

Narrow Strip Intercropping

In 1992 PFI cooperators received support from the Leopold Center for Sustainable Agriculture to document crop growth and economics in narrow strip intercropping. In narrow strip intercropping, alternating strips of different crops run side by side across the field. In addition to erosion control and other benefits, the practice can achieve overall yield increases when crops on the strip borders use sunlight and moisture in complementary ways.

In two trials, winter cover crops competed severely with corn in the narrow strips ([Table 8](#)). However, two cooperators saw corn yields increased considerably in strips - 40 bushels for **Doug Alert**, New Hampton, and approximately 20 bushels for **Jeff Olson**. It was the first year for strips on the site for Alert. It will be interesting to see if that strip bonus is maintained in future years or if disease and pests build up. PFI cooperators are working with ISU researcher Richard Cruse to address those questions.

Probably the most elaborate narrow strip plot design is on the farm of **Paul and Karen Mugge**, Sutherland. They are comparing three crop rotations in strips, with blocks of single crops in the field for comparison. Paul harvested a modest four bushel corn increase in strips compared to field blocks in 1992. Surprisingly, soybeans in the strips yielded seven bushels better than the soybeans in the solid blocks. In the three-crop strips, Mugge observes, the soybeans can "lean over" after oats are removed from the field, and this gives them access to more sunlight.

TABLE 8. NARROW STRIP INTERCROPPING TRIALS

COOPERATOR	ROW DIRECTION	NARROW STRIPS OR WHOLE FIELD BLOCKS	YIELDS (bu.)			COMMENTS
			CORN	SOY-BEANS	OATS	
ALERT	N-S	STRIPPED:	227	45	80	ESTABLISHMENT YEAR FOR THE SITE
		BLOCKED:	187	—	—	
DAVIDSON	NW-SE	STRIPPED:	92.6	39.1	—	ESTABLISHMENT YEAR. STRIPS HAD VETCH COMPETEING
		BLOCKED:	91.1	39.1	—	
FRANTZEN	N-S	STRIPPED:	E: 161.2 M: 157.2 W: 143.0	47	75.2	WORKED WITH R.M. CRUSE TO MEASURE CORN YIELD BY ROW LOCATION
		BLOCKED:		47	70.0	
MUGGE	E-W	STRIPPED:	179.0	69.0	100.0	
		BLOCKED:	175.0	62.0	105.0	
OLSON	NW-SE	STRIPPED:	198.9	60	—	
		BLOCKED:	173.9	59	—	
OLSON	E-W	STRIPPED:	167.6	—	NONE	
		BLOCKED:	149.2	—	NONE	
THOMPSON	E-W	STRIPPED:	137.7	48.2	—	STRIPS HAD COVER CROP COMPETING
		BLOCKED:	177.8	52.2	—	