

CORN AND/OR SOYBEANS -- WHICH FOR YOU IN '77?

by

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Last year's corn and soybeans are sold or safely stored. It was a good year for Ohio grain producers, but now it's time to look ahead. Spring is just around the corner and good managers are making plans for this year's crops. An important question that you need to answer is -- should I change my balance of corn and soybeans in 1977? At this writing soybean prices look better than a year ago and corn prices haven't changed much. Prices, however, are only one of several important factors that you need to consider. Production costs, yield levels, and equipment availability among others, must also be taken into account. Let's look at prices first.

PRODUCERS RESPOND TO PRICES

During the past ten years, Ohio grain farmers have shifted acreage between corn and soybeans in response to price changes (see Table 1). For example, soybean acreage, as a percent of land planted to corn and soybeans has averaged 46 percent. However, in any one year it has been as low as 41 percent and as high as 54 percent. The primary reason for this shift in acreage has been the producers' expectation of prices they would receive for their new crop.

To better understand this price effect we need to look at the Ohio soybean/corn price ratio during the past ten years (Table 1). During this period the ratio has averaged 2.3. This means that soybean prices have generally been about 2.3 times greater than corn prices. Thus with

corn at \$2.50 per bushel, one would expect soybeans to be at about \$5.75 per bushel ($2.3 \times \$2.50 = \5.75). With corn at \$2.00, soybeans should be about \$4.60.

Table 1. OHIO CORN AND SOYBEANS

Year	Corn Price (\$/bu)	Soybean Price (\$/bu)	Soybean/Corn Price Ratio	Percent of Corn and Soybean Acres	
				Corn	Soybeans
1967	\$1.04	\$2.55	2.4	59	41
1968	1.03	2.40	2.3	56	44
1969	1.15	2.35	2.0	54	46
1970	1.40	2.85	2.0	57	43
1971	1.06	3.05	2.9	58	42
1972	1.33	4.00	3.0	51	49
1973	2.45	5.65	2.3	46	54
1974	3.00	6.70	2.2	53	47
1975	2.40	4.65	1.9	53	47
1976	2.49	5.60	2.2	58	42
Average	\$1.74	\$3.98	2.3	54	46

It is interesting to note that when this ratio was much higher or lower than the ten-year average, producers adjusted their acreage the following year causing the ratio to return to its normal level. In 1969, 1970, and 1975 the price ratio was low (at or near 2.0). Farmers responded in each instance by shifting acreage to corn the following year. In 1971 and 1972 the price ratio was high (at or near 3.0) and farmers shifted acreage to soybeans in 1972 and 1973. The data also indicates that when the price ratio was at or near the ten year average of 2.3 (1968, 1973, and 1974) farmers planted about forty-six percent (46%) of their corn and soybean acreage to soybeans in the following year.

In 1976, Ohio farmers planted a lot of corn in response to the low price ratio (1.9) in 1975. With the current price ratio at or near 3.0 and with futures prices (fall 1977) and average 1976 prices near the long

run average ratio (2.2) we can expect a return to more normal acreages of corn and soybeans if Ohio farmers respond the way they have during the past ten years.

With price relationships indicating a general shift of acreage from corn to soybeans in a more normal pattern, what are some additional factors you should consider in determining your changes?

PRICE NOT THE ONLY FACTOR

You, as an individual farmer must take several other important variables into consideration when deciding how many acres of corn and soybeans to plant in 1977. Some of these factors are:

1. Yield Relationships: What are the yield relationships between corn and soybeans on your farm, with your soils, and your management.

Table 2 shows the historical yield relationship in Ohio.

Table 2. OHIO CORN AND SOYBEAN YIELDS
1967 - 1976

Year	Corn Yield (Bu/Acre)	Soybean Yield (Bu/Acre)	Soybean Yield as Percent of Corn Yield
1967	77	23	30
1968	84	31	37
1969	85	29	34
1970	79	29	37
1971	91	31	34
1972	92	27	29
1973	79	25	32
1974	73	25	34
1975	90	33	37
1976	101	33	33
Ten-year Average	85	29	34

During the past ten years, soybean yield averaged 34 percent of corn yield in Ohio. That means, the average acre will produce three bushels of

corn for every bushel of soybeans.

This gives us another measure to help determine planting acreages of corn and soybeans. If you can normally raise more than three bushels of corn for each bushel of soybeans, then you have an advantage in producing corn. If you can't make the 3 to 1 relationship, soybeans may be your best bet.

2. Increasing Yields: What are the opportunities for increasing your yield of corn and/or soybeans on your farm? Agronomic research data suggests that closer rows (from 38" to 30" to 15" to 7") will result in higher bean yields and leaves more nitrogen in the soil. Have you taken this and other new production technology into consideration?

3. Timeliness: What equipment do you have available, and what is your normal completion date for planting corn and soybeans? Research results indicate that corn yields decrease more rapidly than soybean yields as planting is delayed. If you have enough equipment and labor to complete your planting by May 15, soybeans will usually have difficulty competing with corn - assuming normal price relationships and cultural practices. However, beans will probably be more profitable on acres planted in late May.

4. Livestock Enterprise Considerations: Are you going to expand your livestock enterprise? Increasing the volume of beef and/or pork will require more corn grain and/or corn silage. Unless you are now producing more corn than you feed, a larger livestock enterprise means more corn and less beans.

5. Weed Infestations: Weeds are probably more serious in soybeans than corn. It might be well to consider corn on troublesome acres until the weeds are under contract. This is especially true for new acreage

(purchased, rented, or reclaimed) where past weed control measures are in question.

6. Storage: Are you short on storage and/or drying capacity. Soybeans usually don't require drying and you can store about three acres of soybeans in the same space required for one acre of corn.

7. Double Cropping: What is your opportunity for double cropping wheat and soybeans? Will this be a better alternative than corn? There are reports from producers in southern Ohio of 30 bushel beans after wheat. If you are in a location where you can with some degree of certainty harvest 60 bushels of wheat and 30 bushels of beans per acre you may want to consider this as an alternative to corn.

8. Cost of Production: What are your costs of production? Your costs of producing corn and soybeans are as important to your corn/soybean decision as are the prices you expect to receive. Table 4 provides some guidelines for 1977 costs with a place to estimate your own costs. Remember, the real difference between production costs of corn and soybeans in any given year is largely in the direct cost category. Indirect costs can only change over a period of several years, as you adjust machinery and storage facilities.

Table 4. Estimated Ohio Production Costs
Corn and Soybeans - 1977

Item	Corn			Soybeans		
	Budget #1	Budget #2	Your Farm	Budget #1	Budget #2	Your Farm
Yield/Acre	110	140	_____	35	45	_____
Direct Costs/Acre						
Seed	\$ 12	\$ 14	_____	\$ 10	\$ 11	_____
Fertilizer	33	51	_____	20	25	_____
Chemicals	12	12	_____	14	14	_____
Machine Operation	23	25	_____	12	13	_____
Miscellaneous	11	13	_____	10	12	_____
Interest	4	5	_____	3	3	_____
Total Direct Cost	\$ 95	\$120	_____	\$ 69	\$ 78	_____
Indirect Costs/Acre						
Mach. and Equip.	\$ 31	\$ 32	_____	\$ 25	\$ 25	_____
Grain Storage	15	17	_____	7	8	_____
Tax and Land Maintenance	10	12	_____	10	12	_____
Labor @ \$3.50/hr.	13	14	_____	11	11	_____
Land @ 8%	80	100	_____	80	100	_____
Total Indirect Cost	\$149	\$175	_____	\$133	\$156	_____
Total Cost/Acre	\$244	\$295	_____	\$202	\$234	_____

SUMMARY

It is difficult to assess, on a national scale, what might happen in 1977 with respect to corn/soybean acreage. Farmers in the northern corn belt are likely to reduce their acreage of wheat and plant more soybeans. As more wheat/soybean double cropping is adopted in the southern corn belt wheat and soybean acreage will increase. The farmers in the Mississippi Delta, given the current strength of cotton prices, are likely to reduce soybean acreage

in favor of cotton. The fall 1977 futures prices indicates a shift toward soybeans. Taken together, these factors seem to support a case for more soybeans in 1977. The added acreage should not put undue pressure on bean prices. Soybeans, in all likelihood, will be priced competitively with corn during 1977 market year.

The corn/soybean decision on your farm is more than a question of price, however. Consider your yields, take advantage of yield increasing production practices, equip your farm to plant early, consider double cropping, calculate your costs, and keep livestock, weeds, and storage in mind. Keep in mind also that a mix of corn and soybeans will help reduce your risk associated with a poor crop and/or a low price for corn or soybeans. Security, as well as profit, is an important consideration in this period of high costs and uncertain prices.