

## Weed Management Trials

You can have the soil fertility just right, the right variety and perfect planting conditions, but the weeds can still sneak up and bite you. Lose a few plants to an early hailstorm or to greensnap - and here come the weeds to use the available light! Sit and watch the rain the whole month of June, and you know you're going to have some problems. It all happened in 1998.

PFI founder Dick Thompson at a field day



There are all kinds of ways to approach weed management, and three cooperators examined options that "fit" on their farms. At the **New Melleray Abbey**, Peosta, farm manager **Joe Fitzgerald** put their flame cultivator to the test in corn. Flame weeders use jets from a propane tank to "burn down" weeds much as do burndown herbicides, but without the use of synthetic chemicals. Flamers are generally most effective with weeds whose leaves are thin and tender and whose growing points are above the soil surface.

Both treatments received a rotary hoeing and two cultivations. Half of the plot strips also received a pass with the flame cultivator. Because there were only three replications in the trial, it is not possible to separate a flaming effect from the natural variability of the field ([Table 9](#)). The nonsignificant yield advantage seen for flamed corn is consistent with better control of weed pressure, although there was no count of weeds in the trial. The results are encouraging if inconclusive, and the Abbey will likely repeat the trial.

**Richard and Sharon Thompson**, Boone, tweaked their ridge tillage weed management, examining the effects of throwing up an extra high ridge with an additional (third) cultivation of soybeans. The Thompsons do not ordinarily use herbicides and rely on cultural controls and mechanical removal of weeds. Throwing up a high ridge of soil around the base of the crop will smother smaller in-row weeds - the kind you have when a wet spring hinders rotary hoeing. In the Thompson trial ([Table 9](#)), the extra ridging operation did significantly reduce broadleaf weed numbers. Unfortunately, there was also a small but statistically significant yield reduction. The third cultivation may have pruned some soybean roots. Overall, in this trial weed numbers were probably below the threshold at which yields were affected. The results suggest that if weed pressure were heavier, a third cultivation could do more good than harm.

| <b>Table 9. Weed Management Trials</b> |  | <b>Weed Management Trials</b> |              |                         |                                  |                       |                        |              |                         |  |                       |              |             |                       |                           |  |
|--|--|-------------------------------|--------------|-------------------------|----------------------------------|-----------------------|------------------------|--------------|-------------------------|--|-----------------------|--------------|-------------|-----------------------|---------------------------|--|
| COOPER-<br>ATOR                        | LOW RATE TREATMENT                                 |                               |              |                         |                                  | HIGH RATE TRT         | HIGH RATE TREATMENT    |              |                         |  | TREATMENT DIFFERENCES |              |             |                       |                           | COMMENTS   |
|  | DESCRIPTION  | TREAT-<br>MENT<br>COST        | YIELD        | BROADLEAF<br>WEEDS/ACRE | OTHER WEED<br>INFORMATION        | DESCRIPTION           | TREAT-<br>MENT<br>COST | YIELD        | BROADLEAF<br>WEEDS/ACRE | OTHER<br>WEED<br>INFORMA-<br>TION            | YIEL-<br>D<br>DIFF.   | YLD.<br>SIG. | YLD.<br>LSD | BRDL.<br>WEED<br>SIG. | LOW<br>RATE \$<br>BENEFIT |  |
| <b>NEW<br/>MELLERAY</b>                | <b>FLAME<br/>WEEDER + 2<br/>CULTIVA-<br/>TIONS</b> | <b>\$19.29</b>                | <b>155.4</b> | —                       |                                  | <b>2 CULTIVATIONS</b> | <b>\$9.04</b>          | <b>146.5</b> | —                       |  | <b>8.9</b>            | <b>NS</b>    | <b>22.7</b> | —                     | <b>-\$10.25</b>           | <b>BOTH TRTS<br/>HAD 1 HOEING<br/>AND 2<br/>CULTIVATIONS</b> |
|  |  |                               |              |                         |                                  |                       |                        |              |                         |  |                       |              |             |                       |                           |  |
| <b>THOMPSON</b>                        | <b>LOW RIDGE</b>                                   | <b>\$0.00</b>                 | <b>59.2</b>  | <b>320</b>              | <b>TWO JULY<br/>CULTIVATIONS</b> | <b>HIGH RIDGE</b>     | <b>\$4.74</b>          | <b>56.1</b>  | <b>205</b>              | <b>THREE<br/>JULY<br/>CULTIVA-<br/>TIONS</b> | <b>3.1</b>            | <b>*</b>     | <b>2.2</b>  | <b>*</b>              | <b>\$10.96</b>            | <b>EXTRA<br/>RIDGING<br/>REDUCED<br/>WEEDS AND<br/>YIELD</b> |