



The Economics of Grazing Cool-Season Annual Forages

Chris Prevatt, Jose Dubeux, Joao Vendramini, and Marcelo Wallau

Published in *The Florida Cattleman and Livestock Journal*, July 2019

Due to limited forage availability and lower forage quality, producers throughout the Southeast feed hay and other feedstuffs during the fall, winter, and early spring. Feeding during this time period could last from 90 to 180 days based on individual management programs, resources, and weather conditions.

Winter feed costs are a large expense for many cattle producers. Thus, alternative winter-feeding programs need to be evaluated to reduce the cost of winter feeding while meeting the nutritional needs of cattle. Grazing cool-season annual forages is one alternative that may provide producers with a cost-effective way to reduce hay, supplement, and stored feed costs while potentially extending the grazing season by three or more months.

Cool-season annual forages can be an important part of forage production systems as they allow dormant warm-season perennial pastures to be utilized. These acres would normally be non-productive during the winter months, but can become productive acres during the winter and early spring months. Although cool-season annual forages are costly to establish, (\$125-\$300/acre depending on planting method and fertilization) their nutritive values are high in total digestible nutrients (*TDN*) and crude protein (*CP*). The high nutritive value of cool-season annual forages can provide cattle producers with a less costly substitute for supplementing their herd's nutritional needs.

The cost of establishment, amount of forage production, and level of forage utilization are three important factors in determining the economics of planting and grazing cool-season annual forages. Producer results for these three key variables can vary greatly across the Southeastern United States. Table 1 provides an analysis of cool-season annual forage cost per dry matter ton consumed (*\$/DM ton*) for various levels of forage production and production cost per acre.

Table 1. An Analysis of Cool-Season Annual Forage Cost Per Dry Matter Ton Consumed For Various Levels of Forage Production and Production Cost Per Acre

Forage Production, DM lbs./acre	Forage Utilization*, DM lbs./acre	Cool-Season Annual Forage Production Costs, \$/acre							
		\$125	\$150	\$175	\$200	\$225	\$250	\$275	\$300
		Total Cost of Growing and Grazing Per Dry Matter Ton Consumed							
3,000	1,500	\$167	\$200	\$233	\$267	\$300	\$333	\$367	\$400
4,000	2,000	\$125	\$150	\$175	\$200	\$225	\$250	\$275	\$300
5,000	2,500	\$100	\$120	\$140	\$160	\$180	\$200	\$220	\$240
6,000	3,000	\$83	\$100	\$117	\$133	\$150	\$167	\$183	\$200
7,000	3,500	\$71	\$86	\$100	\$114	\$129	\$143	\$157	\$171
8,000	4,000	\$63	\$75	\$88	\$100	\$113	\$125	\$138	\$150
9,000	4,500	\$56	\$67	\$78	\$89	\$100	\$111	\$122	\$133
10,000	5,000	\$50	\$60	\$70	\$80	\$90	\$100	\$110	\$120

*Forage utilization was assumed to be 50 percent of the available forage production (column one x 0.50)

The first column in Table 1 describes the level of cool-season annual forage production per acre (*DM lbs./acre*) and ranges from 3,000 to 10,000 dry matter pounds per acre. Forage utilization or consumption of forage, as shown in the second column was assumed to be 50 percent of the total available forage production. Forage utilization in Table 1 ranges from 1,500 to 5,000 dry matter pounds per acre. The data in columns three through ten represent the total cost of growing and grazing cool-season annual forages per dry matter ton consumed. As described in the interior of Table 1, the total cost of growing and grazing ranged from \$50 to \$400 per dry matter ton consumed.

Table 2 provides a detailed view of the variables and equations used to determine the total cost of growing and grazing cool-season annual forages per dry matter ton consumed. A forage production level of 6,000 *DM lbs./acre*, forage utilization of 50%, and a cool-season annual forage production cost of \$175/*acre* results in a total cost of growing and grazing cool-season annual forages of \$117/*DM ton consumed*.

Table 2. Calculating the Cost Per Dry Matter Ton of Forage Consumed

Forage Production: 6,000 DM lbs./acre

Forage Utilization: 50%

Cool-Season Annual Forage Production Costs: \$175/acre

Forage Utilization (DM lbs./acre or DM tons/acre)

$$= \text{Forage Production DM lbs./acre} \times \text{Forage Utilization \%}$$

$$\text{Forage Utilization} = 6,000 \text{ DM lbs./acre} \times 50\% = 3,000 \text{ DM lbs./acre}$$

$$\text{Forage Utilization} = \frac{3,000 \text{ DM lbs./acre}}{2,000 \text{ lbs./ton}} = 1.5 \text{ DM tons/acre}$$

Cost of Growing and Grazing Per Dry Matter Ton Consumed

$$= \frac{\text{Cool Season Annual Forage Production Costs (\$/acre)}}{\text{Forage Utilization (DM tons/acre)}}$$

$$\text{Cost of Growing and Grazing Per Dry Matter Ton Consumed} = \frac{\$175/\text{acre}}{1.5 \text{ DM tons/acre}}$$

$$\text{Cost of Growing and Grazing Per Dry Matter Ton Consumed} = \$117/\text{DM ton}$$

The level of forage and feed utilization is a very important and often over-looked variable when determining the economics of winter-feeding systems. Utilization measures the amount of forage or feed consumed by the cattle. This provides us with the information to adjust for waste and calculate the total cost of using the feedstuff. Regardless of the feedstuff used (cool-season annual forages, hay, stockpiled forage, by-product commodities, liquid supplement, etc.), cost should be evaluated on the amount utilized or consumed, not the purchase price or the cost of production for raised feedstuffs. Producers should include all the costs associated with feedstuffs (cost to raise or purchase, transport, store, feed, waste, etc.). Producers can use the information available in Tables 1 and 2 to compare with the total cost of other feedstuffs. Some will likely be surprised by how much winter feeding really costs per dry matter ton consumed.

Basic cowboy economics tells us that it's cheaper and easier to let the cows harvest the forage. However, the economics of cool-season annual forages will depend on an individual's specific situation. Cool-season annual forages can be a viable economic option for producers who can control their annual forage production costs while attaining adequate levels of forage production and utilization.

For more information contact Chris at prevacg@ufl.edu.