Field Preparation for Pasture Renovation

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Grassland renovation is the improvement of pasture and hay fields by partial destruction of the sod, plus liming, fertilizing, and seeding as may be required to establish or re-establish desirable forage plants without an intervening crop. In Kentucky, this improvement has been primarily through the seeding of legumes such as clovers and alfalfa into grass sods.

Since liming and fertilizing are essential steps in pasture renovation the FIRST step is to have your soil tested to determine how much lime and plant nutrients to apply. Seedbed preparation will range from none to complete disturbance of the existing sod depending on the legumes to be seeded and the present vegetative cover.

Conventional Renovation

It is generally recommended that 80-100 percent of the sod be disturbed for alfalfa while 40 to 60 percent is adequate for establishing clovers. The field to be renovated should be mowed or grazed to a height of 2 to 3 inches prior to tillage.

The old sod can be renovated with a disk or field cultivator or by shallow plowing. If the field is infested with brush, briars, etc., a bush and bog harrow may be the best implement to use. Any implement which will work up the top three to four inches of soil will be satisfactory. However, if erosion is a problem the disk should be used because it leaves more plant residues near the surface to protect against erosion and to aid in seedling emergence.

In 1955, Dr. W. C. Templeton, Jr. and Dr. T. H. Taylor selected an extremely dense, seven-year-old tall fescue sod in Christian County, Kentucky as an experimental site to study the effects of tillage on legume establishment. Several legumes were planted with tillage intensities ranging from no tillage to a plowed and prepared seedbed. At lower tillage intensities, the grass component tended to be higher than the legume component and the plowed plots were extremely weedy. Disking moderately provided adequate sod suppression for the establishment of all legume species.
Sod Seeding

Machines have been developed that will precisely place seed in contact with soil in an established sod. The placement of fertilizer in the soil near the seed may help young seedlings more effectively compete with existing vegetation during the establishment period. Some other advantages of machine seeding are: (1) once-over operation for seeding without cultivations, (2) seeds up to 5 acres per hour, (3) good performance on uneven terrain, (4) suitable for use on stony ground, (5) better germination, (6) minimum soil disturbance for weed-free growth, (7) a more accurate seed metering mechanism, (8) easier to calibrate, (9) requires less seed, time, and labor and, (10) requires less fuel. These machines are available for rent or hire in several areas throughout Kentucky if the acreage to be renovated is too small to justify purchasing one. County Extension Agents and farm supply dealers should know of any custom operators in your area.

Renovation with Herbicides

In some sod seeding situations, especially where rocks may be brought to the surface by cultivation, sod suppression with herbicides may be desirable. Only paraquat is presently cleared for renovation. The herbicide can be applied in bands to kill about half of the grass stand or it can be used in combination with power tillage or sod seeding machines. In all cases READ AND HEED THE LABEL before renovating with herbicides.

Does Renovation Pay?

In one test 3 pounds of red clover seed per acre resulted in as much total nitrogen removal in the establishment year forage as did 200 lbs. of nitrogen per acre applied on either bluegrass or fescue. Also animal performance is better if legumes make up 40 to 50 percent of the stand. Reduced nitrogen costs and higher animal gains should make renovation profitable.