

FORAGE: YEAR-ROUND FORAGE SYSTEMS IN MISSISSIPPI

Twelve-month grazing is feasible in much of Mississippi through utilization of cool- and warm-season forages. In the chart below, southern forage availability is shown as a proportion of annual growth. Bermudagrass and/or dallisgrass grow well in a mixture with tall fescue in much of the upper two-thirds of Mississippi and on adapted soils throughout the region. Legumes—mostly clovers, but also alfalfa—have been grown successfully with the bermudagrass/dallisgrass/tall fescue mixture. Bahiagrass provides reliable permanent summer pasture, but it generally grows as a single species on sandy soils, as its dense sod is usually too competitive for an accompanying cool-season perennial grass. Annual clovers and annual ryegrass can be successfully over-sown into each of these pasture situations.

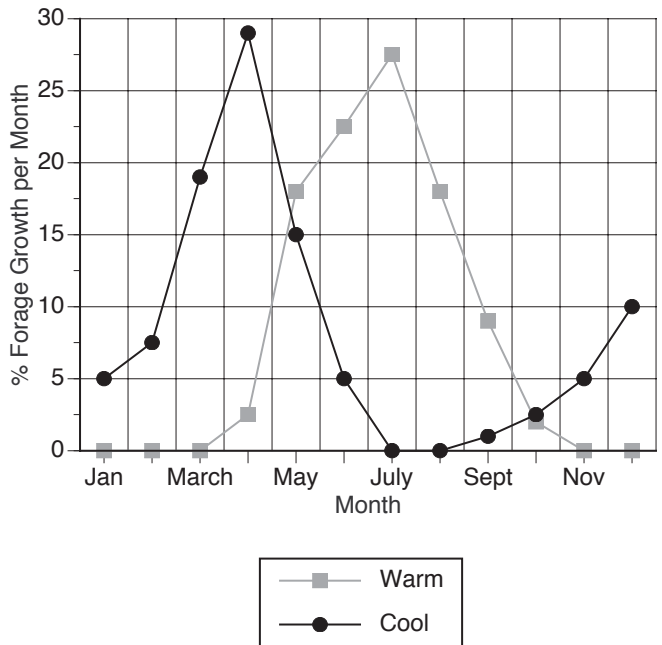
In order to establish a warm-season/cool-season forage mixture, the warm-season component should be established first. This is because warm-season grasses slow down their growth during the fall when cool-season grasses need to be established. Warm-season grasses are less shade-tolerant than cool-season grasses and their growth is suppressed into late spring by the cool-season grass. Warm-season grass establishment generally requires a prepared seedbed while cool-season grasses can be sod-seeded into summer grasses.

A successful sod-seeding of annual ryegrass, clovers, or tall fescue requires that the summer grass be grazed off closely in the fall. An herbicide burndown may also be helpful, particularly on bahiagrass in south Mississippi. However, in north Mississippi an herbicide may not be needed if the summer grass top growth is removed. Tall fescue is a good choice in north Mississippi as it is a perennial and will not need to be replanted each year. Older types of tall fescue have a toxic endophyte that lives inside the stems, leaves, and seed. This toxic endophyte results in poor animal performance such as reduced weight gain and lower calf crops. The endophyte allows the tall fescue plant to survive our hot, drought-prone summers. That is why endophyte-free tall fescue did not persist when it was introduced in the 1980's. Fortunately, non-toxic endophytes have been placed in some newer varieties of tall fescue. These are marketed as MAXQ by Pennington Seed and as ARKPlus by FFF Cooperative.

A cool-season grass will suppress early summer growth of the warm-season grass. It's important to remove or graze off the tall fescue or ryegrass by early May in south Mississippi and by late May in the north. A cool-season/warm-season mixture will nearly double your forage growth, so make plans now to add a cool-season forage to some of your warm-season pastures.

In developing a new forage system or modifying the one now in use, keep in mind that no one system is best for every producer. Factors you must consider are the species of grasses and legumes already established on your farm, your farm's soil type, your level of management, and your preferred stocking rate. The example forage systems listed have all proven successful, but make modifications to meet your needs.

Growth Curves - Southern Forage Warm and Cool Season



These example systems are each based on a total of 30 acres of land. This is about the minimum acreage normally required by a "bull unit" (up to 30 cows). You can convert

this basic 30-acre unit to any size operation you want, and the percentages remain the same.

System 1.

Bahiagrass or bermudagrass overseeded with ryegrass, ryegrass + annual clover or sod-seeded with ryegrass and a small grain.

Assume:

1. A total of 30 acres, cross-fenced into three 10-acre pastures (A, B, C)
2. All cattle are concentrated on one pasture at a time

Suggested grazing and rotational management:

Pasture	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
A	Grazed overseeded ryegrass			Grazed and clip hay from summer grass			Ryegrass overseeded					
B	Grazed overseeded ryegrass			Grazed or clip hay from overseeded grass		Grazed and clip hay from summer grass			Ryegrass overseeded			
C	Holding pasture for hay feeding if weather is severe			Grazed and clip hay from summer grass			Grazed and clip hay from summer grass			Grazed frosted grass or feed hay		

Grazing Summary

- Apr. – Oct. Rotate among A, B, C
- Oct. – Nov. Rotate between B, C
- Nov. – Dec. Graze C; use A and B if available and needed
- Jan. – Apr. Rotate between A, B

System 2.

Bermudagrass or bahiagrass and tall fescue + white clover.

Assume:

- A total of 30 acres
- 1. Bermudagrass or bahiagrass on 20 acres; two 10-acre pastures (A and B)
- 2. Tall fescue + white clover, 10 acres (C)
- 3. All cattle concentrated on one pasture at a time

Suggested grazing and rotational management:

Pasture	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
A	Holding pasture if feeding hay			Grazed and clip hay			Grazed and clip hay			Grazed frosted grass		
B	Grazed overseeded ryegrass			Grazed or clip hay		Grazed and clip hay			Ryegrass overseeded			
C	Grazed fescue + clover			Dormant or graze			Clip closely		Grazed or stockpile fescue			

Grazing Summary

- Apr. – June Rotate among A, B, C
- June – Oct. Rotate between A, B
- Oct. – Dec. Rotate between A, C
- Jan. – Apr. Rotate between B, C

System 3.

Bermudagrass and tall fescue grown in combination.

Assume:

1. Used only in north Mississippi or in central Mississippi on heavy (clay) soils
2. A total of 30 acres, cross-fenced into three 10-acre pastures (A, B, C)
3. All cattle are concentrated on one pasture at a time
4. All excess forage is clipped as hay and fed anytime during the year it is needed

Suggested grazing and rotational management:

Pasture	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
A	←—————					Grazed and clipped hay		————→				
B	←—————					Grazed and clipped hay		————→				
C	←—————					Grazed and clipped hay		————→				

Grazing Summary

Jan. – Dec. Rotate among A, B, C; clip all excess forage for hay and feed as needed

System 4.

High-quality forage for dairy cows.

Assume:

1. Permanent pasture; common bermudagrass + dallisgrass + white clover (A)
2. Temporary summer pasture; sorghum, sudan, or millet (B, subdivided for staggered plantings)
3. Temporary winter pasture; oats + ryegrass (C)
4. Corn silage (D)
5. Graze annuals as much as possible
6. Corn silage fed as needed

Suggested grazing and rotational management:

Pasture	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
A			←—————				Grazed or clipped hay as needed		————→				
B				←—————			Rotationally graze among three plantings			————→			
C	Graze	————→				Fallow		————→			←—————		Graze
D			←—————			Producing silage		————→			←—————		Prepare for spring planting

Grazing Summary

Additional grazing can be obtained if the early planted subpasture of pasture B is seeded to oats in late August or early September, thereby double-cropping some of pasture B. Some of pasture C can also be seeded to summer annuals, resulting in double-cropping on it also.

Stocking Rate

A general rule of thumb is that cattle will consume 2 to 3 percent of their body weight in forage on a dry-matter basis per day. The forage systems outlined can be intensely managed to provide forage for as much as one cow per acre depending upon rainfall, fertilizer, and other input. The man-

agement level can also be reduced to stock at an animal unit per 2.0 or more acres. To vary these systems to suit your operation, it is suggested that you visit your county Extension agent and discuss the potential of each system with your soil types.

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