

HAY

Frosty Berseem makes excellent high-quality hay as the plant structure is very similar to that of alfalfa. Easy to dry down and easy to feed, Frosty Berseem features a high leaf-to-stem ratio and livestock take to it readily with little to no refusal. Frosty has shown excellent disease resistance and is capable of producing more than 4 tons of hay from a single planting.

SPRING PLANTED HAY PRODUCTION (NORTH)

2015 CLOVER TRIAL-PSU ROCK SPRINGS, PA
PLANTED APRIL 27TH
DRY MATTER YIELD TONS/ACRE

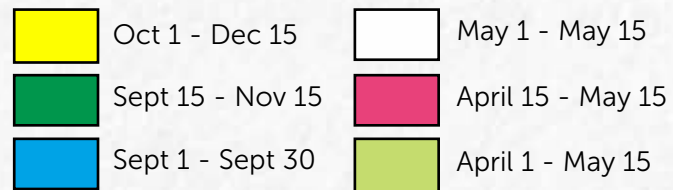
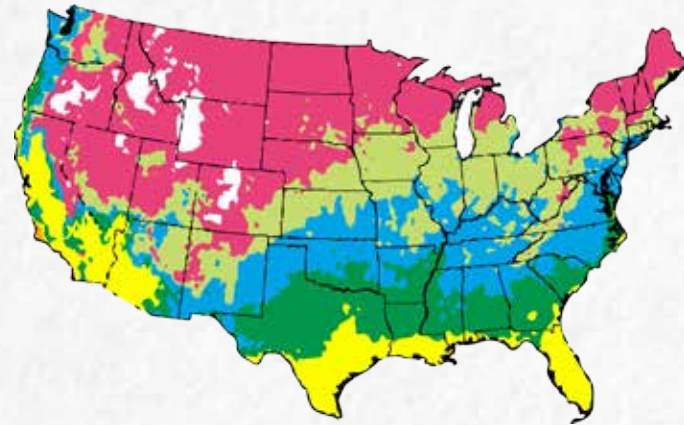
| Variety | Cut 1 07-Aug | Cut 2 28-Sep | Total 2015 |
|-------------------|-----------------|-----------------|---------------|
| Frosty Berseem | 3.31 | 1.08 | 4.39 |
| Freedom red | 2.97 | 1.41 | 4.38 |
| FIXatioN Balansa | 3.57 | 0.16 | 3.73 |
| Canterbury white | 2.27 | 0.93 | 3.20 |
| Kentucky Pride | 2.94 | 0.14 | 3.07 |
| Grand Mean | 2.69 | 0.76 | 3.46 |
| CV% | 9.66 | 20.30 | 10.33 |
| LSD (.05) | 0.37 | 0.22 | 0.51 |

FALL PLANTED HAY PRODUCTION (SOUTH)

ANNUAL CLOVER YIELDS IN HOLLY SPRINGS, MS (LBS./A.)

| VARIETY | HARVEST DATE | | TOTAL |
|----------------------------|--------------|----------|-------|
| | 4/12/2014 | 6/3/2014 | YIELD |
| Frosty Berseem Clover | 922 | 3352 | 4274 |
| Blackhawk Arrowleaf Clover | 673 | 3241 | 3914 |
| Bigbee Berseem Clover | 358 | 3262 | 3620 |
| Apache Arrowleaf Clover | 1116 | 1660 | 2776 |
| White Cloud Crimson Clover | 1353 | - | 1353 |
| Yuchi Arrowleaf Clover | 1023 | - | 1023 |
| LSD(0.05) | | | 737 |

PLANTING

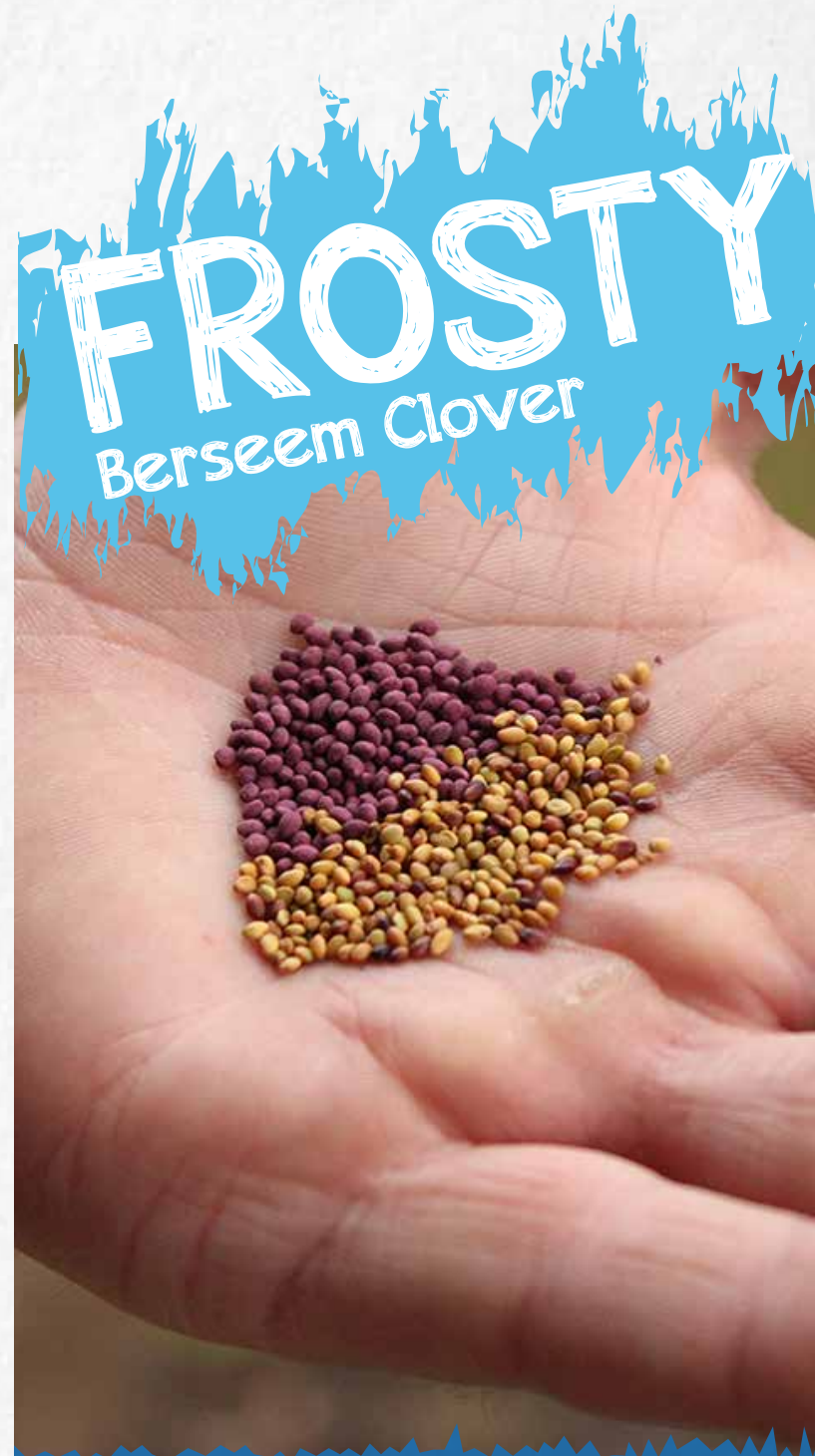


| | Drilled | Broadcast |
|----------------|--|---|
| Seeding Rate | Mono-culture 15lbs/acre In mixes 5-7lbs/acre | Mono-culture 25 lb/acre In mixes 12-16 lb/acre |
| Planting Depth | 1/4th inch | |
| Ideal Soil | Prefers slightly alkaline loam and silty soils with a of pH 6+ | |

Frosty can be dormant or frost seeded in most locations. Success is dependent on soil type and days experiencing soil heaving.



'Plants Fix Nitrogen'
YouTube video



We've combined the best in forage and cover crop research to find an effective new solution for your growing concerns.

GRAZING

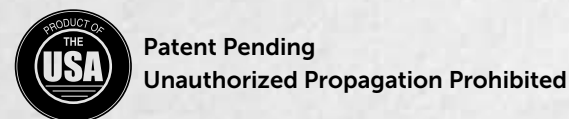
Frosty is an excellent choice for grazing, either by itself in a monoculture or in a mixture with cool-season grasses. Berseem clover is considered to be a low-no bloating legume and in animal feeding trials at Mississippi State no signs of bloat have been observed.

Adding Frosty Berseem to a pasture mix can be very cost effective as you can greatly decrease/eliminate your nitrogen inputs while harvesting a forage with greater nutritional attributes. As an annual clover, your Frosty Berseem will eventually die and when it does ALL of the nitrogen that it has created will be released to the benefit of remaining pasture components.

EVALUATION OF ANNUAL RYEGRASS/BERSEEM CLOVER GRAZING POTENTIAL

MISSISSIPPI STATE UNIVERSITY (2014-2015)
HENRY H. LEVECK ANIMAL RESEARCH FARM
STARKVILLE, MS

| | % CP | % ADF | % NDF | % IVTDMD | % Fat | % Lignin |
|----------------------------------|-------|-------|-------|----------|-------|----------|
| Annual Ryegrass + Frosty Berseem | 14.46 | 35.35 | 53.89 | 75.83 | 2.64 | 3.95 |
| Frosty Berseem | 20.56 | 33.97 | 43.95 | 78.56 | 2.4 | 5.83 |
| Annual Ryegrass + nitrogen | 12.17 | 36.03 | 55.25 | 75.97 | 2.55 | 4.05 |



STOCKPILING

Frosty Berseem is suitable for early season stockpiling early in the season. Due to the high quality of the forage produced, Frosty will break down over the winter months, so it's best utilized early in the season.

SILAGE/HAYLAGE

Frosty Berseem Clover is an excellent choice for those desiring silage or haylage. Frosty can be planted by itself or with small grains. If planting with small grains, you will want to reduce the seeding rate of the small grain by 25-30% to help open up the canopy and facilitate the growth of the clover. When planting with small grains, harvest when the grains are at pre-boot to boot stage for best results.



Frosty Berseem Clover in Mississippi, approximately 60 days after planting. The deer were really hitting the clover outside the exclusion cage!

WILDLIFE PLOTS

Frosty Berseem Clover grows rapidly when temperatures exceed 60 degrees Fahrenheit. Frosty has shown excellent performance attracting wildlife throughout its lifecycle. Frosty can be planted by itself or in combination with oats and/or FIXatioN Balansa Clover. In trials at MSU Deer Lab in Mississippi 2014-15, no other clover drew the deer in like Frosty Berseem!

POLLINATORS

Frosty's maturity is late when compared to other annual clovers and bloom period is similar to that of red clover. As an annual clover, Frosty produces an abundance of flowers and is favored by pollinators over red clover. Pollinators that have been observed frequenting Frosty's blossoms include *Apis mellifera*, *Bombus californicus*, *Bombus griseocollis*, *Bombus vosnesenskii*, and *Synhalonia* sp. Consider incorporating Frosty in areas where pollinator habitat is desired. Not only is it good for the bees, but it's good for the soil and livestock!

COVER CROP

Frosty is a tap-rooted legume that is capable of breaking up hard pans and improving the soil. As a legume, Frosty is capable of fixing more than 150 lbs. of Nitrogen per acre. Its' deep rooting system is able to pull up Phosphorous, Potassium, and other nutrients from deep in the soil and make it available to following crops. When calculating the value of the N, P, and K, Frosty is capable of providing a net return of more than \$75/acre. Now that's a cover crop that pays!



The coating used for Frosty Berseem clover is purple. If it's not purple it's not Frosty*.

ALFALFA'S BEST FRIEND

Research has shown that by adding Frosty to your initial sowing of alfalfa (10-20% of the mix) that the synergy between the two results in greater forage yields and improved forage quality. By as much as 30%!

Frosty is not affected by the allelopathy of alfalfa. Have a thin or dead portion in your alfalfa field? Over-seed with Frosty and maintain the high quality forage across your entire field.

“All species of livestock and poultry will take readily to berseem forage and in many cases prefer it to that of alfalfa

*Frosty seed coated for the organic market will be greyish brown in color due to OMRI restrictions on coating colorants.



SALT TOLERANCE

Berseem clover is moderately tolerant to salt. This means that with good management there will be little impact on its growth through the use of irrigation water with a salinity content of over 1,500 iS/cm (1,000 ppm), but some yield loss will occur when the salinity content approaches 3,000 iS/cm (2,000 ppm).

MOISTURE REQUIREMENTS

Berseem clover is tolerant of 15 – 65 inches of precipitation, requiring almost the same quantity of water as alfalfa applied in the same manner and interval. Berseem is tolerant of moderate periods of waterlogged soils.

An appropriate moisture regimen would be:

- Germination period – light frequent applications of moisture for two weeks. Soil should be somewhat moist for maximum germination.
- Seedling stage – heavier infrequent moisture to encourage root growth
- Mature plants – growth will be dependent on the amount of moisture received. Approximately 4 inches/mo. Is sufficient for good hay production

FERTILIZER & pH REQUIREMENTS

Fertilizer requirements are similar to those of alfalfa. Phosphate fertilizer and occasionally sulfur is needed. A single application of super phosphate (0-25-0-10) applied prior to soil preparation at 200 lbs./A. is generally sufficient on most soils.

Berseem tolerates soils with pH ranging from 5.2 – 7.8.

LIVESTOCK

All species of livestock and poultry will take readily to berseem forage and in many cases prefer it to that of alfalfa. When planting with alfalfa carefully monitor the grazing as livestock may selectively graze the berseem clover. There are reports that replacing alfalfa with berseem clover in dairy rations can increase the butter fat per cow daily of more than 10% with no adverse effects on taste.