Use It Or Lose It - Waste In Pastures

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Last month I wrote about rotational stocking (often called "rotational grazing") and how it has the potential to improve pasture carrying capacity and reduce waste. Waste is something that we often forget about in grazing of pastures. With any crop that we grow such as peanuts, cotton, corn, or canola, we would like to harvest 100% of the yield but realistically we know that a portion of it will be wasted. Generally, the waste in these crops is relatively low. In contrast, waste in forage crops can be high.

How much is wasted?

When cut for hay, about 70 to 80% will be conserved. However, with the usual continuous stocking method of grazing, the percent utilization ranges from only 20 to 50% of the forage. Rotational stocking with a 3 to 7 day rotation increases it to 50 to 65%, pasture rotation every 2 days to 55 to 70%, and daily rotation to 60 to 75%. Thus, in most of our pastures, there is a great deal of wasted forage that is never consumed by cattle. Most of this loss occurs during periods of heavy growth when there is a surplus beyond what is needed for the cattle population on a farm. Late winter and spring are often periods of surplus forage on tall fescue, ryegrass, and wheat pastures. Midsummer is often a surplus period for bermudagrass and bahiagrass pastures.

Sources of waste in pastures

What causes the waste in pastures? The most obvious one is fouling of grass by defecation and urination, making the forage unattractive to grazing animals. Another one is trampling of grass and, when it is wet, getting mud on the leaf tissue so it is unappealing to the animal. As grass leaves age, they become senile and inactive, finally dying. Masses of old dead leaves are rejected by the animal and shade the basal portion of the grass plant, resulting in few new leaf buds developing. As pastures accumulate large amounts of surplus forage during periods of very active growth, the forage becomes more mature with a higher percentage of stems which are rejected by the grazing animal. When animals graze they may not consume all of a particular bite of grass but spit out a portion. Cattle grazing bermudagrass spit out coarse woody stolons (woody stem-like material) which will then lie on the surface of the pasture. Taken together, all of these sources of waste add up to a lot of forage that will never be consumed by the grazing animal.

How can waste be reduced in pastures?

As noted earlier, a rotational stocking method will reduce the amount of waste and result in more of the available forage being eaten by the grazing animal. Reducing waste is desirable but if high performing animals such as growing steers are forced to eat a lot of dead leaves and stems of lower quality, daily gain will decrease. Thus, it is important that animals be given adequate opportunity to select high-quality forage if they are to perform at a high level. Beef cows, on the other hand, are able to utilize lower quality forage.

The problem of utilizing excess forage during periods of surplus growth and providing green leafy material for the grazing animal can be met either (1) by adjusting animal numbers according to changes in forage available or (2) confining animals to a smaller area of the pasture and harvesting hay from fenced off areas. Dividing the pasture area into 6 to 8 paddocks with single strand electric fence and using a rotational stocking method is one way to improve utilization. However, many cattle producers prefer to use just a few pastures for minimal rotation and possibly fence off a portion of a pasture for hay during surplus periods. Thus, they can maintain young green leaves for their cattle and reduce waste. This eliminates the problem of cattle grazing belly-deep in grass with a large amount of trampled mature forage in the pasture.

To improve pasture utilization, a knowledge of forage available is needed. For instance, the dry forage available/inch/acre for several common forage species are approximately: arrowleaf clover 225, crimson clover 200, small grains (oats, rye, wheat) 150, annual ryegrass 250, bermudagrass 260, and tall fescue 210. With experience, a manager can use forage height to estimate the amount of forage present and calculate how long it will feed the animals in a paddock. As forage is kept shorter and leafier, more of it will be eaten and less wasted. If you don't use the forage, you lose it!