FARM BUSINESS MANAGEMENT

FARM ECONOMICS Facts & Opinions

Department of Agricultural and Consumer Economics • College of Agriculture, Consumer and Environmental Sciences
University of Illinois at Urbana-Champaign

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CROP ROTATIONS FOR 2003: MORE WHEAT AND CORN?

During 2002, market prices for corn, soybeans, and wheat have increased dramatically potentially changing relative profits of crops. This paper examines profits for corn, soybeans and wheat using estimated prices for 2003 crops. Calculations show that wheat and corn is more profitable than soybeans. The remainder of this paper details these changes in profitability. Farmers should revisit crop rotation decisions. Planting more corn and more wheat while planting fewer soybeans may be economically advisable. Farmers, however, should not totally rely on averages shown in this paper. Farmers should use their own yields and costs in making crop rotation choices.

Costs and Yields for Corn, Soybeans, and Wheat

Table 1 shows yields and direct costs for corn, soybeans and wheat grown in Illinois. Panel A shows yields and costs for high productivity farmland typical of northern and central Illinois while Panel B shows yields and costs for low productivity farmland more typical of southern Illinois. To grow more corn, many Illinois farmers would have to grow corn on land that grew corn in the previous year. Hence, returns are estimated for "corn following soybeans" and "corn following corn." Panel B also includes yields and direct costs for double crop soybeans.

Table 1. Yields and Direct Costs for Illinois[1].

	Corn Following Soybeans	Corn Following Corn	Soybeans	Wheat	Double Crop Soybeans
Panel A. High productivity farmland.					
Yield (bu. per acre)	160	150	50	75	
Direct costs ($ per acre)	$183	$188	$114	$87	
Panel B. Low productivity farmland.					
Yield (bu. per acre)	140	130	40	60	20
Direct costs ($ per acre)	$171	$176	$109	$77	$51

[1]Costs are taken from *2002 Illinois Crop Budgets* located at:
http://www.farmdoc.uiuc.edu/manage/enterprise_cost/2002_crop_budgets.html

[2] Direct costs include charges for fertilizer, herbicides, insecticides, seed, drying and storage, machinery related items (repairs, fuel, and machine hire), crop insurance, and interest on operating inputs.

Prices and Revenue less Direct Costs

These yields and costs are used to calculate revenue less direct costs under two price scenarios:

1. The 2001 loan rate scenario has prices of $1.95 for corn, $5.45 for soybeans, and $2.60 for wheat. These prices reflect average, Illinois loan rates under the 1996 Farm Bill that were good planning prices from years between 1999 through 2002.

2. The 2003 contract price scenario represents estimated harvest-time prices for 2003 crops. A crop's price equals the respective harvest time futures contract price (December for corn, November for soybeans, and July for wheat) minus the usual basis. Estimates are made using future prices as of September 2002. This scenario use prices of $2.30 for corn, $5.15 for soybeans, and $3.30 for wheat.

Revenue less direct costs, hereafter referred to as return, for these price scenarios are shown in Table 2. For high productivity farmland, soybeans have the highest return under 2001 loan rate prices. Soybeans have a $159 per acre return compared to a $129 return for corn following soybean and a $108 return for wheat. Relative returns under 2003 prices change dramatically. Corn following soybeans has the highest per acre return ($185) followed by wheat ($161). The $144 return for soybeans is the lowest. The soybean return is below the corn following corn return of $157. This suggests that planting more corn and more wheat and less soybeans may be an economical move.

Table 2. Revenue less Direct Costs Under Different Price Scenarios[1].

	2001 Loan Rates[2]	2003 Contract Prices[3]
Panel A. High productivity farmland.		
Corn following soybeans	$129	$185
Corn following corn	105	157
Soybeans	159	144
Wheat alone	108	161
Panel B. Low productivity farmland.		
Corn following soybeans	$102	$151
Corn following corn	78	123
Soybeans	109	97
Wheat alone	79	121
Wheat and double crop soybeans	137	173

[1] Revenue less direct costs calculated using yields and direct costs shown in Table 1.

[2] Prices are $1.95 for corn, $5.45 for soybeans, and $2.60 for wheat.

[3] Prices are $2.30 for corn, $5.15 for soybeans, and $3.30 for wheat.

For low productivity farmland, the $137 return for wheat with double crop soybeans is the highest under 2001 loan rate prices. Soybean return of $109 follows wheat and double crop soybeans. Under 2003 contract prices, wheat and double crop soybeans again has the highest return. Wheat and double crop soybeans has a $173 per acre return, followed by corn following soybeans ($151), corn following corn ($123), wheat ($121), and soybean ($97). Under 2003 contract prices, soybeans are the least profitable alternative.

Summary

In this paper we use yields and costs contained in the 2002 Illinois Crop Budgets to examine the profits of corn, soybeans and wheat. Given current anticipated price for 2003 crops, returns for soybeans are below those for corn and wheat. The above comparisons use average yields. Farmers should use their own yields in making these comparisons.

Issued by: Gary Schnitkey and Dale Lattz, Department of Agricultural and Consumer Economics