Weed Trials

Since 1987, PFI cooperators have conducted trials of ridge-till with and without herbicides. This continuing work has helped raise awareness of the potential of ridge tillage in managing weeds without herbicides. For the past two years, ISU botanist Thomas Jurik has intensively studied this practice on four PFI farms, with support from the Leopold Center for Sustainable Agriculture. This year a third treatment was added to Jurik's trials that combines mechanical and chemical control. See Table

4 corn trials, 7 soybean trials. All trials ridge-till
Fig. 4 PFI trials with and without herbicides in 1990

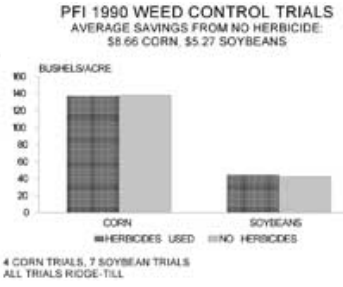

Figure 4 shows 1990 yields from four trials in corn and seven with soybeans. Because of the weather in 1990, farmers were not able to rotary hoe or cultivate in a timely manner, and many operations were not carried out at all. Postemergence herbicides are an option, and **Mark Mays** may have considered them in the trial he reported. But the figure and the table show that overall yields were not adversely affected in these trials.

In addition to yields, weeds were counted in the soybean and most of the corn trials. For the seven soybean trials shown in the figure, the average broadleafed weed count was 300 per acre where herbicide was used and 306 per acre where alternative control was practiced. These averages are somewhat weighted by the fields with the higher weed numbers. Another way of looking at it is that there was an average of 59% more broadleafed weeds in the field strips without herbicide. This is similar to PFI results previous years.

Besides these "traditional" weed trials, cooperators in 1990 found different questions to ask about weeds. **Dick Thompson** doubled his weed population by precultivating the valleys between the ridges. **Jeff Olson** looked for effects on weed numbers that might be caused by the 28% N banded as a carrier.

Rod Treimer kept track of weed numbers in comparing a ridge-till planting system with one of no-till planting on ridges. Weed numbers were similar, although the preemergence burndown was expensive. Dick Thompson, on the other hand, significantly reduced his weed numbers where he double-hoed on the second rotary hoeing. Thompson also made a weed study of a fertilizer study trial. The fertilizer reduced soybean stand, leading to a foxtail infestation.

Two trials examined herbicide "extenders." **Jerry Carlson** used a high frequency sound generator with the aim of getting more uptake of a half-rate of Poast®. Grass was significantly reduced in the sound treatment strips in the field with high grass pressure. **Tom Frantzen** used an adjuvant with a three-fourths rate of Lasso® for equivalent weed control. However, he was so successful in controlling weeds in the preplant-only strips that this treatment was the most profitable of all.