PENNINGTON Pennington Forage News

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Cover Crop Mixtures Added to Pennington Product Line

Continuing a sixty-five year commitment to protect and improve land and natural resources, Pennington is adding a line of cover crop seed mixtures to its premium forage product offering. These mixes will help fill the expanding demand for cover crop forages created as the result of increasing numbers of row crop farmers moving from conventional tillage to conservation tillage production systems.

The new cover crop line will feature a choice of three different product mixtures. One of these is a "soil builder" seed mixture containing Pennington's Wintergrazer rye and AU Sunrise crimson clover. This mix will not only provide excellent soil cover, but will also build soil organic matter and add organic nitrogen to improve soil health. There is also a "green manure" mixture that contains a combination of Wintergrazer rye and legumes that builds organic matter and gives an added kick of nitrogen to the soil above that provided in the "soil builder" mixture. A third choice will be a "soil tilth improvement" mixture containing radish and Pennington's ARG-1 ryegrass variety that features extended root technology. These unique forages improve soil tilth by breaking up hard, packed soil and by creating pores throughout the upper soil profile to enhance water penetration and air exchange. Additionally, there will be custom mix opportunities where Pennington can custom blend a variety of seed products to meet a specific cover crop need by area or region.

Cover crop mixes containing annual grasses and legumes provide excellent ground cover, build soil organic matter and add organic nitrogen to improve soil fertility and health.

Radish have gained popularity as a cover crop. This unique forage improves soil tilth by breaking up packed soils and enhancing soil water penetration and air exchange.

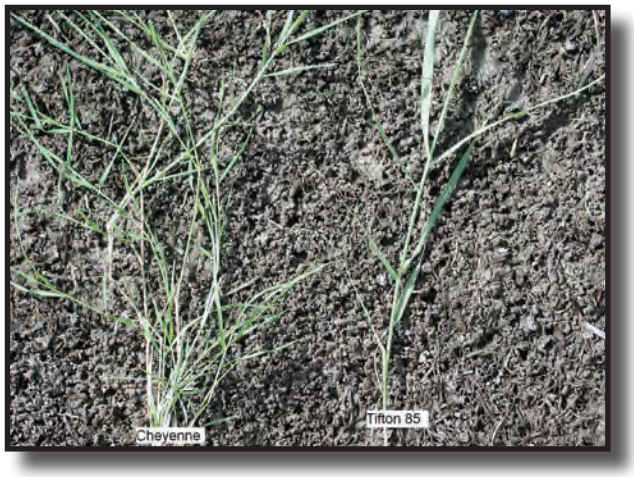
Pennington cover crop seed mixtures will feature the same high quality standards that are applied to the entire forage product line. Pennington's use of named varieties that are proven performers helps ensure greater uniformity of coverage across the field; unlike some commodity products of unknown origin that often yield inconsistent performance and questionable weed content. To further insure product performance, all seed contained in each mix will be treated with Pennington's exclusive Rapid Results seed treatment, a combination of natural plant growth stimulants that enhances germination and improves seedling vigor. The result is a deeper and more vigorous root system that optimizes plant health and growth.

Pennington Pointer

During the year after planting Durana or Patriot white clover, Pennington forage experts recommend that nitrogen fertilization be limited to no more than 25 or 30 pounds of actual nitrogen/acre. This encourages clover nitrogen fixation and reduces grass competition with the clover.

Pennington Expands Availability of Cheyenne II Bermudagrass

Cheyenne II, a recently released certified variety of seeded bermudagrass, will be available throughout the bermuda growing regions of the U.S. in 2015 according to Chris Agee, Forage Agronomist with Pennington Seed. *"Cheyenne II has proven to be a popular variety since its release and for the first time, an adequate amount of seed will be available throughout our entire service area,"* says Agee. Cheyenne II is an exclusive, certified variety of seeded bermudagrass developed in conjunction with Seeds West and Texas A&M University. It is a single variety and not a bermudagrass blend, so it will not revert or change over time. It provides high yields, outstanding palatability and excellent leafiness for use as pasture grazing or high quality hay production. *"Cheyenne II offers ranchers an economical and easy alternative to sprigging because it is established from seed"*, states Agee. *"Seeding gives 300 times more plants/sq.ft. than sprigging for faster establishment and coverage. Cheyenne II can be planted with the rancher's own equipment and on their own time schedule resulting in cheaper establishment costs,"* adds Agee.



It can be planted on large or small acreages or used to thicken thin hybrid bermudagrass stands. Cheyenne II features Pennington's exclusive Penkoted® seed process that enhances early drought tolerance, increases seed germination speed and improves seedling survival. The resulting deeper and stronger root system helps insure a thicker and healthier stand of Cheyenne II.

Cheyenne II seeded bermudagrass combines high yield with outstanding palatability and excellent leafiness for use as pasture grazing or high quality hay production.

Forage Bermudagrass Yield Trials
Overton, TX - Starkville, MS - Tifton, GA

Variety	Yield (lbs DM/A)*
Cheyenne II	**9736**
Coastal**	8738
Common	8392

*3yr. avg. yield - 2006-2008.
**hybrid variety

Pennington to Offer America's Alfalfa Seed Products

Pennington Seed, Inc. is partnering with America's Alfalfa to offer growers two of their premium alfalfa varieties – AmeriStand 403T Plus and AmeriStand 803T. Both varieties are **Traffic Tested™** for fast recovery and persistence and offer high resistance to Phytophthora root rot and other yield robbing diseases. **AmeriStand 403T Plus** is a fall dormancy 4 variety that has widespread adaptation across the northern three-fourths of the U.S. **AmeriStand 803T** is a fall dormancy 8.3 selection that is primarily adapted to the southern one-fourth of the country. *"We are very pleased to establish a sales partnership with one of the leading suppliers of alfalfa seed products in the U.S."*, says John Carpenter, Pennington's Independent Sales Director for the Eastern U.S.. *"While we will be concentrating our sales efforts on these two varieties, we will have ready access to the entire America's Alfalfa product line to accommodate farmers wanting other alfalfa varieties and types"*, adds Carpenter.

Pennington is partnering with America's Alfalfa to offer premier alfalfa varieties that offer high yields, excellent disease tolerance and Traffic Tested™ technology .

UGA Study Using Durana as a "Living Mulch" Cover Crop for Corn Production

Researchers at the University of Georgia have initiated a study that could have far reaching impact on how future corn grain crops are produced throughout the world. Known as the "living mulch" study, this multi-year effort is being led by UGA Agronomy Professor Nick Hill with support from Pennington Seed, Inc., the Georgia Corn Commission and a Sustainable Agriculture Research and Education (S.A.R.E.) Grant. The research focus is on producing corn in a perennial legume cover crop - in this case **Durana** perennial white clover. Highly touted potential benefits of a living mulch production system for corn production include (1) less soil loss due to erosion, (2) enhanced natural weed control resulting in lower herbicide usage, (3) lower commercial nitrogen use and (4) a significant reduction in production costs.

Under the living mulch corn production system, a perennial clover cover crop is established. Then prior to corn planting in the spring, narrow strips of clover are chemically or mechanically killed and corn is seeded into these row strips. The clover cover in the row middles is left to grow. Following corn harvest, the clover grows back into the drill row. The following year, the killed clover and corn planting strip is moved to the previous year's row middle.

"Durana's unique growth traits make it an excellent fit for the living mulch production system," says Pennington Forage Agronomist, Chris Agee. *"Its high stolon density, shade tolerance, aggressive growth habit and tolerance to glyphosate are ideal for a living mulch cover crop. These same traits have made Durana a popular choice for sustainable production systems on Christmas tree and pecan farms and also in the commercial erosion control industry."*

UGA researchers are using Durana perennial white clover to supply nitrogen and suppress weeds in a "living mulch" corn production system. Preliminary results have proven positive with yields approaching 200 bushels/A and cost reductions ranging from $.37 to $.58 per bushel.

The living mulch production system continues to be refined, but early results are positive. *"Corn grain yields have been in the 200 bushel per acre range with no sidedress nitrogen fertilizer applied,"* relates Agee. According to the forage expert, preliminary economic analysis of the living mulch production system has shown a reduction in production costs ranging from $.37 to $.58 per bushel of corn produced.

This unique production system is a work in progress as it continues to be studied and defined. "*Dr. Hill has really taken the lead in this research and is fully exploring its potential by comparing planting row widths, minimum tillage techniques and planting row kill widths to determine which are best for the living mulch production system*", states Agee. *"He is also experimenting with different nitrogen sidedress rates in an effort to accurately match N rates with corn production goals under this method of production."*

Even in Summer Deer Nutrition Requirements are High

Wildlife experts say that the summer/early fall period is a time of high nutritional demand for deer especially for lactating does, recently weaned fawns and bucks growing antler mass. Research has shown that does nursing fawns require a diet consisting of 14-22% protein while post-weaned fawns need 16-20% protein and bucks need at least 13-16% protein in their diets for maximum body and antler growth.

Containing a mixture of soybeans, iron clay peas, buckwheat, sunflower and sorghum, Pennington's **Rackmaster Deluxe Spring/Summer Deer Mixture** provides a nutrient-dense food source containing the high protein and energy deer need during the critical summer and early autumn months. Rackmaster Deluxe Spring/Summer Deer Mixture is also ideal for late summer planting to provide a quickly established, rapidly growing food plot for early season hunting before frost.

Properly Prepare New Ground for Successful Establishment of New Pastures

"...there is one opportunity to get it right..."

The old cliché "Rome wasn't built in a day" can certainly apply when establishing perennial pasture forages on new ground. The goal with new pasture establishment should be to develop and create a pasture that can remain productive for 20-30 years or longer. To accomplish this objective, proper field preparation is essential. When establishing a new pasture, producers should adopt the mentality that there is one opportunity to get it right even if it means that planting has to be delayed several weeks or months or even until the following year to allow proper field preparation to occur. Key preparation items include (1) debris and rock removal, (2) tillage, (3) erosion prevention, (4) pH correction, (5) fertilization and (6) smoothing and firming the soil surface.

Debris and rock removal. Adequate time and effort should be devoted to removing woody debris (on cleared woodland) and rocks from the area to be established. Excessive amounts of both can interfere with tillage and seeding operations as well as proper smoothing of the field.

Proper tillage. Many new-ground areas are compacted. Breaking up the top 8-10 inches of the soil surface is necessary for optimum rainfall capture and deep development of grass roots. A vigorous and deep root system enables the forage plant to more readily take up nutrients and water, thus improving performance and its ability to withstand heat and drought stress.

Erosion prevention. Freshly tilled soil on sloping fields is highly susceptible to erosion. Terraces and/or waterways may need to be constructed or critical areas mulched to prevent this from occurring until the pasture grass becomes well established. The Natural Resources Conservation Service (NRCS) can provide advice and assistance with field preparation practices that will reduce erosion.

pH correction. The optimal time to correct pH deficiencies with ag lime is during field preparation. The activity of lime applied and thoroughly mixed into the top 6-8 inches of the soil surface is much faster and more efficient than lime applied and left on the soil surface. Incorporated ag limestone corrects the soil pH further down in the soil profile allowing grass roots to penetrate deeper in search of nutrients and moisture. This insures a healthier, more productive and persistent pasture.

Key steps in preparing new-ground areas for seeding permanent pasture forages include removing rocks and woody debris, applying erosion control measures and firming and smoothing the soil surface. Note the green tire track areas indicating a lack of soil firming prior to planting.

Fertilization. Applying the proper amounts of nitrogen, phosphorus, potassium, sulfur and magnesium is essential in achieving maximum growth and persistence of pasture forages. While deficiencies of each of these nutrients can be corrected post-planting, the ideal and most effective time to correct a phosphorus deficiency is during the tillage operation prior to pasture seeding. This is because phosphorus does not readily move downward into the soil profile. Incorporating phosphorus allows plant roots ready access to this key nutrient.

Smooth and firm. The last step of field prep is to smooth and firm the new ground. This can be easily done if adequate attention has been given to debris and rock removal and to proper tillage preparation. Producers need to remember that they will make hundreds of trips across these fields in the future, so proper smoothing of the field should be made a priority. A key component of the smoothing operation includes firming the soil. Proper firming reduces soil erosion, prevents tire rutting of the field and creates a more conducive environment for seed germination and early seedling growth.