

## Teff Hay Ideal For Horses

Kyle Conway was sold on teff hay after feeding it to his horses for just one winter. He liked it so much that he began selling it at his feed store. Today, he brokers teff along with alfalfa across much of the U.S., in particular California. Along the way, he discovered why other horse owners have long been dissatisfied with the ancient grain as a forage.

"People say their horses won't eat it," says Conway. "It needs to have a green color and very minimal seed. In my opinion, a bad experience with teff is due to bleached, discolored hay and being overgrown."

Conway notes that many farmers look for the highest yield when harvesting a hay crop. Lots of tonnage makes good economic sense, but it doesn't produce the best product. That is especially true with teff grass. He points out that a farmer can get three times the yield with teff if he harvests after the seed heads mature.

"If it goes to seed, it stores more starch and is overgrown, and the horses find the seedheads bitter and don't like them," says Conway. "In other areas, rain can delay harvest, and it gets overgrown. Our growers ensure that teff is harvested at the optimum time for the ideal nutritional value. That's before seed heads form, and the plant is fine-stemmed, leafy, soft, and palatable."

For Conway, teff's nutritional value is key. When he saw the positive response in his horses, he began sending in samples for analysis.

"I saw the fiber content was a lot higher than alfalfa, and starch was a lot lower," says Conway. "When starch passes through the horse, it is processed into glucose sugar in the hindgut. It causes metabolic issues similar to what sugar does to people who are diabetic."

Teff is also lower in protein than alfalfa, ranging from 17 to 19 percent with the first cutting and falling to 10 to 14 percent by the third cutting. Conway points out that horses in the wild were designed to eat from 4 to 18 percent protein.

"When we introduce really high protein in the ration, they have to work harder to



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get rid of it," he says. "If you free choice alfalfa, some horses will do fine, but most will have problems and get fat. However, if you only feed alfalfa twice a day, ulcers can be a problem."

He explains that the horse was designed to graze 20 hours a day. When fed sporadically with no outside pasture, stomach acid spikes without continued saliva production to counteract it.

"I've taken horses with severe ulcer problems, fed them just teff grass and in a few months, the problem went away," says Conway. "When I started feeding it to my horses, their attitudes improved, and they were easier to work with. At the end of the winter, they looked better than when I fed them alfalfa."

Conway reports that teff is also an anti-allergen. "I had three cases of horses on medication, and within 2 to 3 weeks of switching to teff, they came off medications and could breathe again. The best equine veterinarian in Arizona told me that teff grass is the best, most complete feed for horses. It does everything a horse needs."

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## Single Point Connector Simplifies Loader Mounting

Single-point hydraulic connectors have been standard equipment on Deere farming equipment for several years, and now the company is bringing that concept to its smaller garden-style equipment.

The company has made it super easy to connect hydraulic hoses for the 120R Loader on Deere compact diesel tractors with a single-point hydraulic connector kit. The optional kit has sections for tractor and loader valves with 4 or 6 ports. A 4-port implement half can be attached to the 6-port tractor mount, or a 6-port implement mount will work on the 4-port tractor mount.

The kit mounts on the tractor using the same bracket that holds the loader mounting frame. The loader half of the kit stays with the loader when the loader is unhooked.

The kit part number is BXX10283 and is priced at \$756.80 from Deere dealers. It's compatible with 1E, 1R, and 2025R Deere tractors.

Contact: FARM SHOW Followup, Deere Single Point Connector (www.greenpartstore.com).



**Single-point hydraulic connectors like those used on large Deere equipment are now available as an optional kit for the Deere 120R loader that mounts on smaller diesel tractors.**

## Perennial Oilseed Showing Potential

Silphium (silflower), a native prairie plant with deep roots, may be the first perennial oilseed crop. In the right environment, it potentially may be at least as productive as sunflowers.

Work at The Land Institute developing silphium has spread to multiple universities in the intermountain states and the Midwest.

"We're still very much in the research and development stage, working on selecting the most preferable strains and then bulking out the seed," says Tammy Kimbler, The Land Institute. "The seed will be used in regional testing in the U.S. and also in Argentina, where there's much less pest pressure because it isn't a native."

Silphium provides a good habitat for earthworms, hoverflies (pollinators and aphid eaters), native bees, Monarch butterflies, and honeybees. It doesn't spread and is a strong candidate to provide soil protection and carbon sequestration.

David Van Tassel, The Land Institute lead researcher, has doubled seed size and selected for other desirable attributes. In an interview on The Land Institute website, he described discovering that winter kill is not a problem, even in places like Minnesota and Vermont. Neither are high temperatures and humidity, given a successful plot in Texas.

Insect and fungal pests appear to be the biggest challenges. Van Tassel has identified rust-resistant strains and plans to cross them with higher-yielding strains. Some lines also seem to be resistant to a predacious moth. He's identified strains with larger flower heads and shown that cutting stems down can cause the plant to branch out and produce heads at the same heights.

Seed from selected lines is shared with cooperating researchers, where they are looking at multiple end uses depending on the growing environment. Silphium is recognized for its drought tolerance due to root depths of 4 to 6 ft. In areas where that is a concern, it's being evaluated as a forage crop. Where moisture is not a factor, it's being evaluated for oilseed production and other benefits.

Don Wyse with the Forever Green Initiative, University of Minnesota, notes that the deep roots are suited to intercept leached fertilizer before it enters groundwater.

"Cattle love it and will eat it to the ground,



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and intermountain universities are looking at it for forage," says Kimbler. "It's also a prime forage for honeybees and is being evaluated for honey production at the University of Minnesota and Central Ohio State University. Minnesota researchers are also looking at it for grain production and as a continual living cover crop."

As with Kernza (Vol. 40, No. 1), the perennial grain developed under the leadership of The Land Institute, genetic mapping has been vital for research on silphium.

"We now have a gene package we can share with our collaborators to identify traits of harvestability, stand and yield," says Kimbler. "Completing the genome map of silphium and a couple of close relatives was a fundamental piece of the program and will allow us to accelerate the research."

The Land Institute is also working on other potential perennial field crops, including perennial sorghum.

"In the next 5 to 7 years, we hope to introduce even more perennial crops," says Kimbler.

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**Zawalick added hard sides and an electric lift cylinder to his Cyclone.**

## Reader Shares Leaf Pickup Tips

Cyclone leaf and grass rakes are handy tools, but the fabric box can be hard to dump, notes Paul Zawalick. He came up with a simple solution...hard sides.

"When the sides belled out, it wouldn't dump, and I had to dig the leaves out by hand," says Zawalick. "I connected two 1-in. steel tubes between the corner uprights of the frame for the leaf box. I mounted plywood panels between them and the fabric bag to keep the sides from bellying out."

Zawalick made other changes to the Cyclone rake to make leaf handling easier. Now 84, lifting the leaf bag to dump it was getting to be a chore.

"When it's full of mulched leaves, it's too

heavy for me to lift," says Zawalick. "I added an electric lift cylinder to the cart and the leaf bag. That solved the problem."

He also bolted a slip-pin holding hinge plate to the side of his ROPS post. When using the Cyclone mower, he runs the throttle cord through a cotter pin and slides it into the hinge plate.

"It's easy to reach when I need to adjust the throttle," says Zawalick. "When I unhook the Cyclone, I slip the pin out and leave it with the machine."

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