

## Why growing native grass is so difficult

By Kathryn Watts

While native, unimproved grasses tend to be lower in sugar, successful establishment of a native grass pasture is expensive, difficult and time consuming. Improved agronomic characteristics such as vigor, rate of growth, and winter hardiness are closely correlated with sugar and fructan content. High sugar grasses grow in spite of us. Low sugar grasses need expert nurture and lots of fussing over, and will probably need a full year before your horses can graze. Even if you are successful at getting a good stand of grass, sustainable grazing over the long term will require a sophisticated management program, with much lighter use than conventional pasture grasses.



Have the notion to create a completely natural diet for your horse? Don't have a lot of land? It's not going to be easy.

This is not for those who are faint at heart, impatient, on a limited budget, or with few acres per horse. You are essentially spending a lot of money and of effort to grow a less productive pasture that requires much more intensive management. Of course horse people are all crazy, so some of us will try.

Native grass seed is expensive, hard to find, and may have quality issues. Figure about \$100/acre for seed, and make sure you ask about levels and identification of contaminating weeds. The largest current use of native grass seed is for roadsides, where contamination by toxic weeds is not an issue. Only 'noxious' weeds are the issue; those considered invasive and difficult to control. The seed producers figure only crazy people would try and graze it, so animal toxicity is not an issue. Usually a special planter is required, as native grass seeds are often very tiny or encased in chaff such that it does not flow through a conventional seed planter. Small seeds must be planted very shallow, which may then require irrigation for good germination.

Many of the grasses that are lowest in sugar are warm season grasses that only grow in summertime temperatures. That's because winter hardiness is very closely related to sugar and fructan content. Many of the prairie grasses native to the American Midwest only grow from June through September. They have a different mechanism for winter hardiness. Instead of accumulating carbohydrates to allow cool season growth, they go completely dormant so they don't require a source of stored energy. These low sugar native grasses have a very short growing season. They require either a climate where summer rains are regular, or irrigation. Some are fairly drought tolerant once

established with good deep roots, but will not produce until after a good soaking rain during summer. These grasses are quite nutritious during the summer, and then slowly lose nutrients as they are subjected to weathering. They can be fed as 'standing hay' which is essentially dead grass that is left in the field to be grazed through the winter. Horses in the wild eating native grass gain weight in the summer, and lose weight over the winter. Of course you will probably give some supplemental feed through the winter, but keep in mind that allowing your horses to remain fat all through the year is not natural, nor healthy. I like the concept of feeding standing hay through winter that is lower in nutrients. This is the time of year when the weather is not conducive to regular riding, so having my ponies spending more time walking about the paddocks eating low energy forage is especially useful.

It will take at least a year before you can graze native grasses, and then only lightly. If you are successful and conditions are right, by the second year the roots should be strong and deep and you can graze more, but never continuously. You will need to practice rotational grazing, which simulates a pattern of use by migratory herds of grazing animals. This requires cross fencing. Movable hotwires with a solar charger work nicely. Figure on grazing a section for 2-3 weeks once or twice per season, depending on size and vigor of the grass stand. The more land you have per horse, the more management options you will have. If you have only a few horses and a really big pasture, say 3 horses on 30 acres and a climate where the grass is well adapted, then you may be able to divide into 3 or 4 larger parcels and leave them on longer. With a big parcel of land, you should consider grazing half rotationally through the summer, and leaving half as standing hay through winter and spring. It's impossible to dictate how long the grazing interval should be. It depends entirely on the vigor of the grass, which is dependent on conditions, and grazing pressure at that moment in time. A good rule of thumb for grazing native grass is 'graze half and leave the rest'. If grazed to the ground continuously, native grass will die. Continuous grazing is only possible on grass species selected for grazing tolerance; that means high sugar content. Sustainable grazing management programs have not been developed for native grass except for the West and Midwestern regions of America, where a few native grass pastures still exist. If you live in a different region, figuring out a management program is going to require some experimentation and ongoing consultation with experts in grazing management. Consider asking your local agricultural university or conservation agency if they would be willing to make your horse property into a demonstration farm for pasture management and conservation. Native grass pasture is also good wildlife habitat, so you have common cause with conservation agencies, and they should be willing to help you. If you graze a stand of native grass too hard, you can count on local naturalized species of grass with high grazing tolerance (read high sugar content) taking over. Depending on where you live, these may be Kentucky bluegrass, fescue or brome.

Still want to try a native grass pasture? If so, start the summer before killing existing grass and weeds with multiple applications of Roundup and tillage. If you leave ANY sod forming grass species there, they will quickly take over the less competitive low sugar grasses. There just aren't any herbicides that are selective enough to kill certain kinds of grass without killing every kind of grass. You also need to allow time the following spring for existing grass seeds to germinate before another clean cultivation immediately before you plant the native grass. If you have something tenacious like

fescue, it could be a real booger to kill. I can see by the replicated plots out back, in just 2 years, some of the natives were completely overrun and choked out by their more aggressive neighbors. My first native grass paddock is a failure. 2 applications of Round up in spring and many passes with a disc successfully killed the improved variety of meadow brome. But after I planted the native grass mixture and starting irrigating, Kentucky bluegrass came up from the seed bank stored in the soil. The experts told me I should spend a full year preparing the soil to control existing grasses that may come up from seed. I was impatient, and I now I have Kentucky bluegrass crowding out my native grass. The best way to start over with native grass is to farm the land in broadleaf row crops for a couple years beforehand. This allows you to use herbicides that selectively kill grass while the land is being cropped. Make sure you or your tenant farmer pick grass herbicides that will not carry over long enough to affect your native grass crop.

Expect to use broadleaf herbicides on your new stand of native grass. Weeds will happen until it gets well established and spreads out to cover the soil. This may take a couple years because native grasses are less vigorous and slower growing. Many are bunch grasses, which may take 2-3 years to form big spreading clumps capable of choking out weeds. Because native grass is not a common crop, most herbicide applications will be 'off label'. You will have to experiment, or have expert advice to assure crop safety.



This native grass seed was contaminated with broadleaf weeds. This required 2 applications of herbicide the first year of establishment.

In view of the time, difficulty and expense of attempting to establish a native grass paddock for obese or laminitic horses, it might be best to learn how you can manage your existing paddocks for lower sugar concentration. Once you improve your grass management skills, you'll be better prepared to successfully grow low sugar, native grass. When best grass management is combined with limiting grass intake utilizing controlled access, use of grazing muzzle, or strip grazing, you may be able to accomplish the same goals. We all want our horses to graze as much as possible, while staying lean and healthy. 'Going back to Nature' may be easy if you have 100 acres in the arid west, but can be very challenging elsewhere. It's just impossible to recreate sustainable native vegetation in small areas with confined animals. I suggest you start with a small area and experiment. We can learn from our mistakes and do better at our next attempt.