

# Optimizing Stocking Rates

by Adam Russell, Texas A&M University

Profits in stocker production can be as green as winter pastures when conditions are right and producers apply correct stocking strategies, according to a Texas A&M AgriLife Research expert. Research trials at the Texas A&M AgriLife Research and Extension Center in Overton are focusing on identifying optimal strategies and stocking rates for producers.

Monte Rouquette, an AgriLife Research forage physiologist in Overton, said his research on proper stocking rates for winter pastures considers various hypothetical scenarios producers might face when investing in winter and spring forages.

For producers, success or failure in their investment in small grain and ryegrass seed, planting and fertilizing is determined by the weight gained by each calf and gain per acre by April or May, Rouquette said. The average daily gain, gain per animal and gain per acre will determine whether a producer's decision to plant winter pastures was worthwhile.

Rouquette said evaluating profits after the fact is always easy, but that his goal is to provide producers "advance warning" and expectation for gains from different stocking strategies.

"The research emphasis is to evaluate stocking strategies for stocker cattle and for cows and calves," he said. "The opportunities are to know the extent of forage growth to expect in the fall, winter and spring, and what kind of stocking rate needs to be used to make appropriate forage utilization. That is where you can make or break an opportunity for profit."

## Stocking strategies

Rouquette incorporates different stocking strategies, or what he calls treatments, based on the timing of forage production and stocking rates. He may use moderate to light stocking rates and strategies in the fall, but then increase the stocking rate in the spring, February through April, to match the forage growth.

"Sometimes we miss the optimum gains with a treatment and sometimes we hit it, but that is what we are looking at — how to optimize the use of the available forage," he said.

To start his most recent trial, Rouquette recently placed two 600-pound (lb.) winter-born weaned stocker calves, or 1,200 pounds of bodyweight, per acre on several separate

winter pastures of Mayton rye and Nelson ryegrass mix planted in October and fertilized in late November.

Rouquette said the winter pastures are planted with 100 lb. of Mayton rye and 30 lb. of Nelson ryegrass per acre and then receive between 150 lb. and 200 lb. of nitrogen per acre in split applications.

Winter and spring stocking rates vary with climatic conditions, he said. Experiments with certain forage varieties and/or stocking rates last two to five seasons.

## Choosing varieties

Rouquette's research has historically involved several different varieties and variety mixtures of forages, including Elbon rye, Gulf and TAM 90 ryegrasses.

The grazing strategies Rouquette incorporates are based on plot data information that has been collected during the past 30 years. This also includes data compiled by forage breeders, forage physiologists and soil fertility researchers at Overton.

The small plot research identifies varieties that are good for East Texas soils and weather conditions, when to plant, when to fertilize, when to initiate stocking and how many animals to stock per acre.

For a more

comprehensive look at Rouquette's stocking strategies go to <http://bit.ly/2iZ29uG>.

Previous small-plot data suggests that cereal grain rye is the most productive forage during cold winter months, he said.

The rye-ryegrass mix has a minor forage production peak in the fall, Rouquette said, followed by almost no growth in January. By Feb. 15, when days begin getting longer, and nights and days start to get warmer, the pastures begin what Rouquette calls the "spring flush."

Rouquette said the winter pastures can produce forage from mid-February through late April to support stocking rates two to three times the fall stocking rate if weather conditions allow and pastures are fertilized properly.

Rouquette said the grazing studies he performs are done with replicated small pastures of about 3-4 acres each.

## Maximizing investment

Producers have a lot to consider when it comes to maximizing their investment in animals, including forage, he said. Animal

health is paramount because a dead animal is a total loss.

There is the cost of cattle, the estimated cost of gains by cattle before sale and eventual price of cattle at market, he said. Producers must also consider what the value of their cattle is in October and what the predicted value will be based on expected gains and the market in April or May.

Producers should expect an average of 2 lb.-3 lb. per day gain from calves, but gains depend on stocking rates and the amount of forage available for consumption, Rouquette said.

Too many animals can overgraze a pasture and too few can lead to unused forage, he said.

Producers should have a Plan A, Plan B and Plan C that can be employed if factors such as uncooperative weather or overstocking occur, he said. For instance, moving the cattle to a pasture that is not overseeded where hay or supplements can be provided might be used as a sacrifice area when forage growth cannot provide adequate ration for cattle. This would be better than allowing the winter pasture being overgrazed to below 2- to 3-inch grass height, which doesn't produce proper regrowth, especially during the spring flush.

"You've got to have an escape route in case you've grazed forage too severely," he said. "Most producers don't plan to overstock, but if they are not prepared for the next 30 days of weather events and prepared to make adjustments to their stocking rates, they could find themselves in trouble."

Rouquette said winter grazing requires constant checking and possible adjustments, whether it's removing or adding cattle, adding fertilizer or moving electric fencing. It's better to be in a position where cattle are added to adjust to spring flush than removing cattle because pastures are overstocked, he said.

A great indicator of proper stocking rates can be made by a visual appraisal of the height of forage and spot grazing, which means areas of refusal where cattle have defecated and moved to graze other parts of the pasture, Rouquette said.

"Probably the most difficult thing in production is making a stocking rate work," he said. "It's always better to be lightly stocked and have to put more calves and cows in a pasture for adjustment rather than have too many stocker cattle and not have options other than to sell at too light a weight."

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