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AUTUMN MANAGEMENT OF GRASS SODS FOR OVERSEEDING CLOVERS AND RYEGRASS

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Background. Warm-season perennial grass pastures may be overseeded with clovers and ryegrass in autumn to provide a high quality forage when warm-season grasses are not growing. Time of planting, warm-season grass competition, and planting method influence cool-season forage production and its distribution. Cost of seed and fertilizer can make winter pasture an expensive option. Management practices should be used which enhance forage growth. Influence of planting date, warm-season grass suppression, and planting method on winter pasture production will be discussed.

Current Information. Hot summer temperatures retard germination and seedling survival and cold winter temperatures limit the growth of clovers and ryegrass. This leaves a window from mid-September to late November for planting winter pastures. Planting in late September may be followed by periods of high temperature and lack of rainfall which could kill young seedlings. Risk in losing a stand is reduced as planting is delayed and as temperatures drop. Planting in late fall may result in weak stands during the winter because the cooler temperatures slow seed germination and seedling growth and establishment. These weak stands are less productive in the spring than earlier plantings because the seedlings are smaller with less leaf area. As planting date is delayed to reduce risk of stand failure, potential forage production decreases.

Growing seasons of warm-season perennial grasses and cool-season forages overlap in autumn until the first killing frost. During this time they are competing against each other for light, moisture, and nutrients. The emerging clover and ryegrass seedlings are at a distinct disadvantage in competing with a well established perennial grass. Any management practice which restricts summer grass growth will usually enhance ryegrass and clover establishment and growth.

Height of the summer grass when the overseeded forages are emerging has been shown to be the most limiting factor for successful establishment. The lack of light reaching the soil surface causes the seedlings to die or be very weak and spindly. Grazing the pasture short with dry cows at a heavy stocking rate is the most economical way to reduce grass competition. Heavy grazing pressure for longer than about 6 weeks will cause the grass to form a tight, dense sod which can also restrict seedling emergence.

Cutting and removing the grass for hay is another alternative. This method results in a more open type sod and allows better seed placement. Livestock would have to be removed 4 to 6 weeks before the desired cutting date to allow accumulation of grass to justify a hay harvest. Limitations to this method are: (1) the hay crop may not be cut at the proper time because of poor weather conditions; (2) grass grown during August and early September is of low to moderate quality; and (3) the grass will continue to grow after the hay cutting, and compete with emerging clover seedlings. The pasture can be mowed if there is insufficient grass for a hay harvest. However, if the grass is thick, the mowed grass will shade the ground and smother any emerging seedlings.

A light disking of the grass sod immediately before planting is the most widely used method for reducing summer grass competition in East Texas. It also provides some loose soil for covering the seed. The disadvantage of disking is that it may slow summer grass recovery in May and June after the winter forages have died.

Placement of clover and ryegrass seed in the grass sod has a major influence on the percentage of seed which result in established plants. Ryegrass and small-seeded clovers such as arrowleaf will germinate on the soil surface. Cloudy and cool weather after germination improve the chances for the root to enter the soil and draw upon soil moisture. Hot, dry weather after germination will kill the young seedling before it becomes established. Placing the seed in the soil at 1/4 to 1/2 inch depths puts it in a more favorable environment for successful establishment. The young root can go deeper, quicker which improves drought tolerance.

Broadcasting the seed on top of the grass sod usually results in the smallest percentage of seeds developing into plants. Some of the seeds are caught in the grass sod and never reach the soil surface. Going over the pasture with some type of drag will help shake the seed to the soil. Using a pasture drag behind the planter will also help cover the seed. Planting seed with a drill does the best job of seed placement in the soil. The same amount of forage can be produced by drilling 25 lb/acre of ryegrass as broadcasting 30 to 40 lb/acre on a grass sod.

Recommendation. Optimum temperatures for overseeding warm-season perennial grasses with clover and ryegrass occur in October. The summer grass sod should be grazed or mowed short (1 to 2 inches) before planting. Disking the sod lightly will also reduce competition to emerging seedlings. Drilling the seed will result in better stands than broadcasting at the same seeding rate.