

Narrow Strip Intercropping

PFI cooperators have continued to work with Iowa State University researchers on the practice of narrow strip intercropping. In narrow strip intercropping, alternating strips of different crops run side by side across the field. In addition to giving erosion control and rotation benefits, the practice can achieve overall yield increases when crops in the borders of the strips use sunlight and moisture in complementary ways. If everything goes right, this overall benefit can amount to a slight loss in soybean yields and a definite increase in corn yields.

Paul and Karen Mugge, of Sutherland, have attempted to compare crops grown in strips to solid blocks of the same crops. Paul's carefully designed trial fell victim to the high winds that cut across northern Iowa in July. His stripping trial became somewhat of a lodging experiment. Nevertheless, he recorded the following yields.

COOPERATOR: PAUL MUGGE			
YIELDS (bu.)			
	CORN	OATS	SOYBEANS
STRIPPED:	69.3	52.5	58.3
BLOCKED:	55.5	55.5	48.0

Interestingly, soybeans appeared to yield as well in strips as they did in solid blocks this year. (The solid block soybean yield is based on only one combine swath, however.)

In strips, corn takes advantage of the border conditions. Yields are typically higher along strip edges than in the interior rows of a strip. However, this year researchers saw something in **Mike Reicherts'** fields that made them wonder if there might be a drawback to the practice of strip cropping. There were telltale signs of rootworm activity in the rows of corn next to what had been last year's corn strips.

TWO FARMERS' CORN YIELDS IN NARROW STRIP INTERCROPPING										
BUSHELS										
(ROW 1 IS FARTHEST FROM LAST YEAR'S CORN ROW)	180	177	171	166	FRANTZEN, 4-37*					
	258	227	209	217	211	227	REICHERTS, 6-30*			
	1	2	3	4	5	6	ROW NUMBER			

While rootworm migration has the potential to eat into the profitability of narrow strip intercropping, Corn yields collected by ISU soil scientist Richard Cruse on two PFI farms are encouraging. Cruse and his colleagues found a tendency for more root damage and less overyielding in the row next to the previous year's corn. However, the yields themselves are not at all bad, as shown in the table.

Cruse's associates are also gathering useful information on the growth of oats on the permanent ridges of these stripping systems. The following oat yields were taken at different locations relative to the ridge.

RIDGE SYSTEM OAT YIELDS — FRANTZEN FARM	
YIELD (BU.)	LOCATION
58	UNTRACKED VALLEY
67	SHOULDER OF RIDGE
95	RIDGE TOP
37	WHEEL-TRACKED VALLEY

The yields shown for the ridge-top location are high, especially for a poor oat year. The "weak link" is clearly the valleys between the ridges, and especially the wheel-tracked valleys. If farmers and researchers could discover how to improve the growing environment in these zones, oat yields could be increased.