

USING SOYBEANS AS A SMOTHER CROP FOR MAXQ PASTURE RENOVATION PAYS FOR MS CATTLEMAN

The cost of converting toxic tall fescue pastures to non-toxic novel-endophyte infected tall fescue may make some farmers wince, but not Mississippi cattle producer Kenny Henshaw. This savvy cattleman has been able to accomplish this task with money to spare.

The protocol for converting toxic fescue pastures to a novel fescue variety such as *Jesup MaxQ* or *Texoma MaxQ II* is well defined. In most areas of the country, producers use the spray-smother-spray-plant approach. This protocol begins with the application of glyphosate herbicide in the spring to kill all existing toxic fescue prior to seed head development. Next, a summer smother crop such as pearl millet, sorghum or sorghum-sudan is planted for grazing or hay. In the fall, a second glyphosate application is made to kill the smother crop and any undesirable weeds and grasses. Once this is completed, seeding of MaxQ can take place.

With over fifty years of combined experience as a stocker cattle and cow-calf producer, Henshaw had seen the effects of toxic fescue on his cattle and knew it was stealing his profits. He tried endophyte-free tall fescue with mixed results. "Cattle performed extremely well on the fungus-free fescue; it just wouldn't last very long," relates Kenny. "This meant replanting every three years and constantly fighting weeds that encroached as the fungus-free fescue thinned out."

As a so-called "student" of producing cattle and forages, Henshaw regularly attends Mississippi State University cattle and forage seminars. It was at one of these meetings that he learned about a new non-toxic tall fescue variety that contained a "novel" endophyte that greatly improved stand persistence while providing cattle performance equal to fungus-free fescue. That variety was *Jesup MaxQ*. "Initially, I thought MaxQ was too expensive," professes Henshaw. But he tried it and was impressed with the results. "Cattle performance was excellent," says Kenny. "The MaxQ persisted and produced more forage than my old KY 31. I pretty much found out that if I wanted good gains and an improved bottom line, MaxQ was going to be my best option."

But still, the high cost of pasture conversion to MaxQ was a concern to Henshaw. It was at another one of those MSU seminars that Kenny met and established a friendship with former MSU Forage Variety Testing Manager and current Pennington regional forage sales representative Jimmy Ray Parish. "Kenny related his concern about the high cost of converting toxic fescue pastures to non-toxic varieties like MaxQ," recalls Parish. "I had successfully used soybeans as a smother crop on my farm to convert some pastures and shared that with Kenny." Since that time, Henshaw

has converted four pastures to MaxQ using Roundup Ready soybean varieties as the summer smother crop.

The use of soybeans as a cash smother crop has turned the MaxQ conversion process into a money maker for Henshaw. In Kenny's latest pasture conversion effort, the soybeans produced a net profit of \$281 per acre – more than enough to pay for the pasture renovation. Parish states emphatically, "By using soybeans as a smother crop, Kenny actually makes money when he plants MaxQ!"

With several years of experience using this method of pasture renovation, Henshaw is able to share several tips for successful conversion to MaxQ. He recommends using shorter growing soybean varieties that do not produce a large amount of trashy debris. The combine used to harvest soybeans should be equipped with a good shredder that scatters the debris uniformly across the soil surface. If the soybean planting and harvest operations do not compact or create ruts in the field, the MaxQ can simply be no-tilled into the soybean stubble. If compaction or rutting is present, Henshaw says disking may be required to loosen the soil and smooth the field prior to planting.

It should also be noted that no residual herbicides were used for the soybean crop that could possibly result in carryover that would interfere with fall fescue germination and early growth.



Mississippi cattleman Kenny Henshaw uses a cash crop of soybeans as a summer smother crop in old toxic fescue pastures to offset the cost of pasture renovation and conversion to non-toxic MaxQ tall fescue. The pasture on the left was converted to *Texoma MaxQ II* via this method the previous fall.

KEEP FESCUE PRODUCTIVE IN MIXED PASTURES

MANAGE PASTURES TO PROMOTE FESCUE

In areas of the country where both warm and cool season forages are adapted, keeping tall fescue stands persistent and productive can be a challenge. Even with good management, fescue pastures can be overtaken by warm season perennial and annual grasses such as bermuda, crabgrass, signalgrass and dallisgrass over time. This can lead to fescue stand thinning or total loss. To aid in maximizing fescue stand life and production, forage experts generally recommend that pastures containing both cool and warm season forages be managed to promote the cool season perennial forage. Several management strategies can be employed to do this.

Proper timing of N fertilizer application -

Fertilizers containing nitrogen should be applied to cool season forages like tall fescue just prior to the onset of rapid forage growth. With adequate rainfall, this period occurs from March through early May and again from September through early November. This means that nitrogen containing fertilizer should be applied to fescue pastures in mid-February to mid-March and again in late August or early September. The application of nitrogen fertilizer to cool and warm season mixed pastures during the summer months should be avoided as it promotes warm season perennial and annual grass growth which leads to increased competition for the fescue.



Applying nitrogen fertilizer at the proper time and increasing grazing/mowing minimum heights are key practices in keeping tall fescue stands persistent and productive in mixed-grass pastures.

Adjust minimum grazing heights - To help keep fescue persistent in a mixed pasture, grazing recovery height must be adjusted in rotational grazing systems. Grazing recovery height refers to the amount of grass growth left behind when the grazing herd is moved to a fresh pasture paddock. Recovery heights for warm season forages generally range from 2-3 inches whereas the minimum height for grazing tall fescue is 3-4 inches. To benefit and promote persistence of the fescue stand, a minimum grazing recovery height of 3-4 inches should be applied for fescue-mixed pastures.

Maintain adequate soil potassium - Maintaining adequate soil potassium is of utmost importance in keeping a healthy and productive stand of pasture grass. Potassium is a key nutrient in a forage plant's ability to withstand stresses brought on by temperature and moisture extremes. Summer heat and drought can bring on tremendous stress to all pasture grasses, but especially to tall fescue. Research has shown that plant recovery times following stress are significantly improved for forages growing on fertile soils with adequate amounts of available potassium.

UTILIZING NEWLY ESTABLISHED MAXQ TALL FESCUE

Once plant growth reaches approximately 8 inches in height, newly established stands of Jesup MaxQ or Texoma MaxQ II tall fescue can and should be grazed. This prevents self-shading of plants and promotes plant tillering. During the year of establishment, MaxQ should not be grazed below a height of 3-4". Grazing newly planted fescue fields when excessively wet should be avoided as it leads to hoof "pugging" damage and stand loss. If practical, rest newly established pastures for a 3-4 week period during the hot summer months (mid to late July through mid to late August). Newly established MaxQ can be also harvested for hay. To obtain the optimum combination of yield and quality, fescue should be harvested for hay at the early bloom stage of growth. When cutting for hay, leave at least 3" of plant stubble. Scalping fescue leads to stand loss and increased weed competition.

FIRST YEAR MANAGEMENT OF DURANA IN WILDLIFE FOOD PLOTS LEADS TO A LONG AND PRODUCTIVE STAND LIFE

“TAKE CARE OF IT FOR A YEAR AN IT WILL TAKE CARE OF ITSELF.”

Several years back, a certain automobile anti-freeze manufacturing company developed a catchy and effective advertising phrase that read “You can pay me now or pay me later”. The message was that investing a little money now would potentially prevent larger and more expensive problems in the future. For Columbus, Mississippi landowner Chris Herring, this same message is quite appropriate for maximizing the performance and life of his 40 acres of wildlife food plots planted in [Durana](#) white clover.

Herring started using Durana in his food plots a number of years ago. “The Durana we planted six years ago is still there,” relates Chris. While Durana was developed to last multiple years, stand life and performance is greatly enhanced with good management. As to the management of his own Durana, Herring says, “Durana is one hardy clover, but it has to be taken care of.” His management includes spraying to control weeds, occasional mowing and the periodic use of phosphorus and potassium fertilizer.

While Durana requires minimum maintenance and is tolerant of low management situations often found in food plots, Pennington wildlife experts say that stand life and performance can be optimized by implementing some simple and basic management practices. These include (1) maintaining proper soil pH and soil fertility, (2) periodically mowing the plots, (3) keeping unwanted weeds and grasses in check and (4) controlling damaging insects.

Management Begins at Planting

Herring’s management approach begins at planting. “For Durana, I use a seeding rate of 8 lbs. seed per acre. This insures a good solid stand of clover that suppresses weeds,” explains Herring. He uses 2,4-DB, Select and Pursuit herbicides to control unwanted weeds and grasses that emerge.

If needed, plots are mowed once annually although Chris candidly states, “The deer pretty much mow it for you.”

Like numerous other landowners, Chris is impressed with the low amount of maintenance needed for Durana. “With Durana, I have found that if you take care of it for a year, it will pretty much take care of itself,” says Herring. “We are seeing less need for maintenance each year.”

More detailed information on managing Durana clover is available in the [Knowledge Center](#) on the Pennington Wildlife website under the Tips and Guides section.



Uncontrolled weeds and grass can lead to a loss of clover stand in wildlife food plots. MS landowner Chris Herring used an herbicide combination of Select and 2,4-DB to control weeds and grass in this Durana white clover food plot. The area in the center was inadvertently missed during the herbicide application resulting in heavy weed cover and loss of clover stand.

KEEP DEER HEALTHY AND GROWING WITH SPRING/SUMMER FOOD PLOTS

Wildlife experts say that the summer/early fall period is a time of high nutritional demand for deer especially for lactating does and recently weaned fawns. Research has shown that inadequate protein intake can negatively impact body growth during the fawn’s first year as well as the size of a yearling’s first set of antlers. The affect of this early protein inadequacy can persist for several years.

Pennington’s [Rackmaster Deluxe Spring/Summer Deer Mixture](#) is specifically formulated with forages and plants that meet the high energy and protein needs of deer during the summer and early autumn seasons. These plants provide the fuel needed to develop antler mass, body size and milk for developing fawns along with enhancing overall health of the deer herd. Soybeans, iron clay peas, buckwheat, sunflower and sorghum are included in this elite seed mix - all of which supply the high protein and energy deer need. These ingredients are blended together in precise percentages to prevent aggressive plants from overpowering the other components in the mixture. This insures that a nutrient-dense food source is available throughout the summer and into early fall. 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.



SUNLIGHT ESSENTIAL FOR FORAGE PRODUCTION AND QUALITY

While soil nutrients and water are essential for forage plant growth, the most important input for producing large amounts of high quality grass is solar energy according to retired University of Georgia Forage Agronomist Carl Hoveland. Dr. Hoveland says this is because solar energy is an essential component of the photosynthesis process used to produce sugars and starches needed by the grass plant. The well known forage expert compares a pasture or hayfield to a massive solar panel that collects energy from the sun. He says grassland farming is essentially managing the pasture or hayfield to collect as much sunlight as possible in order to maximize the production of energy for plant maintenance and optimum forage growth.

To accomplish this, proper grazing management is essential according to Hoveland. He says that pastures should be grazed to allow continuous production of new leaf growth. Young leaves actively capture sunlight, peaking at approximately three weeks of age and ceasing sunlight capture after four to six weeks in the summer. While under-grazed pastures allow an abundant accumulation of forage mass, much of this will be of lesser quality and offer little, if anything, towards the promotion of new plant tissue growth according to Dr. Hoveland. The dense leaf canopy also prevents light from reaching deep down into the plant thus discouraging the development of new buds for fresh tiller production.

Just as detrimental is overgrazing the pasture. Hoveland says overgrazing results in fewer leaves to capture sunlight. This means fewer “solar collectors” are available to capture and utilize the sunlight needed for the production of sugars necessary for optimum plant growth and health.

“Good grassland farming involves managing a pasture or hayfield to collect as much of the incoming sunlight as possible and convert it into high quality forage.”

Dr. Carl Hoveland

Practical Applications

While forage species differ some in their tolerance to grazing, there are general practical applications that can be offered for pasture management. Hoveland says that grazing should be frequent enough to remove leafy green forage while still leaving an abundance of new tillers and enough foliage to allow optimum sunlight capture for the photosynthesis necessary

to simulate and support new growth. This means that continuous overgrazing should be avoided. Also, if a rotational grazing system is used, pasture managers should avoid allowing too long of a rest time between grazing periods.

(Info for this article came from Forage Physiology - Dr. Carl Hoveland - Proceedings, 2013 Ga. Grazing School.)



Sunlight is essential for producing large amounts of succulent forage. Proper grazing management is a key component in maximizing sunlight capture by forage grasses.

Managing Pastures for Newly Established Durana & Patriot White Clover

Spring Management (1st year) - Existing pasture grasses should be periodically grazed or mowed during the spring following fall or late winter clover seeding. This reduces competition during establishment and allows the clover seedlings to receive sunlight needed for early growth and development.

Nitrogen Fertilization - During the year after planting, limit nitrogen fertilization to no more than 25 or 30 pounds of actual nitrogen/acre. This encourages clover nitrogen fixation and reduces grass competition with the clover.

Grazing Management - Periodic grazing of pastures throughout the year prevents excessive grass growth and allows sunlight penetration down into the grass canopy to reach young clover seedlings and/or new growth from clover stolons. Using a rotational grazing system greatly enhances clover persistence as it allows perennial clover varieties to re-foliate and build energy reserves for times of heavy grazing or heat and drought stress.