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Establishing and Managing Horse Pastures

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Establishment

Horses and pastures seem to go together. Pastures provide exercise and a low-cost feed source, but unless productive, they provide only exercise. To achieve both goals, however, they must have a good start. These steps will help:

Soil Test – A test is the best guide for correcting soil pH and soil fertility needs. County Extension Offices have soil sample kits and instructions. Soil pH should be between 6.2–6.5. Lime reacts slowly with soil and is best applied several months before seeding, therefore test soil early.

Apply Lime and Fertilizer – Apply according to soil test. If large lime applications are needed, plow some down and disc some in. Disc fertilizer in after plowing. If using nutrient sources such as manure, apply before plowing or other soil preparation. To start a vigorous crop, correct lime and nutrient needs before seeding. Annual fertilizer applications are required for maintenance. Soil test the year after establishment. Lime may be needed every 3 to 4 years, so test soil again.

Prepare a Good Seedbed – Most forage seeds and seedlings are small and require a fine firm seedbed. Finely worked soil allows close seed-to-soil contact for germination, and close root-to-soil contact for early growth. A firm seedbed allows close depth control for shallow seed placement. Loose and cloddy seedbeds waste seed and do not sustain early growth well.

Buy High Quality Seed – Use species and varieties which are adapted to the area. Your County Extension Agricultural Agent can supply appropriate information. Avoid shopping for "bargain" seed. The cost difference between "bargain" and high-quality seed is very small when the entire expense is considered.

Use a Good Seeding Mixture – Usually it is best to keep a mixture simple: a highly productive grass, a legume, and Kentucky bluegrass. Bluegrass produces a resilient sod that "heals" well when cut by horses' hooves. The other grass provides feed when the bluegrass goes dormant in the summer. Legumes supply protein and reduce the need for nitrogen fertilization. Management becomes more difficult as more species are added. On highly variable soils, however, more complex mixes can be advantageous. Some species grow where others do not, ensuring coverage of the entire area.

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Grasses to Choose From

Kentucky bluegrass **–** makes rapid growth in spring and fall, but is dormant in summer months. Tolerates frequent grazing.

Smooth bromegrass **–** forms a loose sod, but can become coarse and stemmy. Clip for best utilization. Does not tolerate frequent grazing, requires rotational grazing.

Reed canarygrass **–** is most useful when immature; it may become very coarse later. Clip before seedheads appear. Tolerates wet soils, but even low alkaloid varieties are not as palatable as other pasture species.

Orchardgrass **–** matures early, so clip to keep it palatable. Tolerates frequent grazing better than some species.

Timothy **–** regrows slowly after grazing. Use only with other grasses. Does not tolerate frequent grazing, requires a regular schedule of pasture rotation.

Tall fescue **–** withstands traffic. An internal fungus may cause problems for horses. The fungus called an endophyte has been shown to affect pregrant mares. Endophyte-free tall fescue varieties are commercially available for pasture use. Use only seed that is certified endophyte-free.

Perennial ryegrass **–** is palatable and nutritious. It is not very winter hardy, re-seeding may be needed in more nothern locations. Recently, endophytes have been introduced to some perennial ryegrass culitvars. When purchasing perennial ryegrass buy endophyte-free cultivars for pasture use.

Legumes to Choose From

Ladino clover **–** a giant form of white clover that associates well with tall grasses, but is somewhat susceptible to drought.

Red clover **–** use only newer, more disease-resistant varieties. They persist for 3 to 4, years while older varieties last only about 2 years. Slobbers is assoicated with an alkaloid (slaframine) found in red clover.

Birdsfoot trefoil **–** is a good pasture legume, but difficult to establish. Leave 3 to 4 inches of growth for recovery after grazing.

Alfalfa **–** presents management problems in pastures. Use only where 5 weeks are available for recovery after rotational grazing.

Suggested Pasture Mixes

SPECIES	RATE/ACRE	SPECIES	RATE/ACRE
Well Drained Soils		**Moderately Drained Soils**	
Kentucky bluegrass	10 lb	Kentucky bluegrass	8 lb
Orchardgrass	6 lb	Timothy	5 lb
Ladino clover*	1 lb	Ladino clover*	1 lb
Poorly Drained Soils		**Grasses alone require Nitrogen fertilizer**	
Kentucky bluegrass	10 lb	Kentucky bluegrass	10 lb
Reed canarygrass	8 lb	Timothy	4 lb
Ladino clover*	1 lb		

*On light sandy soils, 2 or 3 pounds of red clover may be substituted.

Seeding – Late summer seedings often do better than spring seedlings because of cooler weather after seedling emergence. Usually there are also fewer weed problems. Seed from mid-August to early September, or as early in the spring as possible. Use a technique which covers seed only ¼ to ½ inch. Leaving seed on the soil will only result in a poor rate of germination. Bandseeding, drilling, or use of corrugated-roller seeder are better methods than surface broadcasting.

Control Weeds – Early weed growth will ruin a pasture. Either use herbicides or clip closely as often as needed. If using herbicides, read and follow all label instructions.

Grazing – Do NOT begin until there are 8 to 9 inches of growth. The root system must be well established or horses will pull the plants out while grazing.

Management

Horses graze selectively, often eating one kind of plant and passing over others. This leaves unutilized areas which become unpalatable and can eventually eliminate the most palatable species. Good management can reduce these problems and make the pasture more useful.

Delay Early Grazing – A common cause of pasture failure is grazing too early. This can occur in early life of new pasture or any pasture in early spring. Keep animals out of a pasture until there is at least 8 to 9 inches of growth. Young plants are easily damaged by horses' hooves earlier, and the root systems are not sufficiently developed to prevent the whole plant from being pulled out as horses graze. Avoid use of the pasture in early spring when soil is soft. Sod will be cut by hooves and compacting of the soil will cause additional damage. Wait until soil is dry and firm before beginning spring grazing. Better yet, wait for 8 to 9 inches of growth.

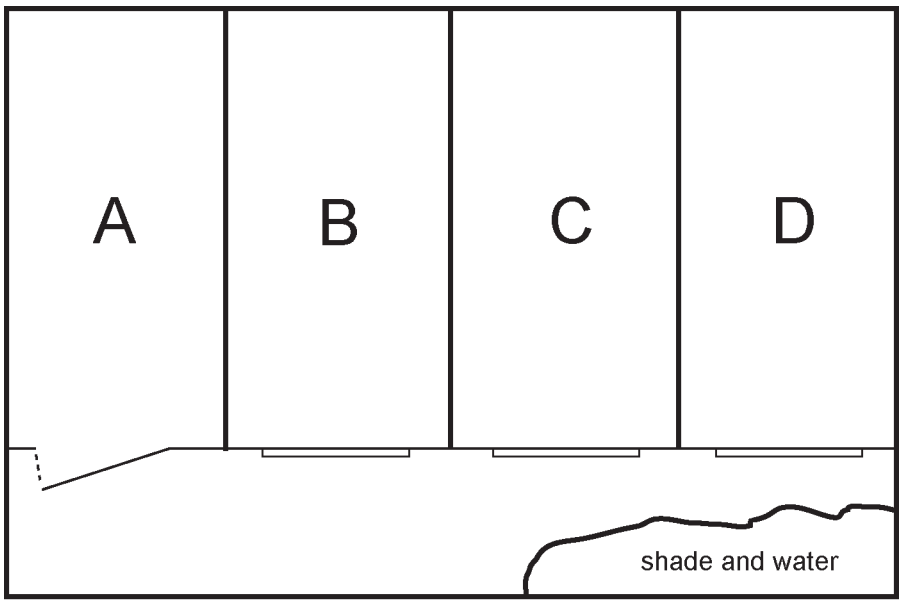
Fertilize Annually – To keep a pasture productive, fertilize it annually. Start with a soil test. County Extension Offices have soil test kits and instructions. Base fertility applications on test results and retest every 3 to 4 years. Lime will probably be needed too. The soil test will also provide this information. Take horses out of the pasture when liming or fertilizing and keep them out for several days or until after a rain. The most appropriate times for making these applications are in the spring before grazing begins, or in the fall after grazing ends. In pastures with only grasses, nitrogen can be applied just after a grazing period in a rotational system, or in continuously grazed pastures to stimulate growth for the next 5 to 6 weeks.

Manage Grazing – Many pastures are over-grazed, but few are undergrazed. Either situation is undesirable. Unfortunately, seasonal growth variations also contribute to these problems.

Overgrazing is probably the more common problem for the owner of one or two horses and limited acreage. As a guideline, it takes about 1 acre of pasture to support one horse for an entire grazing season. Frequently, there are two or more horses on less than 1 acre. The available feed gets "eaten into the ground," and these areas become exercise lots. Not much can be done except to provide more space.

Undergrazing results from having too few animals in a pasture. Part of the feed is not eaten, becomes coarse and stemmy, and is wasted. The solution is to force the animals to consume the feed while it palatable. Confine the animals to a portion of the pasture; overgrazing it for a short time. When the feed is consumed in that area, let them graze the rest of the pasture. This is a good time to clip the first area, spread the droppings so they will dry, apply fertilizer, and allow the area to recover. This is called rotational grazing and is one of the most efficient ways to manage a pasture. A series of small pasture or paddocks may also be used. In effect, each area is overgrazed for a short time, then allowed several weeks to recover. The last areas to be grazed may need early clipping to keep them palatable. The time for grazing any one paddock is determined by the amount of feed available, the size of the area, and the number of horses.

The accompanying diagram shows a system for rotational grazing. Put the animals in paddock A and



A system for rotational grazing

allow them to graze until the feed is consumed to about 2 to 3 inches. Leave the gate to paddock A open so horses have access to shade and water. Some areas may not be eaten well, particularly around droppings. When Area A is grazed down, move the horses to Area B, repeating the procedure as in Area A. While the horses are in Area B, clip and fertilize Area A, spread droppings, and let Area A recover. When Area B is grazed down, move all the horses to Area C. Continue to rotate the horses from one area to another throughout the grazing season. This system is much more efficient than constantly grazing the entire pasture for a whole season.

Clip That Pasture – Regular clipping is one of the least expensive (but most useful) practices in pasture management. Clipping an entire pasture after a period of grazing removes the unused feed and allows all of the plants to start new palatable growth. Previously undergrazed areas will be grazed after clippings. Many weeds will be controlled, and droppings can be spread to dry. Clip several times during the grazing season.

Weed Control – Clipping will help to control weeds that appear in pastures. However, it will not remove all weeds. Those which persist in spite of clipping may need to be controlled by using herbicides. County Extension Agricultural Agents have information about herbicides to be used in these cases. Remove animals from the pasture when herbicides are used and **keep them out** for the time specified on the herbicide container. Whenever using any pesticide, **read and follow instructions on the label.** The phone number for your Rutgers Cooperative Extension county agricultural agent may be found in the blue pages of your telephone directory, under *County Government*.

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