Managing Winter Annual Pastures

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If you, like many of your neighbors, have decided to plant winter annuals (annual ryegrass and/or small grains like oats, rye or wheat) this fall for grazing through the winter and possible hay or silage next spring, then you need to use management practices that will maximize the return on this investment. Successful establishment is only a piece of the puzzle; soil fertility, grazing management and livestock management have as much (or more) influence on productivity as planting date, establishment method or variety selection.

Soil fertility is a primary key to forage yield for this production system. We recommend that soil phosphorus and potassium deficiencies are met either with poultry litter or commercial fertilizer at establishment and that at least 50 pounds of actual nitrogen per acre (150 pounds of ammonium nitrate or 110 pounds of urea per acre) be applied to pastures in both the fall and the spring to drive forage yield. This is probably the most expensive part of the entire system, and it is essential to apply this fertilizer to obtain the forage yields necessary for profitability. For example, if no phosphorus or potassium is required, the cost of nitrogen fertilizer alone can be 40 to 50 percent of the entire establishment cost; while if the best forage producing varieties are purchased, then the seed cost is only 25 to 30 percent of the establishment cost (this also indicates how little true savings there are in using cheaper, less productive varieties for annual pastures).

Proper grazing management also has a large impact on animal performance and, thus, the profitability of winter pasture production systems. If stocking rates of growing cattle can be matched to the available forage on a pasture, then weight gains can be maintained at an acceptable level. Cattle cannot achieve adequate forage intake for production if small grain pastures contain less than 1,000 pounds of forage dry matter per acre. On the average, each inch of pasture height is equivalent to about 200 pounds of forage dry matter per acre, so pastures must be managed to maintain about 5 inches of residual height. Over the years, we have found that if forage allowance is 2.5 pounds of forage dry matter per pound of calf, body weight at turnout on pasture (1,000 pounds of forage for a 400 pound calf) is adequate for gains of 2 pounds per day, but if calves are stocked at forage allowance of 5 pounds of forage per pound of calf body weight, then their potential gain is 2.75 pounds per day. If forage allowance is allowed to go below these threshold values, then moderate supplementation rates of 0.75 percent of body weight (3 pounds of supplement per day for a 400-pound calf) can be used to replace forage deficiency and maintain acceptable performance.

And finally, technologies developed to enhance animal performance should be used to increase weight gains of growing cattle. The pasture production costs are a fixed cost. If these gains can be diluted over more gain, then cost per pound of body weight gain can be reduced. Research at the University of Arkansas Southwest Research and Extension Center at Hope and the Livestock and Forestry Research Station near Batesville indicate that growth-promoting implants can increase gain of calves on winter pasture by 0.3 pound per day and ionophores (compounds that alter the rumen environment, increasing nutrient use efficiency) increase weight gains by 0.2 pound per day. Since these technologies work in different ways, they can be used together and still get the same gain response with both, so utilizing ionophores and implants together for wheat pasture stocker cattle can increase gains by 20 percent and decrease cost of gain by 25 percent. Implanting can increase net return per steer by $62. Ionophores can increase net return per steer by up to $52, depending on supplement type used as a carrier, whereas total profitability may be increased by over $100/steer when both technologies are used. Δ

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