

Climate Effects on Forage and Beef Production

► Beef cattle production potential is influenced in part by environmental conditions. Cattle producers should be aware of management risks and mitigation strategies to improve production potential in the Southeast. Following is an overview of seasonal weather conditions, impacts, and strategies for management in beef-forage systems.

Key Climate Impacts and Management Strategies

Impact	Strategy	Resources
Condition: Drier, Warmer Summer		
With sparse rainfall, minimal forage production may be supported. Lack of forage production in extreme drought situations.	Review animal stocking rate (number of animals per acre); decrease stocking rate to reduce grazing pressure on perennial pastures.	Understanding Stocking Rates in Grazing Systems http://www.aces.edu/go/780
Heat stress may be observed in animals.	Provide ample shade and access to clean, cool water to support animal production goals. Follow suggestions for trailer stocking density from NCBA to reduce heat stress during transport.	Drinking Water for Livestock http://www.aces.edu/go/781
Increased forage pest and disease pressure.	Scout for pests beginning in early summer.	Insect and Weed Control Recommendations for 2017: Pastures and Forage Crops http://www.aces.edu/go/779 Management of Fall Armyworm in Pastures and Hayfields http://www.aces.edu/go/16 Biology and Management of Bermudagrass Stem Maggot http://www.aces.edu/go/782
Nitrate accumulation in heavily fertilized warm-season grasses experiencing drought stress.	Have stored forages tested for nitrate levels. Develop a supplementation and use strategy as needed.	Nitrate Poisoning of Cattle in Alabama http://www.aces.edu/go/783



Key Climate Impacts and Management Strategies (cont.)

Impact	Strategy	Resources
Condition: Wetter, Warmer Summer		
Frequent rainfall may prevent timely harvest of hay, decreasing quality of stored forages used in the winter months.	Conduct a forage analysis to determine amount of nutrients in stored forages at time of feeding.	Collecting Forage Samples for Laboratory Analysis http://www.aces.edu/go/523
Increased forage pest and disease pressure.	Scout for pests beginning in early summer. Conduct soil tests and apply nutrients according to recommendations.	Insect and Weed Control Recommendations for 2017: Pastures and Forage Crops http://www.aces.edu/go/779 Management of Fall Armyworm in Pastures and Hayfields http://www.aces.edu/go/16 Biology and Management of Bermudagrass Stem Maggot http://www.aces.edu/go/782
Weed competition more prevalent in pastures.	Conduct pasture evaluations throughout the summer. Identify weeds and develop a comprehensive management strategy.	
Increased forage yield potential.	Use managed grazing and increase stocking rate to improve forage utilization. Explore long-term hay storage options to save surplus forage.	
Heat stress may be observed in animals.	Provide ample shade and access to clean, cool water to support animal production goals. Follow suggestions for trailer stocking density from NCBA to reduce heat stress during transport.	Drinking Water for Livestock http://www.aces.edu/go/781
Condition: Drier, Warmer Fall		
Decreased potential for stockpiling perennial grasses and planting cool-season annual forages.	Have seed and equipment ready to plant and fertilize as needed when timely rainfall occurs.	Alabama Planting Guide for Forage Grasses http://www.aces.edu/go/784 Alabama Planting Guide for Forage Legumes http://www.aces.edu/go/789
Heat stress may be observed in animals.	Provide ample shade and access to clean, cool water to support animal production goals. Follow suggestions for trailer stocking density from NCBA to reduce heat stress during transport.	Drinking Water for Livestock http://www.aces.edu/go/781
Reduced forage availability for winter.	Begin making decisions about purchased feedstuffs. Develop a culling strategy for use as needed. Identify potential sacrifice pasture for feeding during winter months.	
Condition: Wetter, Cooler Fall		
Stocker calves unable to adjust to changing wet/cool conditions.	Monitor calf health, provide complete feed ration and free-choice access to adequate quality forage to help cattle acclimate to new environment.	
Fall-calving cows in muddy areas.	Provide clean, easily accessible pasture for cows calving in the fall to prevent the opportunity for spread of disease.	
Conditions favorable for stockpiling perennial grasses and planting cool-season annual forages.	Have seed and equipment ready to plant and fertilize as needed when timely rainfall occurs.	Alabama Planting Guide for Forage Grasses http://www.aces.edu/go/784 Alabama Planting Guide for Forage Legumes http://www.aces.edu/go/789
Frost on warm-season grasses such as Johnsongrass and warm-season annuals.	Increased potential for prussic acid accumulation.	

Key Climate Impacts and Management Strategies (cont.)

Impact	Strategy	Resources
Condition: Wetter, Warmer Fall		
Warm-season perennial grasses take longer to go dormant.	Use grazing management/increase stocking rate to improve forage utilization.	
Moisture conditions favorable for planting cool-season annuals in a prepared seedbed.	Follow planting recommendations in ANR-0149, Alabama Planting Guide for Forage Grasses, for your region of the state.	Alabama Planting Guide for Forage Grasses http://www.aces.edu/go/784
Condition: Cooler, Drier Winter		
Energy requirements of cows increases by 1 percent for every degree that the wind chill is below 32 degrees F.	Provide extra hay to cattle during this time. Mid- to high-quality hay will help maintain consistent consumption during the cooler weather.	Calculating the Energy Requirements of Brood Cows in Cold Weather http://www.aces.edu/go/520
Changing cow nutrient requirements and decreasing body condition in fall-calving cows.	Separate the cow herd into nutritional management groups and monitor body condition; begin supplementation based on forage analysis conducted earlier in the season.	Beef Cow Herd Planning Calendar http://www.aces.edu/go/788
Condition: Cooler, Wetter Winter		
Energy requirements of cows increases by 2 percent or every degree that the wind chill is below 59 degrees F.	Provide extra hay for cattle; supplement with a fiber-based energy source for 3 to 5 days after the cold weather to help overcome energy losses.	Calculating the Energy Requirements of Brood Cows in Cold Weather http://www.aces.edu/go/520
Changing cow nutrient requirements and decreasing body condition in fall-calving cows.	Separate the cow herd into nutritional management groups and monitor body condition; begin supplementation based on forage analysis conducted earlier in the season.	
Cows/calves in muddy areas.	Provide clean, easily accessible pastures for cows and calves to prevent the opportunity for spread of disease. Consider putting in heavy-use area (hay feeding pads, etc.).	USDA NRCS Conservation Practice Standard—Heavy Use Area Protection http://www.aces.edu/go/785
Condition: Warmer, Wetter Winter		
Favorable growing conditions for cool-season forages.	Use managed grazing to improve forage utilization. Increased forage availability may decrease supplementation needs depending on region.	
Changing cow nutrient requirements and decreasing body condition in fall-calving cows.	Separate the cow herd into nutritional management groups and monitor body condition. Begin supplementation based on forage analysis conducted earlier in the season.	
Condition: Warmer, Wetter Spring		
Favorable growing conditions for cool-season forages.	Use managed grazing to improve forage utilization, especially in late spring. Increased forage availability may decrease supplementation needs depending on region.	
Cool-season forages experience earlier growth.	Conduct soil tests and apply nutrients before anticipated flush of spring growth.	Soil Testing Information Sheet http://www.aces.edu/go/790
Potential for animal health conditions such as grass tetany to occur.	Provide free-choice high magnesium mineral (10 to 15 percent Mg) during spring. Monitor intake to ensure that cattle are consuming at the recommended rate per day.	Management Practices to Reduce Grass Tetany http://www.aces.edu/go/786

Key Climate Impacts and Management Strategies (cont.)

Impact	Strategy	Resources
Condition: Cooler, Wetter Spring		
Cool-season forages experience delayed growth.	Conduct soil tests and apply nutrients before anticipated flush of spring growth. Use managed grazing to improve forage utilization and remove excess forage in late spring/early summer as warm-season perennials break dormancy.	Soil Testing Information Sheet http://www.aces.edu/go/790
Potential for animal health conditions such as grass tetany to occur.	Provide free-choice high magnesium mineral (10 to 15 percent Mg) during spring. Monitor intake to ensure that cattle are consuming at the recommended rate per day.	Management Practices to Reduce Grass Tetany http://www.aces.edu/go/786



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