in option 2 to 250 acres in option 3. Therefore, the oats base would have to decrease by 25 acres and the corn base by 50 acres.

If the producer has an existing base for oats, it will probably pay to shift it to his/her soybean base, as program payments for oats are quite small. Payments for other crops, such as corn, sorghum or wheat, are generally higher than for soybeans, however, so shifting acres from those crops to soybeans would reduce total payments. Only farmers who can maximize their soybean base by shifting oats base acres only will be likely to choose option 3. This is an unlikely situation in Iowa.

**Option 4**

The only option that allows for updating base acres is the one designated as option 4 by FSA. New bases are assigned for all program crops, equal to the average number of planted and prevented planted acres from 1998 through 2001. In the example both corn and soybeans

would have a 250-acre base. Farmers whose new corn base would be not substantially smaller than their existing PFC corn base will probably prefer option 4.

This is also the only option that allows for updating program yields. FSA offers two different methods for computing new program yields, both based on average yields from 1998 through 2001. The average yields are calculated as the total bushels of each crop produced during 1998–2001 period, divided by the total acres of each crop harvested during the period.

The producer can also elect to keep his/her old program yields. It is unlikely that these will be higher than recent yields, however. An exception might be when no production data is available and the new yield is based on 75 percent of the county average during the past four years

**Option 5**

Option 5 is exactly like option 3 except that the producer can shift less than the maximum acres allowed from other crop bases into the soybean base. In the example, only the 25 acres of oats base is shifted to the soybean base. It will usually not pay to shift corn or other crop base acres to soybeans.

Most farmers in Iowa will choose either option 2 (retain existing corn base and yield and add a soybean base) or option 4 (update both base acres and yields). If an oats base exists, option 5 can be used to convert it to soybean base and still retain the corn base.

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**Example Farm**

2002 PFC acres are 300 for corn and 25 for oats. Actual plantings for 1998 through 2001 have been 250 acres of corn and 250 acres of soybeans each year. Acreage bases under each option are:

	<u>Corn</u>	<u>Oats</u>	<u>Soybeans</u>
Option 1	300	25	0
Option 2	300	25	175
Option 3	250	0	250
Option 4	250	0	250
Option 5	300	0	200

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The tradeoff is between maximizing the corn base acres and increasing program yields. Updated program yields apply only to counter-cyclical payments, however, and current price forecasts for the 2002 crop are near or above the levels at which these payments would be made. For direct payments, maximizing corn base acres is all that really matters. In future years, counter cyclical payments may come back into play.

Two electronic spreadsheets are available for analyzing options for commodity acreage bases and yields. More details plus a hand worksheet are available under Crop Cost and Returns at the Ag Decision Maker Web site or from ISU Extension publication FM-1872a, "Commodity Programs for Crops." The Farm Bill Payment Analyzer can be downloaded from the *Ag Decision Maker* Web site at:

[www.extension.iastate.edu/agdm](http://www.extension.iastate.edu/agdm). The Farm Service Agency (FSA) will be using a program developed at Texas A and M University, which can be accessed at:

<http://www.afpc.tamu.edu/models/base/>.



## Pre-harvest new-crop corn and soybean pricing strategies show incentives for using options markets

by Robert Wisner, extension grain marketing specialist, [rwwisner@iastate.edu](mailto:rwwisner@iastate.edu), 515-294-6310; Dean Baldwin and Neal Blue, Ohio State University

Recent research on pre-harvest pricing strategies for the 1985–86 through 2001–02 marketing years confirms our earlier work showing significant incentives for pre-harvest pricing with the use of options markets. Previous research through the 1997 marketing year identified potential \$18,000 to \$19,000 average yearly gains in net income for a 1,000 acre cash grain farm (half corn and half soybeans) versus harvest cash sales.

These results came from pricing 80 percent of a 10-year moving average of the farm's production with corn put option purchases in mid-May, and 20 percent with hedge sales in July for harvest delivery.

Soybeans were priced with synthetic puts (hedge sale of November futures, plus purchase of call options two strike prices out of the money). Calls were purchased to take advantage of possible weather rallies in late spring or early summer, and were sold the first week of July to avoid a strong seasonal tendency toward declining call premiums into late summer and fall. From July onward, price protection was retained through the hedge sales.

### Years after short crops

If the previous year's U.S. production was a weather-reduced short crop (production fell below the previous year's use due to adverse weather over a sizeable part of the Corn Belt, but not necessarily in your area), grain is priced in late February before harvest with hedge sales of December futures. Pre-harvest pricing in the winter in those years typically offered higher income than pricing at planting time or waiting until harvest time. Hedge sales were closed out in mid October for soybeans and in early November for corn.

Additional marketing gains were available in many years, especially in the post-1995 Freedom-to-Farm years, by taking advantage of post-harvest basis improvement and market carry (premium of July futures prices over harvest-delivery futures). Although these gains were not considered in the pre-harvest study, the pre-harvest strategies analyzed in this study would give farmers the flexibility to store grain and gain from basis improvement after harvest.\*

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\*(For information on how to implement these post harvest strategies, see "MRP Modules" on <http://www.econ.iastate.edu/faculty/>)

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Case farms

For the analysis, we used two actual northwest Iowa farms, one in Lyon County and one in O'Brien County. The O'Brien County farm had higher and more stable yields than the Lyon County farm, but gains from pre-harvest marketing were similar for both farms. The analysis also was done for a farm in northwest Ohio, with very similar results to those from the Iowa farms. All marketing-related costs were deducted from the gross price that was received.

Synthetic puts

In the updated study, the statistically most significant strategy for the 1985–2001 period was the use of synthetic puts on both corn and soybeans. A synthetic put position is created by selling a portion of the crop through hedge sales on the futures market or with elevator contracts, to protect against declining prices. Then, the same volume of call options is purchased to allow the farmer to retain upward price flexibility, in case new developments should cause prices to rise later on.\* The earlier study analyzing prices through 1997 identified corn put options purchases (combined with a small amount of new-crop hedge sales in early July) as the statistically best performing strategy.

Using the same timing and sales volumes but synthetic puts instead of puts, average income from the pre-harvest strategies for these farms was around \$19,000 to \$20,000 per year higher than harvest sales. In the years following short U.S. crops, if synthetic puts (call purchases two strike prices out of the money plus hedge sales) were used and calls were held until early July, the average annual income gains were reduced by slightly more than a thousand dollars per year versus straight hedge sales in the futures market. Purchasing at the money corn puts in May rather than using out of the money synthetic puts reduced annual average income gains versus harvest sales to around \$16,000 to \$17,000 per year over the 1985–2001 time period.

\*(For information on how to implement these post harvest strategies, see "MRP Modules" on http://www.econ.iastate.edu/faculty/)

Statistical performance

Statistical tests (two-tailed t tests) were used to see if these income gains might be due to random chance. Test results indicated the probability of occurrence by chance over this time period ranged from less than one percent to about four percent. In other words, the tests indicated that a seasonal pattern in new-crop prices has persisted over the 1985–2001 period.

Figures 1 and 2 indicate the pattern has persisted since 1975. The figures show changes in December corn and November soybean futures from late February (after weather-induced short U.S. crops) or mid-May (in years following normal crops) to harvest time, for individual years since 1975.

It should be emphasized that

- these strategies did not provide higher prices than the harvest cash market every year, and
• past performance does not guarantee future results.

Over the study period, gains over harvest cash sales occurred about 80 percent of the time for corn and about 67 percent of the time for soybeans. The 2002 crop year is an example of years when new-crop prices depart from the normal tendency to decline from spring to fall. Pricing with puts or synthetic puts in such years provides considerably higher prices than forward contracts signed in the winter or spring, before widespread crop problems became obvious.

Early pricing and revenue insurance

In most years since the 1996 Freedom-to-Farm legislation, the best pre-harvest pricing opportunities have shown a strong tendency to come very early in the life of the contract—often a year or more ahead of harvest, and with winter prices offering somewhat better opportunities than pricing during the planting season. However, our results for the entire 1985–2001 period show moderately lower returns from routinely pricing in February rather than May. Market behavior in creating private-sector incentives for long-term grain storage to replace

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 CCC inventories suggests the pattern of higher early pricing opportunities may continue in the future.

For farmers who price a substantial part of production before harvest, Crop Revenue Coverage Insurance or Revenue Assurance (with the harvest price option) may be a useful tool for managing production risk. These two tools replace lost production at harvest replacement value by increasing insurance coverage if futures prices rise from winter to the following fall.

### Risks in pricing grain below the loan rate

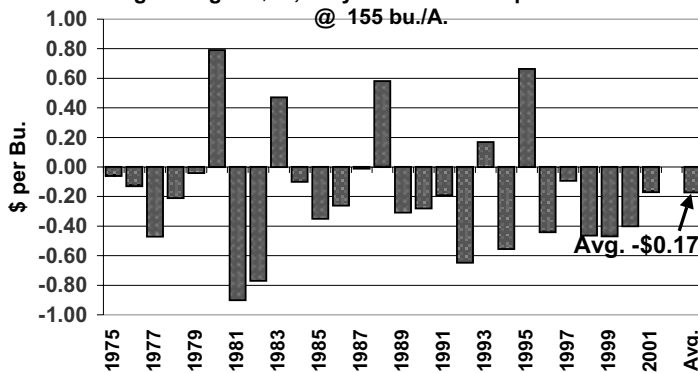
Corn and soybean growers should be cautioned that there is substantial risk in hedging or forward contracting new-crop soybeans before harvest when new-crop bids are well below CCC loan rates.

This is because of the exposure to risk of declining LDP payments if prices rise. This risk can be partially managed with options markets, but

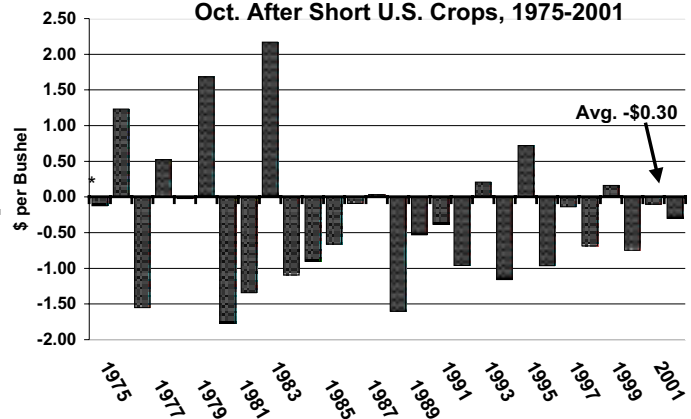
at significant cost. LDP risks were not taken into account in this study. The new farm legislation exposes corn growers to slightly more LDP risk in pre-harvest pricing than in the past, due to the increase in loan rates and a likely increase in corn plantings in the future. The Iowa corn loan rates are approximately 9 cents higher than the pre-2002 rates. Because of a reduction in the soybean loan rate, the LDP risk is lower than in the past, but still potentially quite significant. In summary, new-crop contract bids and hedging prices well below the loan rate would create a significant LDP risk in pre-harvest pricing of corn and soybeans, unless options markets are used to retain upward price flexibility.

The 2002 agricultural legislation also introduces another risk management problem that increases the importance of using options markets in pricing before harvest. This new risk is the risk of reduced or lost counter-cyclical payments as grain prices rise.

**Figure 1. Change in December Corn Futures, 3rd. Week of May vs. early Nov.; & 4th. Wk. of Feb. vs. Early Nov. After Short Crops, 1975-2001**  
 Avg. change = \$13,400/yr. on 85% of crop from 600 A. @ 155 bu./A.



**Figure 2. Change in November Soybeans 3rd. Week of May vs. mid-Oct., & 4th. Wk. of Feb. vs. Oct. After Short U.S. Crops, 1975-2001**



## Are we better off without government stocks overhanging the market?\*

by Daryll E. Ray, Blasingame Chair of Excellence in Agricultural Policy, Institute of Agriculture, director, Agricultural Policy Analysis Center, University of Tennessee, (865) 974-7407, dray@utk.edu

When I go out on speaking engagements, a common audience comment alludes to the fact that while prices during the last four years were extremely low, the year ending stocks did not seem excessively high. That got me wondering, were the crop prices of the last four years as bad as they seemed or do things in the past always seem better in hindsight? As a part of our ongoing examination of the impact of the 1996 Farm Bill on crop agriculture, we took a look at that question.

As we all know, season average corn prices during the last four years were significantly below the peak achieved during the 1995 crop year. In fact, it looks like the season average price of around \$1.90 received by farmers for corn during the now ending 2001 crop year will be some 40 percent below what was received in the 1995 crop year. But where does that \$1.90 stand compared to prices of the last three decades or so?

Looking at prices since 1973 tells the story and it ain't pretty. Corn prices for the last four crop years, 1998 through 2001, are four of the six lowest season average prices in the last 29 years. The other two low price years were 1986 and 1987. But circumstances were considerably different in those years. Stock levels, then, really were large. The year 1986 ended with a

241 day supply of corn and 1987 with a 200 day supply. By way of contrast the year ending stocks for the last four years have been in the range of 60 to 71 days supply.

In other words, the price of corn was about \$2.00 for both 1987 and 2001. However, the 1987 crop year ended with a 200 day supply of corn while 2001 is projected to end with a 60 day supply. Quite a contrast, huh?

Remember when "everybody" said that a major reason crop prices tended to be low was because government stocks "overhung" the market? Another piece of conventional wisdom bites the dust.

Actually it's the absence of some of the trusty old farm program provisions that allowed this to happen. Again the data suggest that without a price support type loan rate program and with no threat of set-asides the next year and, relying on LDPs as a supplement to price, there is no incentive for the marketplace to bid up the price of crops unless adverse weather results in severely tightened supplies. While bad weather here or abroad may provide a respite from low prices, it's surely not a long-term solution.

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