Balansa clover increases ADG of cattle and forage biomass in recent study

Preliminary results from a 2018 trial by Mississippi State University found cattle grazing wheat planted with balansa clover had a 0.82 pounds per day weight gain advantage and cost savings of $5.39 per acre (see charts), compared to annual ryegrass systems planted with balansa clover.

The trial, conducted by Rocky Lemus, MSU Associate Extension and Research Professor, measured the average daily gain (ADG) of Brangus cross stocker calves at a stocking rate of two head per acre on cool-season grasses for two grazing periods of March 10 to April 9 and April 30 to May 17. Forage biomass was also measured in the oat, annual ryegrass and wheat pastures which were broadcasted with FIXatioN balansa clover at a rate of 10 pounds per acre.

During the first grazing period, cattle performed best on oats, with an ADG of 2.92 pounds per day, followed by wheat with an ADG of 2.86 pounds per day and annual ryegrass with an ADG of 2.79 pounds per day. However, during the second grazing period, cattle on wheat gained 3.88 pounds per day, compared to oats at 3.15 pounds per day and ryegrass at 2.31 pounds per day.

Pasture biomass was collected at the beginning of each grazing period, measured in pounds of dry matter (DM) per acre. Wheat produced the most forage with 1,459 pounds DM per acre in period one and 1,850 pounds DM per acre in period two. Oats followed with 1,278 pounds DM per acre in period one and 1,771pounds DM per acre in period two. While the annual ryegrass mixture did see an increase from 1,218 pounds DM per acre in period one to 1,408 pounds DM per acre in period two, it produced almost 700 pounds DM per acre less than wheat.

According to Lemus, the biomass increase seen across all the cool-season grass systems was due to the later maturity of the balansa clover.

“Balansa clover maintains a very upright growth which makes it very competitive with annual ryegrass or small grains,” explains Lemus. “Cool-season grasses like annual ryegrass or small grains like wheat, oats or rye, tend to mature much faster in the late spring, making them high in fiber, but low in protein. However, balansa clover is very high in digestibility and crude protein, which can maintain animal gains for an extended period of time compared to just having a grass monoculture system.

Cost advantage

As the cost of fertilizer and annual ryegrass continues to increase, producers can cash in significant savings by enhancing their grazing systems with the high protein and Nitrogen fixing properties of balansa clover.

Traditional grazing management of annual ryegrass in the Southeast would require 100 units of Nitrogen per acre, for a total production cost of $53.90 per acre. When planted with FIXatioN balansa clover, the price declines $1.80 per acre. However, the biggest cost advantage is for producers who graze cattle on wheat planted with FIXatioN balansa clover for a cost savings of $7.19 per acre against traditional annual ryegrass systems, and $5.39 per acre against annual ryegrass and balansa mixtures.

“For producers looking to save money on inputs and maximize outputs, cool-season grasses planted with balansa clover will work to their advantage,” says Lemus. “Not only does the Nitrogen fixation of balansa cut fertilizer costs, but its late maturity and high protein content allow for improved livestock performance.”

Cost analysis charts:

Wheat/Fixation Balansa Clover System			
	Wheat	**FIXation Balansa**	**Urea Nitrogen**
Seeding/application rate	1.5 bu/acre	10lbs/acre	25 units
Retail price	$5.74/bu	$2.90/lbs	$0.364/unit
Total cost	$8.61/acre	$29/acre	$9.10/acre
TOTAL SEED + N COST = $46.71/acre			

**Cost analysis configured by trial seeding/application rates and current retail prices*

Annual Ryegrass/Fixation Balansa Clover System			
	Annual Ryegrass	**FIXation Balansa**	**Urea Nitrogen**
Seeding/application rate	20lbs/acre	10lbs/acre	25 units
Retail price	$0.70/lbs	$2.90/lbs	$0.364/unit
Total cost	$14/acre	$29/acre	$9.10/acre
TOTAL SEED + N COST = $52.10/acre			

Traditional Annual Ryegrass + N System		
	Annual Ryegrass	**Urea Nitrogen**
Seeding/application rate	25lbs/acre	100 units
Retail price	$0.70/lbs	$0.364/unit
Total cost	$17.50/acre	$36.40/acre
TOTAL SEED + N COST = $53.90/acre		