Strip Intercropping

A chief reason that producers discontinue strip intercropping is that they no longer experience the system's yield benefits. That can happen when weeds, insects, or both build up to take advantage of the long borders between crops. In 1997, PFI cooperators Jeff and Gayle Olson successfully countered common stalkborer in their intercropped corn by using a Bt hybrid (The Practical Farmer, vol. 13, #3, Fall, 1998). ISU agronomist Rick Cruse and USDA-ARS entomologist Mike Ellsbury, working on the farm of **Paul and Karen Mugge**, found that rootworm beetle larvae can migrate underground from last year's corn strip to this year's corn in the neighboring strip (The Practical Farmer, vol 11,#4, Winter, 1996/97). Corn rootworm attacks the border rows of the new corn strip, reducing the harvest in the exact location where yield potential is greatest.

Table 12. Strip Intercropping Row Yields and Stands

EAST-WEST STRIPS	MUGGE	
ROW	YIELD (BU/ACRE)	STAND (PLANTS/ ACRE)
1 (S)	223.2	29,185
2	188.8	26,463
3	194.5	28,968
4	155.5	24,067
5	177.5	26,136
6 (N)	164.9	21,671
STRIP AVG.:	184.1	26,082
SOYBEANS:	66.0	
OATS:	84.9	

In 1998, Mugge's strips were redesigned to see if the rootworm can be fooled. Instead of the corn "walking" over one strip each year, some of the corn strips will "jump" a strip-and-a-half. The 1998 year was largely used to establish the new trial. In 1999, the strips will begin to jump, and we will see how effective the method is. By plowing up the entire field to reestablish the trial, Paul may have temporarily alleviated both the rootworm problem and a grasshopper infestation that had recently plagued the strips. Table 12 shows that corn at the southern edge of the strips (row 1) yielded well over 200 bushels per acre. Stands and yields in row 6, on the north side of the strips, were reduced from cultivator damage. Paul also noted that in 1998 the soybean yields in the strips were the best on the farm.

Table 13. Rotation Effect on Corn in Strips, Mugge Farm

PREVIOUS CROP	YIELD		STAND	
OATS	200.59	a	27,733	a
SOYBEANS	176.53	b	25,894	a
CORN	147.47	c	20,037	b

Since plots were reestablished over the previous trial, not all of the corn followed the same 1997 crop. Table 13 shows that 1998 corn yields and stands were strongly affected by the crop that preceded the corn. Stand was also related to previous crop.