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Returning CRP Land to Grain Production

W.W. Frye and L.W. Murdock

CRP Land in Kentucky

Land that was contracted into the Conservation Reserve Program (CRP) was committed to the program for 10 years. The first contracts expire in September 1995, but USDA has already authorized a one-year extension of those contracts. Unless Congress extends the program in the 1995 Farm Bill, the contracts will begin expiring on September 30, 1996, as the 10-year period elapses, and continuing until all of the acres that were set aside in the program are released. In Kentucky, about 440,000 acres were contracted in the program from 1986 to 1992. Most of the land is highly erodible, and farmers were required to establish and maintain a vegetative cover to protect the soil from erosion. Grasses or grass-legume mixtures were established on about 434,000 acres of this land. The rest was planted to trees or wildlife habitat. A 1993 survey by the Soil and Water Conservation Society indicated that, without extension of the CRP and assuming current commodity prices, 63% of U.

S. farmers would return their land to row crop production the first year after their contracts expire. About 23% would continue in grassland for hay or grazing. In the USDA Appalachian region where Kentucky is listed, those estimates are 48% returned to row crops, 23% left in grass, and 13% left in trees. Much of Kentucky, especially western Kentucky, will probably respond more like the Corn Belt region where 73% of CRP acres are expected to be cropped and only 16% will be kept in grass. The crops will be mostly corn and soybeans.

Potential for No-tillage on CRP Land

One of the first decisions farmers who return CRP fields to grain production will face is what tillage system to use. Since most of this land is highly erodible, USDA-NRCS conservation plans will largely determine this. No-tillage continues to grow in popularity with U. S. farmers, and has increased nationwide by 25 million acres since 1989, according to the Conservation Technology Information

Center. The acreage increased from about 35 million to 39 million in 1994. Farmers will have an excellent opportunity to use no-tillage when they return CRP fields to grain production. The current vegetative cover and accumulated residue should provide excellent mulch for no-tillage crops. This mulch is normally considered an asset, but it can contribute to problems as well. Also, weed problems are likely to be greater than normal in CRP land and may be worse with no-tillage than with conventional tillage. Some factors to consider about what tillage system to use are discussed below.

Advantages of Plant Residue

A good mulch of plant residues left on the soil surface results in (1) more effective control of soil erosion, (2) less runoff and more infiltration of water, (3) lower soil water evaporation, and (4) more efficient use of water by crops. If the residue is from legumes, it will provide more N during decomposition than if from nonlegumes.

Disadvantages of Plant Residue

Soil temperature is often 8 to 10°F cooler under no-tillage with mulch than under moldboard-plow tillage. On wet soils, which are likely to remain cold until late in the spring, this can cause delayed planting, slow germination, slow growth, and reduced yields. High activities of meadow voles or other rodents can reduce crop stands. The heavier the residue, the greater these problems tend to be. If the soil is covered by an extremely heavy residue, 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. This problem can usually be avoided by placing straight, cutting coulters ahead of the fluted coulters or by the use of row cleaners, which clear the residue from the paths of the planters. Clearing the residues from the rows has the added benefit of allowing the soil in the rows to warm up faster, which facilitates better seed germination. Other methods of reducing heavy residues and rodent populations are close mowing and early application of a contact herbicide for burndown or an early preplant herbicide program.

Fertility

In most cases, the vegetative cover will have resulted in a noticeable increase in soil organic matter. As organic matter decomposes, it will provide some nutrients to the crop. Soil samples should be taken and soil test fertilizer and lime recommendations followed. The University of Kentucky recommends decreasing the fertilizer N by 50 lb. N per acre on fields coming out of a good sod, as compared to that normally applied to

fields in continuous corn. Although most of the benefit from the N that has built up will be seen the first season, some will carry over into subsequent seasons. To obtain the greatest benefits from the accumulated N in the CRP land, a nonleguminous crop, such as corn, should be used as the first crop. Soybeans, a legume, would not be expected to respond to the N. More of the accumulated N would be released under moldboard-plow tillage than under no-tillage; however, soil erosion would be accelerated. Furthermore, the N released under moldboard-plow tillage would be at the expense of rapid decomposition of much of the built-up soil organic matter. A sod cycles plant nutrients in the soil, removing them from the rooting zone and returning and storing them in the surface soil and organic matter. Both P and K will likely have increased substantially near the soil surface during the 10 years. Soil testing should be done to obtain maximum benefits from the accumulated nutrients and to use fertilizers most efficiently. The soil should be sampled from 0 to 4 inches depth for no-tillage.

Weed Control

Weed infestations of some CRP fields is likely to be unusually heavy, especially the first year back in crop production. Extreme infestations of certain kinds of weeds may dictate the cropping system and tillage method that should be used. 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 the weed population is expected to be extremely high or consist of hard-to-control perennial species, control measures normally used for no-

tillage should be successful on CRP land, but use of no-tillage might not be advisable in the presence of species that are very difficult to control with herbicides. Herbicide programs that allow rescue tactics should be considered. Crop rotations in subsequent years will also assist in weed control.

Insect Control

Many CRP fields are ideal habitats for wireworms and white grubs. Because economic infestations of these insects is difficult to determine until the damage is done, a routine application of a recommended insecticide may be desirable.

Summary

In returning CRP land to grain production, farmers are presented with challenging opportunities. They may have the best opportunity ever to use no-tillage and take advantage of the benefits derived from the mulch formed by the killed vegetative cover and "cash in" the value of soil organic matter and plant nutrients, particularly N, accumulated over the past 10 years. There are, however, certain potential problems with no-tillage on CRP land that farmers should be prepared to manage. The most important ones are cooler soil temperatures that could delay corn planting; the potential for heavy weed, wireworm, and white grub infestations; and the likelihood of heavy rodent damage to stands, all of which can be adequately managed. The use of no-tillage is an opportunity that farmers should not pass up when bringing CRP land back into grain crop production.


Extension Soils Specialist



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