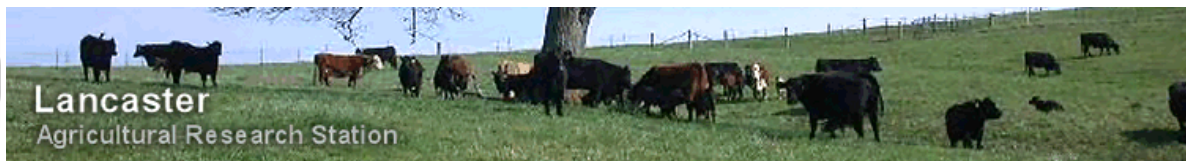




College of
Agricultural & Life Sciences
UNIVERSITY OF WISCONSIN-MADISON



April 23, 2013

2013 Pasture Management Tips: After the Drought

Rhonda R. Gildersleeve, UW Extension Grazing Specialist

Introduction

Wisconsin pastures will need extra TLC in 2013 to overcome the extremely dry and hot conditions we experienced during the 2012 growing season. Plan to get out on your pastures early this spring to assess their condition, then review previous soil fertility, weed, and grazing records to anticipate site specific concerns as you develop this season's management plans.

Plan Pasture and Forage Needs

Pasture forages adapted to the Upper Midwest have definite seasonal patterns of quality and production. As producers, we must plan for those periods of minimal forage production as well as be prepared for unexpected losses to due weather fluctuations. To aid in pasture planning, a pasture budget calculator (Excel spreadsheet) is available at the University of Wisconsin Forage Research and Extension website:

<http://www.uwex.edu/ces/forage/>.

Assess Pasture Condition

Limited research information is available on effects of severe drought on cool season grasses in the Upper Midwest. It is reasonable to expect that pastures may have thinner stands due to drought damage and exhibit slower early season growth in spring 2013. *Determining Pasture Condition* (A3667) is a UW Extension factsheet that can aid producers in assessing pasture condition, and is available online:

<http://learningstore.uwex.edu/Assets/pdfs/A3667.pdf> .

Assess conditions of pastures across your farm and prioritize areas that may need extra management attention during the 2013 growing season.

Control Weeds

Weed competition may increase in drought damaged pastures. Increased bare ground in pastures that were grazed hard in 2012 is likely to have an increased germination percentage of all weed classes (annual, biennial, perennial), and potentially toxic species will be of particular concern in 2013. Scout pastures in early spring to determine where weed issues may need to be addressed and what control methods will be most effective. Contact your local UW Extension office for assistance with identification of weeds that you do not recognize and to obtain current University recommendations for effective control options. More detailed information on identification, emergence timing and control options for weeds is available at the UW Weed Science website:

<http://fyi.uwex.edu/weedsci/> .

Address Soil Fertility

Attention paid to soil fertility increases capacity of pastures to tolerate suboptimal growing conditions such as variable weather patterns, insect pests or weed competition, and results in more consistent forage production and quality. Regular soil testing every 3 to 4 years, to maintain or improve soil nutrient levels is recommended for pastures as well as other crops.

For mixed pastures where 30% or more legume content is desired, soil fertility should be optimized for pH, phosphorous (P) and potassium (K) to support the nutrient needs of the legumes, as these species generally require a higher soil nutrient status. Secondary or trace nutrients such as sulfur and boron, may also be needed in some locations. General pasture soil fertility guidelines are provided in Table 1.

Table 1. Wisconsin pasture soil fertility guidelines

pH (lime requirement)	6.0 + grasses, birdsfoot trefoil	
	6.3 + clovers	
	6.5 + alfalfa	
	Opt. Soil Test Range	
	Loamy Soils	Sandy Soils
Phosphorus (P)	16 – 25	23 – 37
Potassium (K)	101 – 140	66 – 120
Sulfur (S), Boron (B) other micronutrients	As recommended by soil and/or plant tissue testing	

While these guidelines are tailored to meet pasture legume needs, research indicates that pasture grasses also use applied nitrogen (N) more efficiently when soil K and P status are in the optimal range.

If pastures are composed of 30% or more legumes, usually no additional N is recommended. However,

Table 2. General nitrogen guidelines for grass pastures. Source: Nutrient Application Guidelines for Field, Vegetable & Fruit Crops in Wisconsin, UWEX publication 2809.

Dominant Grass Species:	Example Split Rate Scenarios, N, lbs per acre			
	Responsive Total Seasonal N, lbs/acre	Early Spring	Early Summer Optional	Late Summer Optional
Kentucky bluegrass, Quackgrass	120* – 150	40 – 50	40 – 50	40 – 50
Orchardgrass, Tall fescue, Meadow fescue, Smooth brome grass, Timothy, Ryegrasses, Reed canarygrass	160* – 240	60 – 80	40 – 60	40 – 60

for pastures where grass species predominate, an early season application of 40 – 60 lbs nitrogen (N) per acre encourages early spring grass growth. To optimize grass production, additional N can also be applied later in the growing season. Table 2 lists guideline rates for N applications to grass-based pastures in Wisconsin. Producers may elect to stagger timing of N applications across the farm to manage early season production, encourage summer production/quality, and/or increase stockpiled forage for late fall grazing on various pastures

Add Legumes

Legumes can make significant contributions to pastures in terms of yield, quality, and palatability, as well as providing fixed N to associated grasses. Most pastures will benefit from a 30 – 40% legume component in the sward. For optimal legume content, develop a consistent plan to maintain or improve the percentage and productivity of legumes in your pastures.

Most legumes will need to be reseeded every few years to maintain stands. Consider frost- or interseeding grassy- or thin pasture stands with legumes such as red clover (3 – 5 lbs/acre) or white clover (1 – 2 lbs/acre). After frost seeding or interseeding into existing pastures, manage early season grazing to minimize sod competition so that legume seedlings receive adequate sunlight for vigorous legume establishment and are not damaged by grazing animals.

Increase Forage Diversity

Research suggests that pasture forage mixtures may be varied across the farm landscape to optimize production and quality. Increased pasture diversity can also address erosion concerns, improve sward density, and provide management flexibility during dry summers and on shallow soils. Improved varieties of legumes and grasses are available that enable producers to develop custom seeding mixtures that fit well across a farm's resources. Each grass and legume species will have potential strong points as well as weaknesses that need to be considered as seeding decisions are made. Wisconsin and other states in the Upper Midwest have extensive information regarding yield performance, palatability, and persistence for cool season grasses as well as legumes. Wisconsin data and links to data in nearby states is available at the UW Forage Research and Extension website: <http://www.uwex.edu/ces/forage/>

When purchasing seed, certified seed is the best cost alternative for most situations. Be sure to read and retain the seed tag information and follow recommended seeding rate guidelines. New forages should be planted on a limited acreage to determine if it is adapted to farm conditions and management strategies. For those producers interested in developing their own seeding mixtures, information on different grass and legume varieties and a custom seeding mix calculator (Excel spreadsheet) is available at the UW Forage Research and Extension website: <http://www.uwex.edu/ces/forage/>.

Grazing Management Practices

Pastures require periodic rest from defoliation and attention paid to residual plant stubble heights to maintain vigorous swards. Consider incorporating these practices:

- **Subdividing large pastures** not only builds in more rest for individual pasture areas, but increases flexibility of grazing management in terms of matching animal dry matter intake and quality requirements along with the opportunity to better manage residual dry matter left after grazing.

- **Observe initial and post-grazing stubble heights:** Avoid turning cattle into pastures before sufficient plant growth has occurred this spring, and remove animals before pastures are grazed down too much. Recent research from the US Dairy Forage Research Center has demonstrated that several cool grass species show improved seasonal forage yields and also respond with up to 10 days of earlier growth the following spring when target residual grazing heights at least 3 – 4 inches are maintained throughout the growing season. These same residual heights also help reduce weed competition. During periods of dry weather, forage residues can provide important cover to soils that will buffer soil temperatures and improve water infiltration when precipitation does occur. Recommendations for pasture grazing heights are provided in Table 3.

Table 3. Wisconsin grazing height guidelines.

Grass Species	Initial Grazing Height, inches		Residual Height, inches
	Spring	Summer/Fall	
Perennial ryegrass, Kentucky bluegrass	6	6 +	2 – 3
Orchardgrass, Smooth brome, Tall fescue, Meadow fescue, Timothy, Reed canarygrass	10 - 12	10 +	4 – 6

Consider Using Annual Forages and Crop Residues

Currently there is much renewed interest in the use of crop residues, annual forages and cover crops to help fill in expected pasture forage gaps as well as to provide extra harvested forage that may be needed due to unexpected weather issues. Options include small grains, sorghum, sudangrass and hybrids, brassicas, corn, and other species. These species can provide a high quality pasture or harvested forage resource to supplement or extend existing pasture acreage during various periods of forage gaps during the production year.

Annuals may be included as part of a field crop rotation or planted into light sods or crop residues.

Develop a plan for including some of these options among the total pasture and harvested forage resources for your farm. Resource information on cover crops for Wisconsin and other Midwestern states is located at the Midwest Cover Crops Council website: <http://www.mccc.msu.edu/> and on the UW Extension Team Forages website: <http://www.uwex.edu/ces/crops/uwforage/uwforage.htm>

Other options for extending the grazing season include stockpiling of some pastures by allowing those areas to rest and grow for the last 60 – 80 days of the growing season, and then grazing stockpiled pastures in late fall and early winter. Stockpiled cool season grasses may provide from 0.75 to 1.5 tons of dry matter of good quality forage per acre, depending on the species. A regional Extension publication, *Extending Grazing and Reducing Stored Feed Needs*, is available through UW Cooperative Extension Publishing to guide producers in planning options for extending grazing resources beyond the typical production season: <http://learningstore.uwex.edu/Assets/pdfs/A3902.pdf>

Follow the \$ Signs

The economic realities of high feeding costs in all sectors of dairy and livestock production requires that producers continue to pay attention to the economics of various pasture and harvested forage alternatives. UW Extension maintains current pasture and forage budgets along with other crop budgets at the UW Extension Farm and Risk Management (FARM) Team website, available under “enterprise budgets”: <http://www.uwex.edu/ces/farmteam/>

Table 4 shows expected savings by using pastures over purchased dry hay at a range of hay prices on a per cow basis. Pastures represent a great low cost opportunity to produce high quality and quantities of forage, but will do so only if the same amount of attention and management efforts are made as with other feed crops. Attention paid to soil fertility, variety selection, weed control, and grazing management will ensure that pastures perform at their optimum potential and help reduce annual feed costs.

Days of grazing utilized	SAVINGS, purchased hay equivalent, price per ton DM			
	\$125	\$150	\$200	\$250
60	75	90	120	150
90	113	135	180	226
120	150	180	240	300
150	187	226	300	375
180	226	270	360	450
210	262	315	420	525
240	300	360	480	600

Assumptions: 20 lbs. forage dry matter per day from pasture, savings are per 1 animal unit (= 1000 lbs. of animal live weight) in herd

© University of Wisconsin Cooperative Extension, 2013

Author contact information:

Rhonda R. Gildersleeve, Ph.D., UW Extension Grazing Specialist
 UW Lancaster Agricultural Research Station, 7396 State Road 35 and 81 Lancaster, WI 53813
 Phone: (608) 723-6243 Email: rhonda.gildersleeve@ces.uwex.edu
 Grazing Resources & Research website: <http://fyi.uwex.edu/grazres/>