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RETURNING PIK LAND TO GRAIN PRODUCTION

W. W. Frye

With the end of the 1983 PIK program, much of the acreage that was in the program will be returned to grain production. Farmers who planted cover crops on their PIK fields in 1983 and who plan to return them to grain production in 1984 will be faced with deciding whether to use no-tillage or conventional tillage. The cover crops will provide mulch for no-tillage crops which may be an asset but can contribute to problems as well. Also, weed problems may be worse on PIK land and more difficult to control with no-tillage than with conventional tillage. The decision on what tillage system to use should be made on the basis of site-specific conditions of each field. Some thoughts to consider are discussed below.

Advantages of Mulch

A good mulch from a cover crop results in (1) more effective control of soil erosion, (2) less runoff and more infiltration water, (3) lower soil water evaporation, (4) more efficient use of water by crops, and (5) better weed control. If the cover crop was a legume, it will provide the additional benefit of adding nitrogen to the soil.

Disadvantages of a Mulch

Soil temperature is often 8 to 10°F cooler under a mulch with no-tillage than under conventional tillage. On wet soils that tend to remain cold until late in the spring, this could result in delayed planting, slow germination, slow growth, and reduced yields. The heavier the mulch, the greater these problems tend to be. If the soil is covered by an extremely heavy mulch, the fluted coulters of the no-tillage planter may press the residue into the soil without cutting it, thus preventing seed-soil contact necessary for seed germination. Dead plant materials are much more troublesome in that regard than is live vegetation. This problem can usually be avoided by placing straight, cutting coulters ahead of the fluted coulters.

Fertility

Soil samples should be taken, and soil test recommendations for phosphorus, potassium, and lime should be followed. Unless the cover crop was a legume, nitrogen fertilizer recommendations for corn on PIK land probably should be the same as for continuous corn. Estimates of the amount of nitrogen contributed by legume cover crops, such as alfalfa, red clover, or hairy vetch, grown for one season varies considerably, but the University of Kentucky recommends decreasing the fertilizer nitrogen by about 50 lb N per acre next

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spring from that normally applied to fields in continuous corn. Most of the benefit from the nitrogen will be seen during the 1984 season, but some will carry over into subsequent seasons. Soybeans would not be expected to respond to nitrogen added to the soil by legume cover crops.

The University of Kentucky recommends 25 lb N per acre more fertilizer nitrogen for no-tillage corn than conventional tillage, with the expectation that high yields will be produced because of more efficient use of soil water in no-tillage.

Weed Control Problems in PIK Fields

Weed infestation of some PIK fields is likely to be unusually heavy in 1984, because of lack of control in 1983 allowing many weeds to produce seeds. Weeds may be the greatest single problem on PIK land for no-tillage farmers. Extreme infestations of certain kinds of weeds in 1983 may dictate the cropping system and tillage method that should be used in 1984. If extreme problems with broadleaf weeds are expected, corn instead of soybeans should be considered. Conversely, if the problem weeds are expected to be grasses, soybeans may be the better choice. Unless weed population is expected to be extremely high, control measures normally used for no-tillage should be successful on PIK land in no-tillage, but farmers should use full rates as indicated on the labels of recommended herbicides to achieve control. As usual, no-tillage corn should not be planted in fields heavily infested with johnsongrass.

Certain cover crops that were allowed to produce seeds in 1983 may return to cause problems with the 1984 crop. Hairy vetch seeds in the soil may result in voluntary vetch in fields planted to wheat this fall, but it can be controlled by herbicides next spring. Alfalfa and clovers should be fairly easily killed in the spring to provide a mulch for no-tillage if herbicides are applied to actively growing plants. Farmers should be prepared to apply a postemergence treatment to corn if a significant number of alfalfa or perennial clover plants escape the preemergence treatment. Small grains that went to seed on PIK land in 1983 should present no particular problems in 1984.

Summary

In returning PIK acres to grain production, farmers are presented with challenging opportunities for 1984. They may have the best opportunity ever to use no-tillage and take advantage of the benefits derived from the mulch formed by a killed cover crop; but there are certain disadvantages and potential problems with no-tillage on PIK land that farmers should be prepared to manage. The two most important ones are cooler soil temperatures under a mulch that could delay corn planting and the potential for heavy weed infestations.

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