

Results of Balansa clover demonstrations in Arkansas

Wet soil tolerance of 4 clover species – SWREC Hope, AR

The objective of the trial was to compare the wet soil tolerance of arrowleaf, balansa, crimson, and white clover. Plot size was 6’x25’ with 4 replications. Clover was no-till planted into bermudagrass on October 8, 2020. Prior to planting the plots were mowed to 3”, the grass clippings removed, and glyphosate was applied to suppress the bermudagrass. Soil ph was 6.7, P level was 44 lbs/ac, & K was 146 lbs/ac. Fertilizer P & K as well as boron were applied according to soil test recommendations at planting. The site was moderate to poorly drained. Plots were sprayed with Raptor herbicide in March to control winter annual weeds. Canopy height and stand occupancy was taken at 3 points within each plot on May 6, 2021. Surface water was present frequently during winter and spring which caused poor growth of arrowleaf, crimson, and white clovers. Balansa clover seedlings were very small and difficult to find during winter, but grew rapidly in April producing excellent stands and dense canopies. Balansa clover had excellent growth in spring compared to other clover species tested. Stand counts and canopy heights were greater and more consistent for Balansa. Balansa clover was later maturing than Crimson clover but earlier than Arrowleaf.

Clover species	Canopy height (inches)	Stand occupancy (%)
Arrowleaf (Blackhawk)	9.4	40
Balansa (Fixation)	20	100
Crimson (Dixie)	16	92
White (Durana)	7	98

Photos taken: April 20, 2020



Crimson clover on the left.
Balansa clover on the right.



Arrowleaf clover on the left.
Balansa clover on the right.

Herbicide comparison for winter annual weed control

Early observations suggest that balansa clover seedlings are very slow to develop and are very susceptible to competition from winter annual weeds. Tall buttercup is especially a problem in the wet soils where the balansa clover is being evaluated. A trial was conducted to evaluate Balansa clover tolerance to herbicides. Plots were 10'x30' with a 5' buffer in-between treatments, non-replicated. Treatments were applied on March 10, and evaluated on April 26. Methylated seed oil (1%) was added to the Proclova treatments. Nonionic surfactant (0.25%) was added to the 2,4D and 2,4-DB.

Herbicide	Rate/ac	Buttercup control	Corn salad control	Balansa clover injury
Proclova	24 oz	100 %	100 %	70 %
Proclova	48 oz	100 %	100 %	100 %
2,4-D	32 oz	100 %	100 %	20 %
2,4-DB	32oz	100 %	100 %	0 %

On-farm demonstrations

Balansa clover demonstrations were planted in Faulkner, Greene, Miller, Pope, White, & Yell Counties. Fields were planted in October & November. Clover was slow to establish at each location. In most locations Balansa was planted with ryegrass.

Faulkner County

- Ryegrass and Balansa clover were no-till planted in 9 acres of short bermudagrass sod on November 8, 2020.
- Seeding rate was 20 lbs/ac ryegrass and 8 lbs/ac clover.
- Field was fertilized with 60 lbs/a N in early March and then again 4 weeks later.
- The field was grazed with 13 spring calving cow/calf pairs from Marcy 15 – June 1.
- The field was harvested for hay on June 19; yield was 2.4 bales/ac. Bales size 4'x5'.
- Balansa clover seemed to compete well with ryegrass in a well-managed grazing system.
- Producer comment: *"I have had good success with planting arrowleaf clover with ryegrass, but as the arrowleaf matures the cattle will often refuse the stems. With Balansa the cattle consumed the whole plant! Faulkner County – Producer"*

Greene County

- Balansa clover was no-till planted into bermudagrass sod October 5 at 12 lbs/a in 10' wide strips across 50% of the field. Every other pass was planted.
- The objective was increase plant density in strips to increase probability of good seed production for volunteer reseeding the following year.
- The field was rotationally grazed with 25 spring calving cows from April – June.
- Comment: *The county agent was impressed by how well the clover performed even with low soil test P & K levels. The soil ph was 6.2, but the P & K levels were in the very low category.*



Greene county. Photo taken: March 2021



Strip planting of balansa

clover in Greene County.

Photo taken on: May 2021

Miller County

- Ryegrass and Balansa clover were no-till planted in an 8-acre bermudagrass pasture on November 2, 2020.
- Seeding rate was 20 lbs/ac ryegrass and 8 lbs/ac clover.
- Ryegrass was well established within 3 weeks, with few clover plants.
- The week of February 15, the field received 18" of snow with temperatures dropping to -2 degrees F.
- On March 10 the ryegrass and clover seemed to be doing very well with minimum cold injury.
- 20 spring calving cow/calf pairs continuously grazed from March 15 – June 1.
- Producer comment: *"I did not notice a benefit from adding clover to my ryegrass. The ryegrass was faster growing and more competitive than the clover. I think I would have been better off to plant the clover by itself."*



Miller county. Photo taken: November 2020

Pope County

- Balansa clover was broadcast seeded in a 6-acre field on November 7 at 8 lbs/ac.
- Prior to seeding the field was sprayed with glyphosate to suppress the existing vegetation.
- The area is subject to frequent flooding during heavy rains and is poorly drained.
- A heavy infestation of tall buttercup out-competed the clover.

White County

- Ryegrass and Balansa clover was broadcast seeded on 2.5 acres in early October into Dallisgrass pasture.
- Prior to planting the field had been harvested for hay.
- The ryegrass performed well but clover establishment was poor.
- At the end of May the stand of balansa clover was less than 10%.

Yell County

- Ryegrass and Balansa clover were no-till planted on 5 acres on October 8, 2020 following harvest of a summer annual forage crop.
- Seeding rate was 25 lbs/ac ryegrass and 8 lbs/ac clover.
- Ryegrass and clover had emerged by within a week.
- The field was sprayed with 1 qt/ac of 2-4D in January to control the buttercups.
- Clover established throughout the field, but the performance was varied by drainage.
- Much of the field had standing water most of the winter and spring. On the higher ground the clover did exceptionally well, however the clover was sparse in the wettest parts.

- Producer comment: *“Over the years I’ve tried planting clover in this field, but never had a successful stand until now. I didn’t know clover would tolerant such wet natured ground. I’m going to start including balansa clover in with ryegrass”*



Balansa clover/ryegrass mixture – Yell County. April, 2021