Teff – An Alternative Hay Crop for Horses
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As drought continues to persist in New Mexico, producers are searching for alternative hay crops that will produce large amounts of forage with minimal water and in a short amount of time. Teff is one such grass that may meet this demand. Interest in teff as hay for horses has grown in the southwestern USA where the predominant warm-season annual forages are sorghums, which are not suitable for horses. Teff, a warm-season annual grass used as high quality forage, is considered to be widely adapted and even heat and drought tolerant, as well as tolerant to waterlogged soils.

Teff has very fine stems, is leafy, and forage quality when harvested at late boot to early heading is similar to full bloom alfalfa, making it acceptable as horse hay being preferred equally to timothy and orchardgrass hay by horses. Teff is also a very suitable forage for cattle (beef and dairy) and sheep. Feeding studies have demonstrated the value of teff for obese horses and others that require lower levels of digestible energy due to risk for metabolic disorders.
such as laminitis. It is not well-suited for grazing until after hay harvest because it develops a weak root system early in stand life and plants can easily be uprooted. Teff can be cut multiple times and typical yields will range from 1.0 to 2.5 tons/ac per cutting, depending on irrigation amount and maturity. Because of its high quality, palatability, and rapid growth, teff fits very well in alfalfa rotations during periods leading up to fall alfalfa plantings. In addition, the same equipment used to plant and harvest alfalfa can be used for teff production. Two critical management points are: 1) teff must be planted shallow because of its small seed size, and 2) at least 4 inches of stubble must be left at harvest for proper regrowth.

As an added benefit, teff apparently is more nitrogen-use-efficient than sorghum-sudangrass in N-deficient soils and has a low nitrogen requirement with no yield benefit from greater than 80 to 90 lb N/ac/yr. In fact, because excessive N can cause lodging, split applications of 25 to 50 lb N/ac for each cutting have been recommended. A preplant application of 90 lb N/acre may optimize yield and quality, but would certainly reduce fertilizer application costs and it is not likely that teff will accumulate sufficient nitrates to cause toxicity in livestock when 90 lb N/acre is applied, 0.3% nitrate being the greatest value measured in NMSU studies.

Recent research at New Mexico State University’s Agricultural Science Centers at Tucumcari and Los Lunas using flood and furrow irrigation indicate that late planting (mid-June or early July compared to mid- to late May) may shorten the time between planting and the first harvest and possibly save irrigation water. Generally, the first harvest can be taken 45 to 60 days after planting. Teff yield (about 3 tons/acre total in two or three cuttings) and quality (15.5 % crude protein and 66% total digestible nutrients) may be optimized with applications of 30 lb N/acre for each growth/regrowth cycle and irrigation levels approximately half that applied to fully irrigated alfalfa during the same timeframe (July through October). More frequent, lighter irrigations, as can be applied through a sprinkler, are likely more beneficial than heavy, less frequent applications, which are common with furrow irrigations, and flood irrigation to an extent.

Because teff can contain considerably lower starch and soluble carbohydrates relative to other forages commonly fed to horses, it could serve as a useful component in the diet of horses with equine metabolic syndrome or related disorders. Nonetheless, it is recommended that soluble carbohydrate levels of individual teff hay lots should be measured before being offered to horses with energy-associated metabolic disorders. Crude protein of teff ranges from 12 to 17% and is heavily influenced by nitrogen fertilizer and stage of maturity. As mentioned earlier, nitrate toxicity potential is low, but in addition, prussic acid is not a concern in teff as it is in sorghums.

Fast-growing summer annuals can be utilized to a great extent in New Mexico as emergency forage and can be planted late in much of the state with our long growing seasons. This year, because sorghum (e.g., haygrazers) seed supply is short and not suitable for horses anyway, teff offers a great alternative that can fill the forage gap during dry periods or during alfalfa field rotations. Due to the higher price of seed, seeding costs for teff can be as high as $20-30/ac. As such, producers should assess their hay and livestock needs and also their potential market before determining which crop is best suited for their situation.

For information about teff or other forage management in New Mexico contact your County Cooperative Extension office or visit the NMSU Cooperative Extension forages website at: (http://forages.nmsu.edu/).
Producer Spotlight

This month’s Producer Spotlight will highlight Justin Boswell and his family of Dexter, NM.

Justin Boswell is working to help farmers get the best hay yield possible.

Between working with the New Mexico Hay Association and helping individual farmers through his private company, Boswell Crop Consulting, he is giving farmers key information to help them be as efficient as possible during the tough times of a drought.

“During a drought, you have to get smarter and more efficient at how you do things,” said Boswell. “That might mean using techniques like moisture monitoring, variable rate irrigation and precision technology, or staying abreast of the latest research being done in the region.”

New Mexico Hay Association, along with New Mexico State University’s Cooperative Extension Service, hosts the Southwest Hay and Forage Conference where growers may learn about the most current research and technologies in the hay and other forage industries.

“As an industry, we are always trying to improve things,” said Boswell, who has been the association’s executive director for the past five years. “Ian Ray, Mark Marsalis and Leonard Lauriault are just a few of the people from NMSU and the Extension Service that have contributed greatly to helping organize our annual conference. The conference gives our farmers an opportunity to sit down one-on-one with this team and many other presenters from outside of New Mexico and learn how their research can help them.

Besides helping his father with the family farm in the Dexter area, Boswell said he has combined his two degrees in agricultural biology and agricultural business from NMSU to form Boswell Crop Consulting.

“I help farmers by looking at their bugs, weeds, pathogens and plant fertility problems, and help them get more efficient use of water by doing moisture monitoring and refining their irrigation schedules,” he said.

While hay availability may be a key component of all livestock industries, water is the backbone of agriculture. Boswell said until Mother Nature provides more water, it is the responsibility of all agricultural producers to be as efficient as possible with this perishable natural commodity.

Justin Boswell is a multi-generational Aggie family. His wife Christen was an athletic trainer while at NMSU. Boswell’s mother, Janet Wyly Boswell, received her teaching degree from NMSU and his great-grandmother Elda Corn served on the Board of Regents. And from the looks of things, Justin and Christen’s daughter, Jordynn is headed to Aggie Land.

***** Producer Spotlight *****

The New Mexico Alfalfa Market News has a new monthly article beginning this year! Our ‘Producer Spotlight’ will highlight the lives and accomplishments of some of New Mexico’s hay producers and other folks involved in the hay industry. We hope you enjoy this new addition to the Alfalfa Market News. If you know of someone who should be highlighted in one of our editions, please contact Karen Ray at: http://www.rememberingthetime.net/.