Penn Jersey Tillage Conference

(Continued from Page A1)

In the last three years, Rodale researchers have focused on no-till planting, ridge tilling, and relay cropping. "All three systems rely on diverse crop rotation, cover crops for weed control and nitrogen fertility, and relay cropping, including interseeding and overseeding for weed control," Peters said.

One type of no-till planting that they explored is no-till-mow-kill. In this system, a winter annual crop such as rye, wheat, or hairy vetch is planted in the fall to control weeds and hold soil. During the spring, the cover crops were flail chopped after blooming and corn or soybeans were no-till planted into the residue. The mowed cover crop provides a thick mulch that prevents weed growth. At the same time, planting the cover crop provided nitrogen for the corn.

The benefits of this planting system include no pre-plant tillage, a residue left on the surface, nitrogen in the soil, water conservation once the cover crop is mowed, and weed control from the mulch. Some of the disadvantages include a later planting date if the crop is mowed after blooming and the nitrogen in the soil will be tied up if a non-legumous cover crop is used.

Ridge tilling was another planting system Rodale researchers explored. Originally developed in the 1950s, ridge tilling involves using a planter with attachments that scrape the top four to six inches off of a ridge that has been formed during the previous year during weed cultivating. The disks also scrape off any weeds on the sides of the ridges. Weeds, cover crops, and manure lays between the row furrows. As the growing season continues, a rotary hoe or multi-purpose type cultivator can be used for early weed control.

Researchers recently experimented with applying herbicides in a ridge-till system. They compared broadcast and banded herbicide usage on soybeans. "No significant differences in yield were found in 1987 or 1988, so money spent on herbicides could have been saved if this were a farm," Janke commented.

Currently Rodale researchers are attempting to incorporate legumes as a winter crop into the ridge tillage system so that the nitrogen benefits from legumes will be available to spring crops.

The advantages of tidge tilling, according to reasearchers, include leaving residue on or near the surface, incorporating animal manures for nutrients, cultivating weeds without herbicides, and doing without pre-plant tillage.

However, ridge-till systems require farmers to modify their existing equipment or purchase new machinery and take the time to cultivate at least once. In addition, the system isn't ideally suited to terrains with steep slopes, stony ground, or terraces.

Relay cropping is a third low-imput system that doesn't require herbicides. Relay cropping involves planting one crop in with another, such as soybeans into small grains for instance.

Rodale researchers have tried a number of combinations. "We find that under growing conditions of southeast Pennsylvania the best small grains to use are winter wheat and spring barley," said Janke. "If winter barley is used, it is already tillering at the time of soybeans planting, and the drill causes significant yield reductions in the barley. If soybeans are drilled into oats, the soybeans are suppressed since the oats are harvested about two weeks later than winter wheat or spring barley."

Researchers also learned that top dressing with nitrogen on wheat increases wheat yields but lowers soybean yields.

Timing is essential in relay cropping. The ideal system, according to Janke, is a fall or early-spring sown small grain that is still in the tillering stage in early to mid May when soybeans will be planted.

Tillage methods varied according to soil type: silt loam soils required a conventional grain drill with double disk openers and in shaley soils a no-till drill was used to get better seed incorporation.

"A full-season soybean was used because it is important that it is not flowering at the time of small grain harvest," Janke emphasized. "Small grains are harvested in early July, and we often end up clipping the top leaf or two of the soybeans. This is not a problem if the beans are not flowering yet, and may stimulate branching."

The 1986 relay crop planted at Rodale Research Center yielded more soybeans than a conventional soybean planting that received herbicides. However, in 1987, the reverse occurred, but an additional 32 bushels of wheat was harvested. "Depending on the relative prices of wheat and soybeans at the time of sale, the relay crop system compares favorably to the monoculture system in economic terms," Janke reported.

The benefits of relay cropping includes two cash/cover crops instead of one, weed control without herbicides or cultivation, better yields than double-cropped soybeans, and reduced tillage for the second crop. Relay cropping won't work, however, if there isn't enough moisture and it won't work on corn. Trade-offs for relay cropping include not being able to bale small-grain straw and the inability to maximize yield of both crops.

Janke and Peters recommended to farmers wishing to try low-input farming to start small. "Start with one section or a few fields," Janke said. They advised farmers to see what works for them before risking their entire crop.

PFA Asks Milk Price Increase

CAMP HILL — At a hearing today in Harrisburg, PFA called on the Milk Marketing Board to include interest on equity capital and a charge for management in calculating dairymen's costs of production. Under law, the board is authorized to set milk prices for dairymen at a level sufficient to recover their costs of production plus earn a reasonable return.

PFA also asked that dairymen's costs of production including management and interest on equity capital be re-evaluated annually in all six PA Milk Marketing Board areas. Area 6 includes Warren, McKean, Forest, Elk, Cameron, most of Clarion, Jefferson, Clearfield, Centre, Indiana, Cambria, Blair, Huntingdon, Mifflin, eastern Westmoreland, Somerset, and Bedford counties.

PFA is a voluntary, general farm organization representing over 23,600 families including approximately 12,000 dairymen.