

## PASTURE MANAGEMENT: EQUIPMENT FOR ESTABLISHING AND MAINTAINING PASTURES

### INTRODUCTION

Pasture establishment and maintenance require a lower investment in equipment than row crops such as corn, soybeans and small grains, primarily because livestock do the harvesting of the forage. Since the equipment is not used as intensively, purchasing used equipment instead of new can affect a cost savings.

Some small acreage producers elect to hire custom operators to plant or renovate their pastures. Because of the infrequent use of tillage and planting equipment for pastures, it is often difficult to justify the expense

of owning equipment that will only be used every two or three years. Some farm machinery dealers and local soil conservation districts will rent or lease pasture planting equipment.

### SIZING TRACTORS TO YOUR FARM NEEDS

With any type of farming system, it is important to have adequate tractor power to pull the various pieces of equipment.

All equipment used on the farm have certain tractor horsepower requirements. It is important to decide what piece of

equipment you  
have or will  
purchase



that will have the largest horsepower requirement and exactly what that requirement is before purchasing a tractor.

For smaller farms, tractors in the 35 to 70 horsepower range will meet most implement requirements. Larger farms should consider tractors in the 50 to 100 horsepower range.

Pastures in the mid-Atlantic region may have steep slopes, therefore only wide-fronted tractors with rollover protection should be purchased. Narrow-fronted or tricycle tractors are more prone to rolling over and injuring the driver.

For a more detailed discussion of purchasing used equipment for the farm, refer to publication NRAES 25 *Used Farm Equipment*, which can be purchased through your county Extension office.

Following is a description of basic farm implements used in establishing and maintaining pastures.

## EQUIPMENT FOR ESTABLISHING AND RENOVATING PASTURES

### No-tillage Equipment

No-till drills are designed to plant seed in soil that has not been disturbed or cultivated. No-till planting conserves soil moisture, leaves stones below the soil sur-



face, and lessens the potential for soil erosion, especially on those fields which are steep. No-till drills have a single disc which cuts a slit in the ground. This single disc is followed by a pair of discs arranged in a V formation which widen the slit for the seed to drop into. Following the double disc opener and seed tube is a press wheel which applies pressure to close the slit in the ground, compressing the soil against the newly planted seed.

The use of no-till drills generally requires the use of a “knockdown” herbicide to eliminate existing weed and plant competition which will allow the newly planted seeds to grow unencumbered.

There are many brands of no-till drills manufactured for establishing or renovating pastures. Generally these drills range in planting width from 7 feet to 16 feet. The size of the drill determines the horsepower requirement of the tractor needed to pull it.

Some drills are manufactured exclusively for planting forage seeds. Other drills, built for small grain crops and soybeans, can be equipped with a small seed box or grassland attachment for planting forages.

### Conventional Tillage Equipment

Conventional tillage is the practice of mechanically preparing the soil surface in a way that loosens the soil and kills existing vegetation so this vegetation will not compete with the newly planted forage seeds.

Conventionally tilled fields have the highest risk of soil erosion that can produce gullies and remove valuable topsoil from the field. Conventional tillage should never be used in fields that have greater than a 12-percent slope. If you are unsure of the slope of your farm fields, contact the local office of the Natural Resource Conservation Service.

Conventional tillage equipment is generally broken into two classes—primary tillage equipment and secondary tillage equipment. Primary tillage equipment consists of moldboard plows, chisel plows, and offset discs. Secondary tillage is generally more of a leveling procedure involving spring-tooth harrows, cultipackers (or combinations called roller harrows) and light disc harrows. A firm seedbed is important so that seed comes into contact with the soil for quick germination and rapid emergence.

### **Planting Equipment for Conventional Seedbeds**

A variety of methods can be employed to plant forage seeds after the primary and secondary tillage processes have been completed. Grain drills with forage seed

boxes, spinner spreaders, and cultipacker-type seeders are the most popular types of seeding equipment.

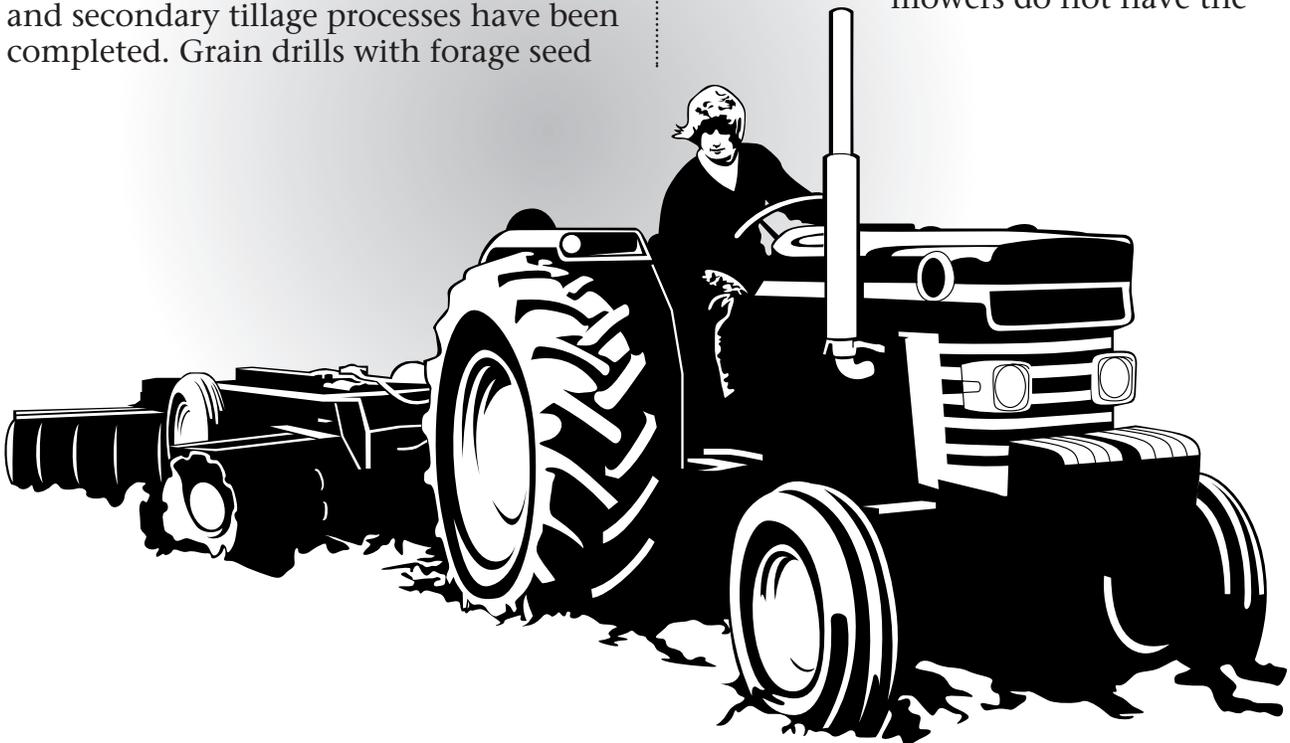
For small acreage, the use of a hand-operated cyclone seeder at a medium walking pace will do an adequate job. These types of seeders apply seed to the surface only, so it is important that a cultipacker or roller follow as the final piece of equipment to ensure good soil-to-seed contact.

### **Mowing Equipment**

One of the most important pieces of equipment needed to maintain pastures is a mower. Sickle bar, disc or rotary mowers will help encourage vegetative growth and reduce weed problems in the pasture.

Rotary mowers are built as either pull type or three point hitch and usually come in widths of 5 to 20 feet. As mentioned earlier, it is important to match the horsepower requirements of the mower with the tractor that will be used to pull it.

Sickle bar mowers range in width from 6 to 8 feet and can be used for trimming banks as well as mowing fields. Sickle bar mowers do not have the





ability to adjust mowing heights in as wide a range as rotary mowers.

Disc mowers are a combination of sickle bar and rotary mowers and provide the advantages of higher ground speed and less plugging than sickle bar mowers. However, they do not have the range of adjustment heights of rotary mowers.

### **Spraying Equipment**

Spraying herbicides on pasture fields and around ditches and fence rows to control weeds can be custom hired or equipment can be purchased to perform the task. Equipment can range from



handheld 2-gallon sprayers, to backpack sprayers, to 25-gallon lawn mower pulled gun sprayers, to several hundred gallon field boom sprayers.

Most weed control performed on small- and medium-size farms can be done with the smaller sprayers or by mowing. If field crops are being grown on the farm, larger sprayers used for these crops can be economically justified for use in forage crops. For more information on the use and calibration of spray equipment, refer to publication EB 317 entitled *Pesticide Sprayers for Small Farms* which can be ordered or purchased from any county Extension office.

## **Pasture Management: Equipment for Establishing and Maintaining Pastures**

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