

Using Grazing Wedges to Match Beef Cattle Nutrient Need with Pasture Resources while Reducing Feed and Fertility Costs

Grazing wedges are graphs of the height of individual paddocks in a larger pasture system (Figure 1). With web-based applications available through University of Missouri Extension, they can be quickly created after producers upload pasture data from their farm each week of the grazing season. Grazing wedges allow producers to “see” the relative amount of forage in each paddock of their rotationally stocked pastures. As a result, producers can make more informed management decisions with regard to the timing of grazing and harvesting events or pasture rest periods. The goal of using grazing wedges is to keep pasture growth rates in a linear phase for as much of the growing season as possible. The most important aspect to keep grass growth in a linear phase is to not overgraze. But also grass that is allowed to grow too tall before harvesting can be under-utilized and undergo leaf senescence which keeps the growth rate out of the linear phase.

To assess the impacts of the grazing wedge management system on pasture productivity, we measured the number of paddocks on each farm and how many times each paddock was measured. Additionally, we measured the % of paddocks that were in target height, too mature, and overgrazed at each farm over two years. These measurements allowed us to determine how use of grazing wedges affected grazing practices over time.

From early spring 2010 until the end of grazing in 2011, five cooperating farms measured forage mass weekly using a rising plate meter. The farms measured were the MU Wurdack farm, near Cook Station, MO, the Pogue 1 farm near Rolla, MO, the West Unit farm near Appleton City in St. Clair County, MO, the 4-H Farm near Lincoln, MO and the Hubach farm near Rea, MO. The number of paddocks on each farm ranged from 8-21 (Table 1) and the number of measurements between the years 2010-2011 ranged from 28-61.

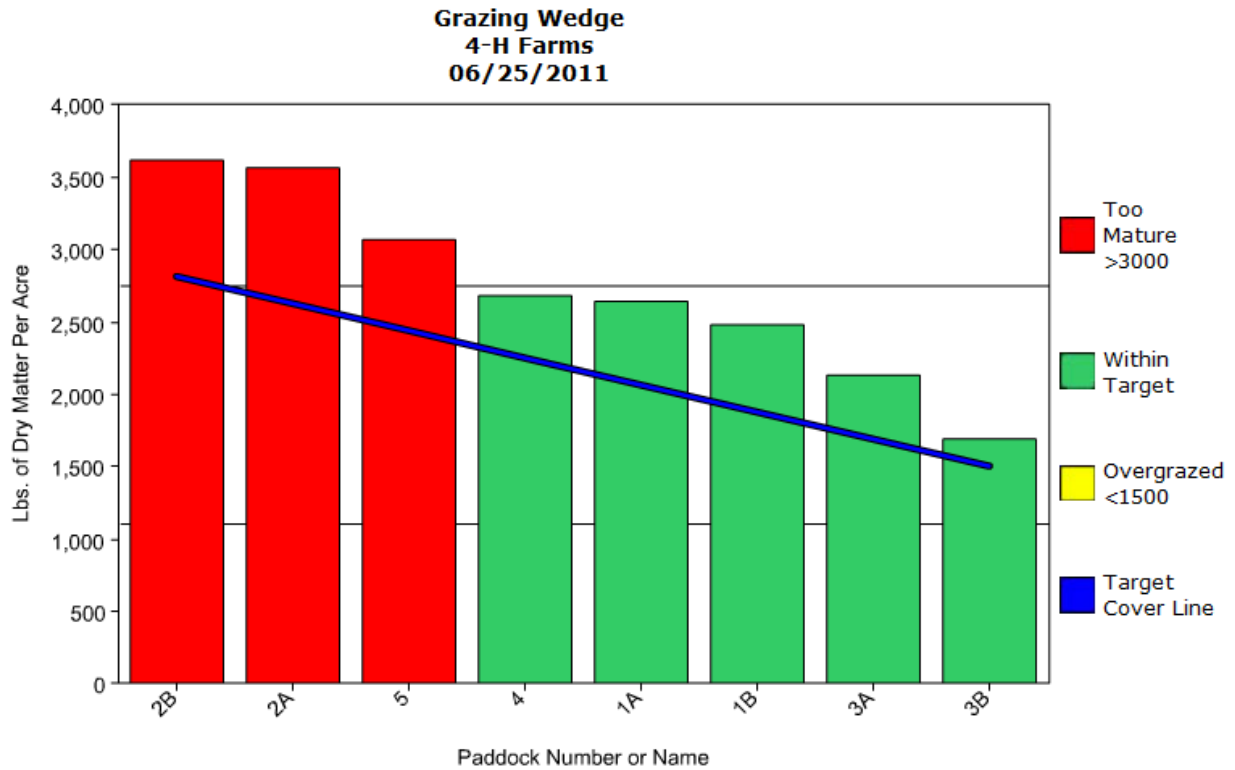
For the Wurdack, Pogue 1, 4-H, and West Unit farms, the number of paddocks within the target range improved from 2010-2011 (Table 1). For example, at the Wurdack farm, forage was within target 73% of the time in 2010; in 2011, this improved to 86% (Figure 3). Similar trends were observed at the other test locations except for Hubach farm. At that farm, in 2010 the percentage of forage that was within target was 69% but in 2011 it decreased to 57%. A closer look at the data for this location shows that overgrazing went from zero to nearly 9% in 2011.

While cooperators used rotational stocking and grazing wedges at the Hubach farm, the data show that overgrazing can still be an issue. Overall, on cooperating farms the forage was within target 56% of the time in 2010 and increased to 71% in 2011. Four out of the five farms that adopted the grazing wedge management system improved their forage management from 2010-2011. With less mature forage and increased forage utilizations, animal output per unit area should improve.

Table 1. Number of measurements and paddocks for cooperating farms

Farm	Location	# of paddocks	# of measurements	
			2010	2011
4-H Farms	Lincoln	8	35	26
Hubach	Rea	10	14	9
Pogue 1	Rolla	8	26	18
MU Wurdack	Cook Station	10	18	10
West Unit	Appleton City	21	14	17

Figure 1. A grazing wedge created with online software developed by University of Missouri Extension. Producers collect pasture data, enter the values into the online database, and are quickly supplied with a histogram of relative pasture cover in each of their paddocks.



Summary of KEY INDICATORS for Grazing Management and Animal Performance		
Livestock Class		Beef Cow-Calf
Estimated Growth Rate (lbs of dry matter accumulation per acre per day)		22
Cover when cows turned onto a paddock (lbs DM/Acre)	Actual: 3622	Ideal: 3000
Cover when cows removed from paddock (lbs DM/Acre)	Actual: 1690	Ideal: 1500
Average Pasture Cover (lbs DM/Acre)	Actual: 2738	Ideal: 2250

Figure 2. Percent of paddocks on individual farms that were in target, mature, or overgrazed in 2010-2011.

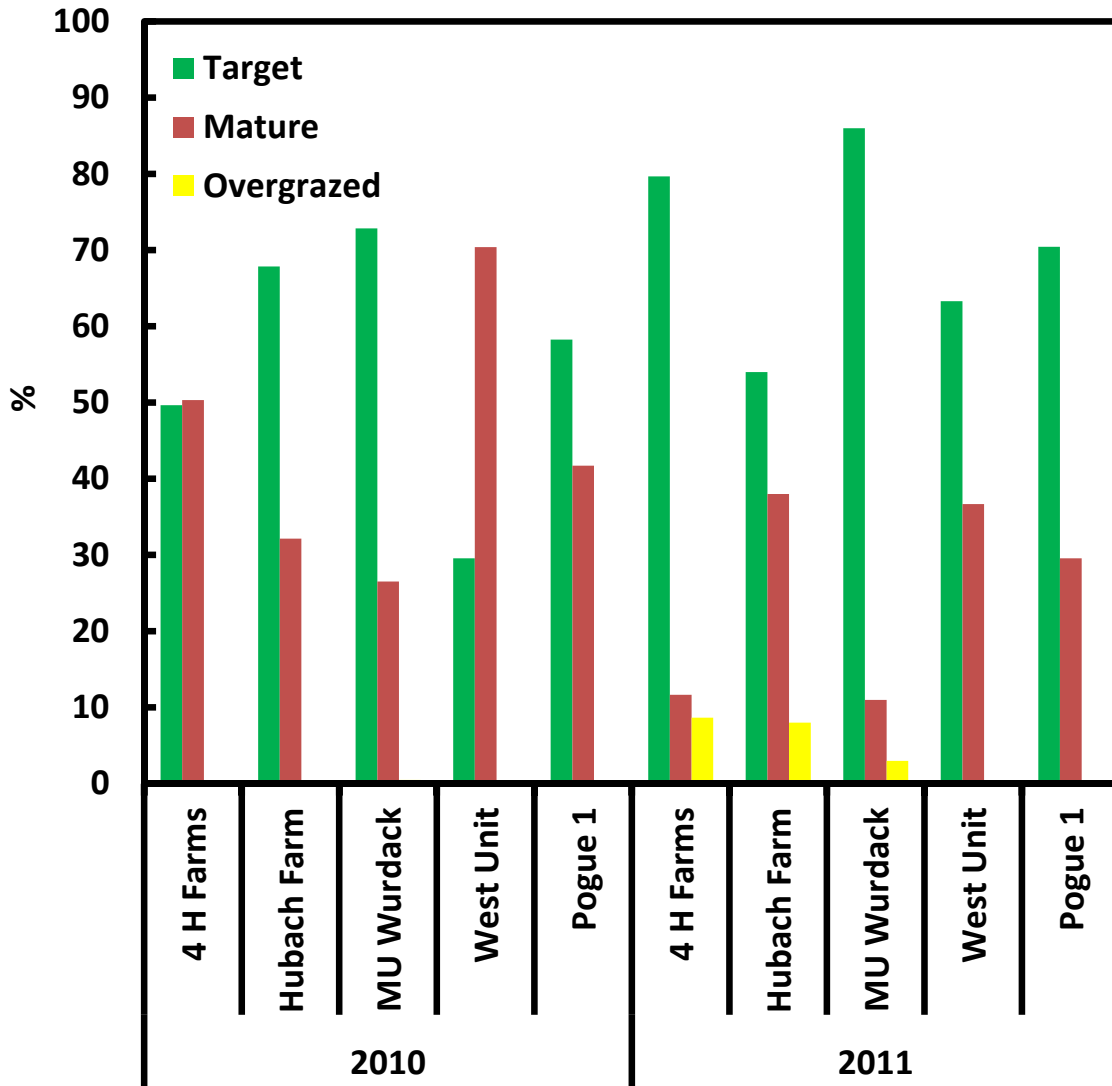


Figure 3. Percent of paddocks averaged across all cooperating farms that were in target, mature, or overgrazed in 2010-2011.

