

# THE FORAGE OF THE FUTURE IS HERE!

Adding Durana white clover to your pasture can reduce the cost to produce a pound of beef on your farm by 50%!



## **DURANA**

The Durable, All Purpose White Clover



### **FREE NITROGEN**

Durana can produce up to 150 lbs./acre/year of nitrogen - a savings of over \$100/acre/year, based on \$.70/lb. nitrogen prices



### **IMPROVED ANIMAL PERFORMANCE**

With Durana you can expect up to a 50% increase in ADG's



### **REDUCE OR ELIMINATE PROTEIN SUPPLEMENTS**

Durana contains over 25% protein and can reduce or eliminate the need for supplemental protein sources

**Discover the Savings Advantage with Durana White Clover in Your Pasture!**

**AND Durana has over 90% more stolons, increasing persistence up to 3 times longer than other white clovers!**

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**1-800-285-SEED**  
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# Benefits of Planting Durana White Clover in a Grass Pasture

In an agricultural world of ever increasing production costs and flat sales prices, producers must find ways to streamline costs and become even more efficient. For livestock producers, developing forage and grazing systems that are low maintenance and self sustaining will be the key to remaining profitable in the future. Forage and beef cattle specialists have long known and touted the benefits of clovers. With skyrocketing fertilizer and fuel costs, farmers are diligently seeking ways to cut costs and improve production efficiency. Clovers offer multiple animal performance and sustainable production characteristics needed to maintain a high level of production at a reduced cost.

## Increased Forage Quality

The introduction of clover to a grass pasture greatly enhances forage quality. This results in increased palatability, greater animal consumption and higher forage digestibility. Clover is nutrient dense, providing large amounts of calcium, phosphorus, magnesium, protein and energy needed for optimum cattle performance. These desirable attributes of clover combine to reduce or eliminate the need for protein supplementation resulting in significant cost savings.

## Crude Protein & In-vitro DM Digestibility of Selected Forages

FORAGE	CP%	IVDMD%
Bermudagrass	7-16	51-58
Tall Fescue	17-22	73-78
<b>White Clover</b>	<b>22-27</b>	<b>81-85</b>

## Increased Animal Performance

Multiple livestock studies throughout the U.S. have shown increases in gain per head, average daily gain, gain per acre, % calf crop and weaning weights from clover and grass mixed pastures when compared to grass pastures alone.

### Effects of Clover on Beef Cattle Performance

- Increase in gain/hd up to 35%
- Increase in average daily gain up to 40%
- Increase in gain per acre up to 55%
- Increase in calving percentage up to 10%

Source: Dr. Dave Bade, Professor & Extension Forage Specialist Emeritus- Texas A&M

### Stocker Gain on Pastures With & Without Clover

Pasture	Daily Gain/Hd**
Fescue & Durana Clover	2.5 lbs.
Fescue alone*	1.4 lbs.

\*Pastures fertilized with 65 lbs. N/A

\*\* 2 yr.avg. Eatonton, GA- Bouton, et. al



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## EFFECT OF CLOVER ON BEEF COW/CALF PERFORMANCE

Pasture	N Rate/A/Yr	Grazing Dates	Cows ADG (lbs.)	Calves ADG (lbs.)	Gain/A (lbs.)
Coastal Bermuda	100 lbs.	Apr. 6 - Oct. 5	.49	1.57	293
Coastal Bermuda & Clover	0	Mar. 11 - Oct. 5	1.37	1.94	410

### Free Nitrogen

As a legume, clover manufactures its own nitrogen. Forage experts say clover can capture up to 150 lbs/A of atmospheric nitrogen that can be shared with companion pasture grasses, thus reducing the amounts of purchased nitrogen fertilizer needed. With nitrogen prices at 60 cents per pound, clover can reduce production costs by \$35-\$80 per acre or more.

### Nitrogen Fixation of Clovers

TYPE	N Fixed (lbs/A/Yr)	N Value @ 60 cents/lb
<b>Durana White Clover</b>	<b>150</b>	<b>\$90</b>
Ladino Clover	150	\$90
Red Clover	150	\$90
Crimson Clover	60	\$36
Arrowleaf Clover	75	\$45

### Extends Grazing Days & Reduces Hay Needs

Clover overseeded into a warm season (bermuda, dallisgrass, etc.) perennial pasture provides more total annual forage production and allows grazing to begin 30-60 days earlier in the spring than pastures without clover. The results are less hay needed and lower labor costs. In a study at Texas A&M, Dr. Gerald Evers reported the addition of clover to a dallisgrass pasture lowered animal wintering costs by 26%.



The addition of clover to warm season perennial pastures can lower wintering costs by reducing the number of hay feeding days.

### Lowers Cost of Beef Production

Using an adaptable clover in perennial grass pastures can significantly reduce the cost of production in cow/calf enterprises. In a four year study by Dr. Gerald Evers at Texas A&M, the cost of suckling calf gain per acre was 50% lower with clover mixed pastures when compared to grass pastures receiving nitrogen fertilizer. The value of the clover in this study amounted to almost \$100 per acre.

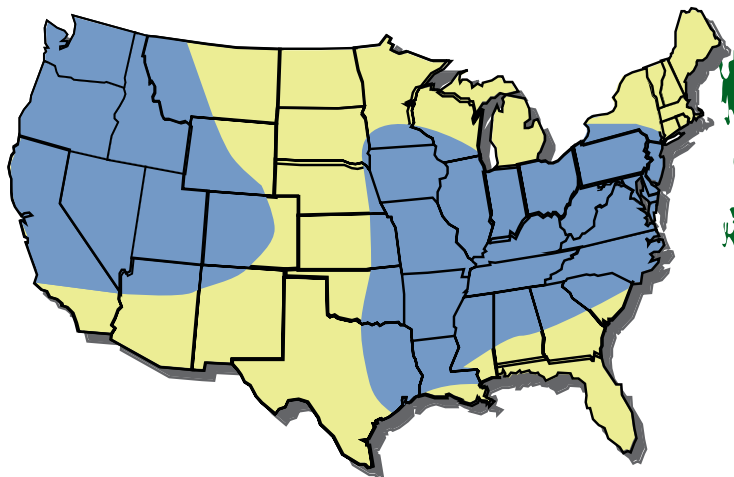
## Why Durana White Clover for Pastures?

### Wide Adaptability

Durana is well adapted from eastern Texas and Oklahoma across the South to the Atlantic Coast and north along a line from Macon, GA to Dallas, TX. It also grows well in the Pacific Northwest and in river valleys and irrigated pastures of the intermountain region.

### Unmatched Persistence

In most situations in which clover is to be grown with a perennial grass, leading forage specialists say it is preferable to use an adaptable perennial clover rather than an annual clover. Pennington's Durana perennial white clover was uniquely and specifically developed to be grazing tolerant and competitive with companion cool and warm season perennial pasture grasses while maintaining long stand life. In numerous university trials and extensive on-farm use, Durana has proven to be highly durable with excellent heat and drought tolerance. It is persistent and grazing tolerant, lasting up to three times longer than other clover types.



■ Primary Adaptation  
■ Adapted to Some Sites

**TABLE 1. PERCENT BASAL COVERAGE WITHIN ROW OF WHITE CLOVER\***

	% Basal Cover	% Basal Cover
Entry	March 2000	January 2002
Regal	77	6
RegalGraze	64	22
<b>Durana</b>	<b>90</b>	<b>65</b>

\*Entries continuously grazed in Bermudagrass sod. Planted October, 1999 at the Northwest Georgia Branch Station.

**TABLE 2. STAND PERSISTENCE OF WHITE CLOVER VARIETIES\***

Variety	October 2006	October 2007
<b>Durana</b>	<b>85</b>	<b>61</b>
Barblanca	82	53
Kopu II	70	45
Regal	66	33
RegalGraze	80	49

\*Planted March, 2006 in a cattle grazing tolerance trial at Lexington, KY.

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### Lower Cost of Establishment

When shopping for clovers, seed cost per acre should be considered over seed cost per pound. This is because different varieties or types of clover call for different seeding rates. Seeding rates can range from 2 lbs. to 20 lbs. or more seed per acre depending on the type of clover. Another factor to consider is expected stand life. Some clovers last a single growing season while others remain productive 2-5 years or

longer. While perennial clovers may cost more per pound, prorated establishment costs are often much lower than those of annual types that must be seeded every year. As a long lasting perennial clover, Durana offers lower prorated seed and establishment costs when compared to annual clovers and other short-lived clover varieties.

## Compare Clover Establishment Costs\*\*

Plant Characteristic	Durana	Ladino*	Red*	Crimson	Arrowleaf
Stand Life	<b>***3-5 years</b>	1-2 years	1-2 years	6 months	6-8 months
Seeding Rate (lbs/ac)	<b>3</b>	3	10	20	10
Seed Cost/ac.(over stand life)	<b>\$4.17-\$6.95</b>	\$4.10-\$8.25	\$8.75-\$17.50	\$20.00	\$22.50

\* SHORT LIVED PERENNIAL IN SOUTHERN AREAS OF ADAPTATION \*\* APPROXIMATE SEED COST ONLY \*\*\* ESTIMATED STAND LIFE FOR COMPARISON PURPOSES - UNIVERSITY TRIALS AND ON-FARM EXPERIENCE HAS SHOWN MANY STANDS OF DURANA AND PATRIOT TO PERSIST MORE THAN 5 YEARS.



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## Are all Clovers Created Equal? Compare and Discover the Durana Advantage!

Characteristic	Durana	Ladino	Red	Crimson	Arrowleaf
Annual/Perennial	<b>Perennial</b>	*Perennial	*Perennial	Annual	Annual
Stand Life	<b>3-5 years</b>	1-2 years	1-2 years	6 months	6-8 months
Seeding Rate (lbs/ac)	<b>3</b>	3	10	20	10
Forage Quality	<b>High</b>	High	High	High	High
Annual Grazing Days	<b>180-210</b>	180-210	180	60-90	90-120
Grazing Tolerance	<b>Excellent</b>	Fair	Fair	Fair	Fair
Re-seeding (under grazing)	<b>Excellent</b>	Poor	Poor	Poor	Fair
# of Growing Points	<b>High</b>	Low	Low	Low	Low
Drought Tolerance	<b>High</b>	Medium	Low	Medium	Medium

\* SHORT LIVED PERENNIAL

## Durana White Clover- "A Workhorse Not a Showhorse"

Some years back, a popular South Georgia legislator ran for governor with a campaign slogan theme titled "A workhorse – not a showhorse." The slogan implied that the candidate may not have as much glitz as some of his opponents, but none of them would outwork him.

When it comes to Pennington's Durana white clover, there is no better way to describe it than to use this same old gubernatorial campaign slogan. There may be clovers that appear to establish more quickly and produce more forage early on, but none can match Durana's durability, environmental toughness and persistence.

In developing Durana, former UGA plant breeder Joe Bouton set forth to find a clover that would compete and persist under varying weather conditions and real world farm pasture management systems. He wanted a perennial "workhorse" clover that could tolerate drought, heat and heavy grazing and also compete with existing pasture forages used throughout the U.S.

Durana's growth habits are different than annual clovers and ladino types of clover. It emerges, sends down a deep taproot and then begins forming a network of stolons that spread along the soil surface. The plant pegs down at each node to form a series of sub-plants that produce an abundance of new leaf mass. Each so-called peg develops into a root system that enhances water and nutrient uptake by the plant and also prevents the plant from being uprooted by heavy livestock grazing. While other clovers initially may seem more productive with taller growth and larger leaves, Durana's thick stolon mass (97 stolons/



Durana white clover emerges and immediately sends down a long taproot that helps insure plant vigor and survival.

sq. ft. compared to 52/sq. ft. for ladino) is producing an abundance of leafy, nutritious forage while at the same time better competing for nutrients and water with the existing pasture forage. This unique growth habit makes Durana a real "workhorse" clover with unmatched persistence and toughness.

Adding to Durana's reputation as a "workhorse" clover is the fact that it is the only perennial white clover recommended for use with summer perennial grasses such as bermuda and bahia. It also tolerates lower pH and a wider range of soil types than other clovers. Durana has a wide geographic area of adaptation including the Northeast, Upper Midwest, Lower and Upper South and parts of the Western U.S.



While annual clovers such as Crimson (r) appear impressive with large leaves and robust plants, Durana (l) forms a mat of productive forage that provides grazing for 8 – 10 months year after year.



Durana stolons spread across the soil surface forming new roots and abundant new leaf tissue at node junctions. This unique growth characteristic enhances plant survivability, grazing tolerance, and persistence.

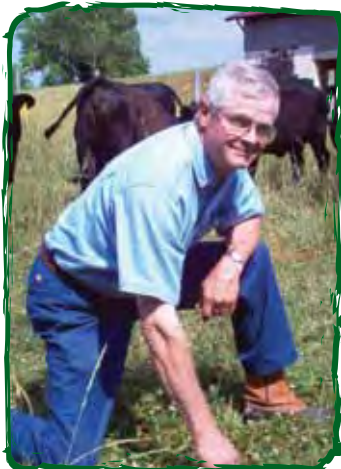
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# What People Say About Durana Clover as a Pasture Forage



*"I tried planting four types of clover in my pastures and Durana is the only clover to establish. We have a lot of La-S1 clover in our area but it doesn't compare to Durana. Durana grows from September to June. No other clover produces like this. I think every seed germinated when we planted. Durana works equally well in the bottoms and on the hillsides. Another big plus is that where there is a good stand of Durana, there are virtually no weeds now. I plan to plant more and would recommend it to everyone."* – Bob Gorman, Ringgold, LA

*"We chose to plant Durana after doing some personal research. Compared to other clovers such as ball, crimson and arrowleaf that we have on our ranch, Durana works in a wider pH range and soil type. We have it on sand as well as clay and everything between. Our calves are weaning 100 lbs. heavier after adding Durana to our pastures. At 3 lbs. seed per acre, it was easy to establish and being pre-inoculated was a plus. Other clovers are a little cheaper per pound, but require a higher seeding rate which makes them more expensive per acre to plant."* – Bitsy Dotin, Detroit, Texas



*"I wintered 17 yearling heifers on 11 acres of bermuda pasture overseeded with Durana clover with no supplemental feed and only 1/2 round bale of hay. The heifers gained well and remained in excellent condition the entire winter. I will no longer plant small grains for grazing. If planted and managed correctly, Durana clover can lower production cost, improve cattle performance and increase profits. Durana is an absolutely amazing clover! It is the best forage that has been introduced to my cattle farm in recent years."* – Fred Greer, Mansfield, GA

*"Durana is the best clover I have found for Louisiana. We planted it in bermuda-grass pasture and graze it under pivot irrigation all summer long as well as late fall and spring. It grows almost year around. With the addition of Durana I have been able to reduce my fertilizer bill and increase cattle gains. As a true perennial, Durana comes back each year from live plants as well as from seed."* – Cliff Vining, Epps, LA

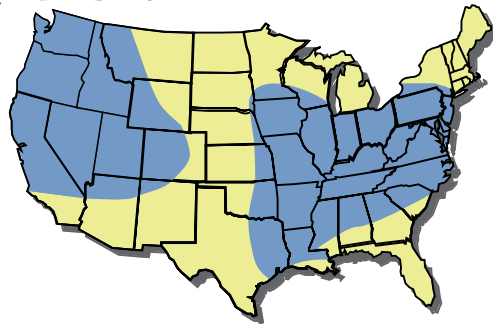


*I fully realize the benefits of clover and was looking for one to add to my forage pasture mix that would dilute the effects of fescue toxicity and allow me to reduce nitrogen costs. I had tried red clover and ladino types, but they could not compete with the fescue to remain productive and persistent. Bill Hodge, a good friend, native Virginian and respected cattle grazer in Georgia, suggested I try Durana white clover. It was good advice. With Durana, I have finally found a clover that competes with fescue, is productive and persists under real farm conditions.* –Ernie Reeves, Mt. Solon, VA

PASTURE FORAGE

# Durana White Clover for Pasture Forage

## Where to Plant:



 **Primary Adaptation**

 **Adapted to Some Sites**

**Name:** Durana White Clover (*Trifolium repens*)

**Type:** Cool season perennial legume

**Adaptation:** From eastern Texas and Oklahoma across the south to the Atlantic coast and north along a line from Macon, GA to Dallas, TX. On loamier soils in the Coastal Plain region of the Southeastern US under orchard or foodplot management. Also in the Pacific Northwest and in river valleys and certain irrigated areas of the western U.S.

**Uses:** Durana is highly persistent under grazing and is best used to enrich existing cool and warm season improved and unimproved grass pastures. Aids in reducing the effects of fescue toxicosis. Excellent for grazing fall and spring into early summer. Durana increases the attractiveness and nutritional value of wildlife food plots, alone or in a mixture.

**Benefits:** Research and ranch experiences repeatedly demonstrate the superior feed value of a white clover-grass mixture compared to grass alone. Improvements in conception rates, milk production, calf weaning weights, daily gains and animal health can be realized. Durana-grass mixtures may also be used for high-quality hay or silage. Durana fixes 75-150 lbs/A nitrogen or more annually that can be shared with companion forages.

**Nutrition:** 18 to 28% crude protein and total digestible nutrients (TDN) ranging from 65 to 85%. Highest values will be obtained with a vegetative to 10% bloom harvest. Maturity of the crop at harvest will determine individual results.

## Planting:

**Dates:** South: September - November...may be frost seeded in February to early March in some locations

Upper South: September - early November...may be frost seeded in February to early March or spring planted in April - early May

North: August - September...may be frost seeded in February - March or spring seeded in April - May

**Rate:** 3 lbs/acre if no-till drilled or broadcast into established pastures; increase to 4 lbs./acre if frost seeded; 5 lbs/acre for a pure stand (pure stands for wildlife plots; for livestock see Special Considerations).

**Depth:** 1/8" maximum (stand failures will result from seed planted too deeply).

**Fertilizer:** Soil testing is highly recommended. Liming to a pH of 6.0-6.5 and providing adequate levels of potassium and phosphorus are necessary to ensure a productive clover stand. See your local county extension office for details.

## Management:

Seed come pre-inoculated and once established, Durana does not require nitrogen fertilizer. Clip or harvest surplus forage in under utilized pastures or food plots. Under continuous grazing, keep grass and/or weed height between 2" and 6" to help maintain the clover stand.

## SPECIAL CONSIDERATIONS

Bloat can be a problem for animals on pastures with a large proportion (>35%) of white clover. Bloat-preventative supplement materials are recommended.

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