



## **Maintaining Forage Quality During and After Production**

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### **Introduction**

Forage quality can be defined as the capacity of forage to supply animal nutrient requirements so as to achieve a desired animal response. It can be measured in terms of pounds of grain, milk production, reproductive efficiencies or conception rates. Forage quality during production and utilization is influenced by several factors. These are genetics, the environment, stage of maturity and management practices on the farm. The intake or the amount of forage an animal consumes is dependent on its nutritive value, digestibility, palatability and the condition of the pasture or sward. Forages with relatively high levels of fiber are slowly digested by ruminants, and take a longer time to pass through the digestive tract. Consequently, intake may be reduced as a result of poor forage quality or digestibility.

### **Genetics and Environment**

Forage legumes are higher in crude protein and they have higher rates of fiber digestion. Growing legumes with grass improves the nutritive value of the forage mixture when compared with grass alone. There are differences between cool season grasses and warm season grasses as well. Cool season grasses are more digestible than warm season grasses in general. Environmental temperatures influence the quality of forages produced. Generally, plants grown in cooler temperatures produce higher quality forages than those grown at higher temperatures. Further, cool season species grow more during the cooler months of the year. In general, forages of most species tend to be of a lower quality if they are produced in a warmer region than a cooler region. For more information on cultivars recommended for North Florida, please visit this website. <http://agronomy.ifas.ufl.edu/foragesofflorida/>

### **Stage of Maturity**

The stage of maturity is the most important factor that determines the quality of forage. During the first couple of weeks the crude protein and digestibility of forages are high. As the plants mature, they deposit more fiber in their cell walls. In addition, the proportion of the leaves to stem declines thereby reducing crude protein levels and forage digestibility. For more information on this topic you may wish to visit these websites.

<https://edis.ifas.ufl.edu/ag332>

<http://edis.ifas.ufl.edu/ag161>

### **Management**

Good soil fertility and agronomic practices are important to produce forage of high quality. A composite soil sample taken from your land to determine the liming and fertilization requirements of your soil is a good farm practice. This should be done well before the growing season because the application of lime, if recommended, should be done about six (6) months before the growing season. Pest and diseases including weeds can reduce the quality of forages. Adequate pest control measures are recommended to prevent loss in forage quality.

<http://edis.ifas.ufl.edu/ag179>

<http://edis.ifas.ufl.edu/pdffiles/WG/WG00600.pdf>

### **Pasture Management**

The quality of forages on pastures can be reduced by poor grazing practices. Firstly, animals should be allowed on pastures when yield and quality is at their optimum. This practice would encourage increase intake. Secondly, avoid overgrazing by using recommended stocking rates. Overgrazing reduces the animal ability to select plant species or plant parts of higher nutritive value. Furthermore, overgrazing reduces the net root mass, thereby reducing the energy stored in the plant roots. When adequate energy is stored in a plant, it enables the plant to rebound or grow vigorously in the next growing season or period.

<http://edis.ifas.ufl.edu/ag160>

### **Harvesting and Storage**

Make hay when the sun shines. You may wish to check your weather outlook before haying. Ensure the cut forage is properly dried because if it is not, the plant continues to respire thereby reducing the nutritive value of the hay. Hay baled when it is too wet tends to encourage mold growth which reduces palatability. If possible, store baled hay away from rain because this can cause leaching of the sugar in the harvested plant. This leads to poor quality hay.

<http://edis.ifas.ufl.edu/pdffiles/AA/AA25100.pdf>

<http://edis.ifas.ufl.edu/an145>