

Which Winter Annual Should You Plant for Optimal Cattle Performance?



Figure 1. Greenchopping winter annuals for digestibility experiment at NFREC Beef Unit. Photo: Nicolas DiLorenzo



Figure 2. Hand feeding greenchopping winter annuals in the Feed Efficiency Facility at NFREC Beef Unit. Photo: Nicolas DiLorenzo

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Successful business people will say that one of the keys to maintaining a high level of productivity in a company relies, partially, in making good decisions. The ability to stay competitive in any enterprise is often related to the ability to access and interpret the information available to make sound decisions. In summary, information is a very hot commodity when it comes to making the right decisions.

Agricultural enterprises are not much different than other businesses, and the same rules apply when it comes to the role of technology and timely access to information on the success of the operation and overall profitability. Because cattle prices have dropped significantly from a year ago, and margins have tightened considerably, the ability to make informed decisions on the day to day operation becomes more relevant than ever. As winter approaches, producers again the decisions of how to supplement cattle, what type of winter annuals to plant for grazing, and when to plant? Making an educated decision (or an “educated guess” for that matter) can ultimately improve the economic sustainability, or help achieve the production objectives of a cattle operation. For example, when choosing the optimal winter annual for grazing, one of the goals is to maximize the production of beef per acre when compared to other alternatives. In order to do so, a combination of quality and quantity are necessary. Quantity of forage produced is one of the key aspects on variety selections, and many of our State Forage Specialists work diligently in this area. As an example of this, the 2016 Cool-Season Forage Variety Recommendations for Florida was made available in a previous issue of this e-newsletter, containing very useful and timely information about winter annual varieties available.

The quality of the forage, on the other hand, is determined by the concentration of nutrients in it, and the ability of animals to digest it. The

digestibility of a forage dictates its energy content, and thus is essential in determining animal performance. Measuring the digestibility of a forage can be very tricky and involves either: 1) a laboratory in vitro procedure that provides a very reliable estimate; or 2) an in vivo measurement of digestibility (the “gold standard”) that involves daily feed and fecal sample collections, individual animal intake measurements, and laboratory analyses. Thus, by knowing the digestibility of a forage we can have an idea of its energy content, often expressed as Total Digestible Nutrients (TDN). In turn, knowing the digestibility of a forage can help decide which forage or combination of forages may be best in terms of individual animal productivity.

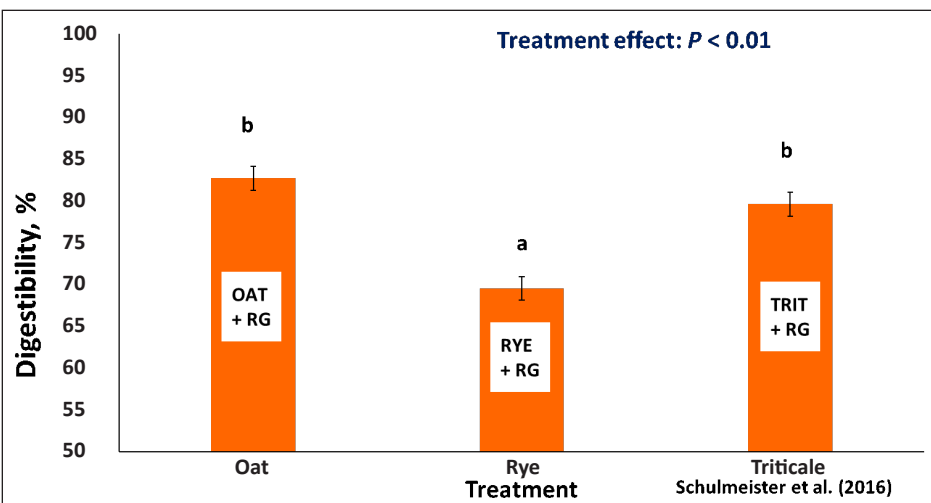


Figure 3. Total tract organic matter (OM) digestibility of various winter annuals fed as greenchopped forages (OAT was Horizon 201, RYE was FL 401, TRIT was TriCal 342 triticale, and RG was Prine ryegrass).

Taking advantage of the technology available with the University of Florida Feed Efficiency Facility (UF-FEF) at NFREC, researchers designed an experiment aimed at, among other objectives, to measure the digestibility of winter annual forages fed free-choice. For two consecutive years, cattle were fed greenchopped winter annual pastures comprised of: 1) rye + ryegrass; 2) triticale + ryegrass; or 3) oat + ryegrass to growing beef cattle housed at the UF-FEF. Figures 1 and 2, above, illustrate the procedures followed. This was a very labor intensive enterprise, with daily chopping of forage and transport from the pasture to cattle housed in the Feed Efficiency Facility (UF-FEF), thus we restricted the data collection each year to a total of 28 days:

14 days of adaptation, and 14 days of intake and

digestibility measurements. As can be seen in the summary below (Figure 3) the digestibility of oat + ryegrass or triticale + ryegrass was superior to that of rye + ryegrass in this two-year trial. Also note the digestibility of these winter forages is quite high (approx. 80% TDN), which can be comparable to the energy provided when feeding corn gluten feed to cattle.

Take Home Message

As for when and if to plant, it all really depends on when and how much rain you get. The later in the season you have to wait, the shorter the grazing season and the lower the return on investment. Hopefully adequate rain will come soon. When deciding on which winter annuals to plant, take into consideration the tools made available by the University of Florida in terms of varieties with both optimal yield potential and nutritional quality. When comparing some of the most common winter annual grazing systems in central and north Florida, the combination of either oats or triticale (at 85 lb/ac each) with ryegrass (15 lb/ac) seems to have a greater digestibility than the combination of rye (70 lb/ac) and ryegrass (15 lb/ac). The high digestibility in these annual forages certainly contributes to the average daily gains (ADG) observed in some of our studies, where cattle grazing the mixtures containing oats and triticale gained an average of 2.1 lb/d over a 112 day period.

This article is also available at <http://nwdistrict.ifas.ufl.edu/phag/2016/11/11/which-winter-annual-should-you-plant-for-optimal-cattle-performance/>