Species Selection and Seeding Rates for Horse Pastures

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There is no "silver bullet" or single specie that is correct for every horse pasture. A mix of grass species or a mix of legumes (clovers and/or alfalfa) and grass is preferred, but the species should compliment, not compete with one another. Following is a list of common perennial (grows year after year), cool-season grass pasture species divided into bunch and sod-forming species, legumes, and suggested seeding rates.

Cool-season grasses actively grow in spring and fall, and are not as productive during the heat of the summer. However, cool-season grasses are well suited for pastures in the upper Midwest. Bunch grasses tend to grow in "bunches", while sod-forming grasses usually cover the entire soil surface. When selecting pasture forages, try to include both types of grasses. Legumes can add nutrition to grass pastures, and reduce the amount of nitrogen needed (legumes fix nitrogen from the atmosphere). However, if seeding a mixed pasture (grasses and legume), there are no weed control options via herbicides.

Bunch Grasses

Orchardgrass (*Dactylis glomerata*) is leafy, has rapid regrowth, and has good early (spring) and late (fall) season growth. However, orchardgrass can be competitive with legumes, has marginal winter hardiness without snow cover, and can be very bunchy in its growth habit if planted at low rates.

Perennial Ryegrass (*Lolium perenne*) has rapid regrowth, high quality (very leafy), and is palatable when in the vegetative stage. However, perennial ryegrass has marginal winter hardiness, limited heat and drought tolerance, is susceptible to disease and can be competitive with legumes.

Tall Fescue (*Festuca arundinacea*) is adapted to a wide range of soils, including wet soils, is somewhat tolerant of continuous grazing, and has excellent fall productivity. Tall fescue can have marginal winter hardiness, and low palatability. Endophyte infected fescues can cause reproductive problems in mares and stallions and dry gangrene for all horses. Labels of pasture mix containing tall fescue (and other fescues) should be checked to ensure fescue is endophyte free. Endophyte infested or enhanced fescues should not be planted in horse pastures. A new variety of tall fescue, MAX Q, shows promise for use by horse owners as pasture or hay forage. MAX Q contains an endophyte that does not affect the horse's reproductive performance, as does Kentucky 31 tall fescue.

Timothy (*Phleum pretense*) is winter hardy, and has a broad window for quality and palatable forage because it is late maturing. Timothy does well in cool, moist areas. However, timothy has an uneven yield distribution, slow regrowth, and poor heat/drought tolerance.

Sod-Forming Grasses

Kentucky Bluegrass (*Poa pratensis*) is winter hardy and somewhat tolerant of continuous grazing. However, it has poor heat/drought tolerance. Because of its short, low growing growth habit, it can have lower yields compared to other pasture grasses.

Reed Canarygrass (*Phalaris arundinacea*) is tolerant of flooding and poorly drained soils. Reed Canarygrass is relatively productive during heat and drought. However, reed canarygrass is relatively coarse and unpalatable when mature, and is slow to establish. Newer varieties are less invasive than older varieties.

Smooth Bromegrass (*Bromua ciliatus*) is very winter hardy, and persists through heat and drought. However, smooth bromegrass can have uneven yield distribution, slow regrowth, poor summer productivity, and should not be used under continuous grazing.

Perennial Legumes

Alfalfa (*Medicago sativa*) requires a soil pH of 6.5 – 7.0, high soil fertility, and can not withstand water logged soils or flooding. Pure alfalfa hay and pasture is not recommended for most horses because it usually contains more protein than most horses require. Research has shown that horses grazing pastures planted with high population of alfalfa can exhibit photosensitive reactions or "sunburn," which is really a thickening and reddening of the white areas of skin due to liver damage. Light haired horses commonly exhibit these symptoms; black haired horses also get liver damage but the "sunburn" is not visible. Photosensitive reactions can also occur in horses grazing mold infected red and white clover.

Birdsfoot Trefoil (*Lotus corniculatus*) is low growing with bright yellow flowers, and is commonly used by highway departments for roadside seedings. Birdsfoot trefoil is best suited for acidic, poorly drained soils. Birdsfoot trefoil seed is more expense that other legumes and is difficult to establish. However, once established, it is persistent, high quality forage, even at or after maturity.

Red Clover (*Trifolium pretense*) has hairy stems and leaves, and large, red or reddish-purple flowers. It grows best on acidic, wet soils, and is usually used in areas where alfalfa will not grow. Mold infested red clover can cause slobbers and sunburn or photosensitive reactions.

White Clover (*Trifolium repense*), alsike clover (*Trifolium gybridum*), and sweet clover (Melilotus species) are commonly found in pre-packaged pasture mixes and grow better in moist conditions. Mold infested white clover, alsike clover, and sweet clover can cause sunburn or photosensitive reactions.

Cover Crops

Cover crops are fast growing annual (grows for one year) species that reduce weed pressure and erosion. Cover crops are commonly planted when establishing a new hay field, and can be used when establishing a new pasture. Oat (1 bu/A) and Italian Ryegrass (2 to 4 lbs/A) are common cover crops, and can be grazed. The one drawback to using cover crops with a pasture seeding is dealing with, and removing the cover crop forage before the forage becomes too mature or goes to seed.

Conclusion

Make sure to keep horses off newly seeded pasture until the grasses are well established and have been mowed a few times. Introducing horses to lush pasture gradually will reduce the chance of laminitis and colic.

Legume/Grass Pasture Mix on Well-Drained Soils	
Smooth bromegrass	8-10 lb/ac
Orchardgrass or Ryegrass	3-5 lb/ac
Alfalfa	3- lb/ac
Red clover	2-3 lb/ac
Legume/Grass Pasture Mix on Poorly-Drained Soils	
Reed Canarygrass	6 lb/ac
Timothy	3 lb/ac
Birdsfoot Trefoil	5 lb/ac
Red Clover	4 lb/ac
Grass Pasture Seeding	
Smooth Bromegrass	8-10 lb/ac
Orchardgrass	3-5 lb/ac
Timothy	3-5 lb/ac
Over or Inter-Seeding Legumes into Grass Pastures	
Red Clover	2-5 lb/ac
White Clover	2 lb/ac
Overgrazed or High Traffic Area Seeding	
Kentucky Bluegrass	20 lb/ac