

**David Wright, Ph.D.**  
Plant Health Initiative Coordinator

## Planting Fewer Acres of Soybeans in 2004? It May Not be the Right Choice.

Poor soybean yields throughout the central soybean belt coupled with above average corn yields have many producers questioning the value and profitability of the traditional corn - soybean crop rotation. Many producers are contemplating planting fewer acres of soybeans, because it appears corn yield increases have outpaced soybean since 1996. However, those considering switching to a corn-corn-soybean rotation should also consider the reduction in corn yield that can occur when it is not grown in an annual rotation with soybeans.

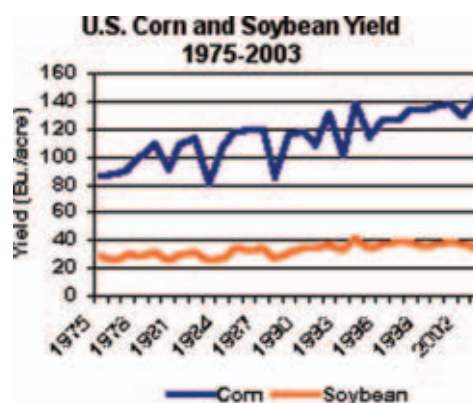
Researchers in several states have been using long-term crop rotation studies to determine the yield of corn (C) and soybeans (S) when grown in continuous corn, C-C-S, and C-S rotations. These data suggest that on average, second-year corn yield will be suppressed about 10 percent or more. This is supported by earlier research that reported a 15 percent yield decline when corn was planted on land where corn was grown the previous year. Research conducted at the University of Wisconsin concluded that second-year corn yielded no differently than continuous corn.

Corn grown in monocultures for two or more years are susceptible to increased levels of soilborne pathogens and root-damaging insects. It is believed that these pathogens reduce root vigor and water and nutrient uptake. However, not all researchers agree on this point. Some have reported that neither foliar pathogens nor soilborne pathogens were determined to be involved in the monoculture yield decline.

Producers anticipating large soybean yield increases from extending the interval between planting soybeans may be disappointed. The data from these trials consistently show a yield increase of only 2 to 3 bu./acre when soybeans are planted following two years of corn.

Soybean producers and researchers do agree that the prevailing practice of annually rotating corn and soybean does not give maximum soybean yields. The practice does

however promote maximum corn yields and with the yield gap between corn and soybean widening, growers should optimize management practices that maximize long-term corn yield.



To maximize soybean yield, growers should optimize variety selection. Work closely with your seed supplier to ensure you are getting the highest yielding variety with the agronomics you need. Be field specific in your variety selection. Test your fields for the presence of the soybean cyst nematode, select varieties with the highest level of resistance and don't forget to include the Rps1-k gene for Phytophthora resistance. These two pathogens consistently rob producers of the most yield.

For more information on maximizing soybean yield, log on to [www.planthealth.info](http://www.planthealth.info) and access the latest information from checkoff-funded research specifically designed to increase soybean yield.

	Years Summarized	Corn Yield			Soybean Yield		
		Bu./acre		%	Bu./acre		%
		C-S	C-C		C-S	1st Year Soybean*	
Iowa	1979-2001	151	129	15%	45	48	6%
Minnesota**	1985-1995	135	120	11%	41	42	2%
New Jersey	2000-2001	163	151	7%	60	62	3%
Wisconsin	1988-2001	218	195	11%	61	64	5%

\* First year soybeans planted following at least two years of corn or other crop.  
\*\* Research conducted at Lamberton, Minnesota.