

ALABAMA

**FORAGE
BASICS**



HANDBOOK



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This publication provides beef and forage producers in Alabama and the Southeast region with Extension and research-based information on animal, environment, forage, and soil topics. Objectives are to increase profitability and resilience, assist with risk management, and promote competitiveness in the livestock industry.



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Preface

The livestock industry is one of the most important agricultural industries in the Southeast region. In Alabama, it is the second most important, just behind the poultry industry. The recommendations and guidelines suggested in this handbook address common questions and concerns with the convenience of fitting in your pocket.

The authors do not assume any responsibility, make any guarantees, or offer any warranties regarding the results obtained from using any management strategies or suggestions included in this handbook.



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Introduction

More than 4 million acres of Alabama are dedicated to the production of forage crops as either pasture or harvested forage. This makes forage crops second only to forestry in commercial land use in Alabama, surpassing all other agronomic and horticulture crops combined. These acres support many economically important Alabama industries, such as beef cattle, equine, and small ruminant production. Forage production also is integral to the poultry industry since poultry litter is a major source of soil nutrients for pasture lands.

Alabama's climate is well suited to growing forage crops. However, much of the land devoted to forage crops could be more productive through intensive management, specifically precise fertilization, grazing management, and pest control. Moreover, many of the underutilized marginal acres in Alabama could be made productive by conversion into pasture or hay fields.

More than forty different non-native forage crops are commonly planted in Alabama. These non-native crops were first introduced in the 1600s by European settlers. Many of these species were cool-season grasses that did not perform well in the hot, humid Southeast. As a result, the beef and dairy industries were limited in the state until the 20th century. The increase in forage production in Alabama was a result of the development of

synthetic nitrogen fertilizer, the release of heat-tolerant cool-season species (e.g., tall fescue), and breeding efforts in warm-season perennial species (e.g., bermudagrass and bahiagrass).

In forage management, one must consider both the forage and livestock needs. Producers that have proper livestock management are not necessarily good forage managers. Digestible energy is the most limiting diet nutrient during the winter. Therefore, developing a forage system that matches livestock needs is critical for success. Forage management requires planning 6 to 12 months ahead of time for planting, fertilization, pest management, and harvesting.

The main cause of forage failure is lack of species or variety adaptability to the climate, soil type, or management style. Consult with your local Animal Science and Forage Extension agent for assistance in forage selection.

The primary goal of any forage system is to reduce stored feed needs. Whether you supplement with grain, by-products, or hay, winter feeding is the costliest portion of livestock production. Grazed forages cost one-third to one-half as much as stored feed. This prioritizes the need to allow animals to harvest the forage themselves and reduces labor and financial inputs.

Many of the common forage species used in Alabama are listed in table 1. Both the common name(s) and the scientific name are included for reference. Many times forage species are called by multiple common names; for example, annual ryegrass is often called rye. However, a separate species is also called rye. To limit confusion, the scientific name (Latin name) of each species is included as a reference. The first common name in the table will be the one used throughout the

handbook. Table 1 also includes information on the forage type: cool-season annual (CSA), cool-season perennial (CSP), warm-season annual (WSA), or warm-season perennial (WSP).

Table 2 includes common conversion units from standard to metric. This is useful since most scientific and international publications report findings in the metric system.

Table 1. Common and Scientific Names of Forage Grasses, Legumes, and Forbs

Common Name	Scientific Name	Category*
Grasses		
Annual ryegrass; rye (annual)	<i>Lolium multiflorum</i>	CSA
Bahiagrass	<i>Paspalum notatum</i>	WSP
Bermudagrass	<i>Cynodon dactylon</i>	WSP
Crabgrass	<i>Digitaria sanguinalis</i>	WSA
Corn	<i>Zea mays</i>	WSA
Dallisgrass	<i>Paspalum dilatatum</i>	WSP
Johnsongrass	<i>Sorghum halepense</i>	WSP
Oats	<i>Avena sativa</i>	CSA
Orchardgrass (cocksfoot)	<i>Dactylis glomerata</i>	CSP
Pearl millet; millet	<i>Pennisetum americanum</i>	WSA
Rye	<i>Secale cereal</i>	CSA
Sorghum	<i>Sorghum bicolor</i>	WSA
Sudangrass	<i>Sorghum × drummondii</i>	WSA
Tall fescue; fescue	<i>Festuca arundinacea</i>	CSP
Triticale	<i>Triticale hexaploide</i>	CSA
Wheat	<i>Triticum aestivum</i>	CSA
Native Grasses		
Big bluestem	<i>Andropogon gerardii</i>	NWSP
Eastern gamagrass	<i>Tripsacum dactyloides</i>	NWSP
Indiangrass	<i>Sorghastrum nutans</i>	NWSP
Little bluestem	<i>Schizachyrium scoparium</i>	NWSP
Switchgrass	<i>Panicum virgatum</i>	NWSP

Table 1. Common and Scientific Names of Forage Grasses, Legumes, and Forbs

Common Name	Scientific Name	Category*
Legumes		
Alfalfa	<i>Medicago sativa</i>	CSP
Black medic	<i>Medicago lupulina</i>	CSA
Cowpea	<i>Vigna unguiculata</i>	WSA
Kudzu	<i>Pueraria lobata</i>	WSP
Lespedeza, Korean	<i>Kummerowia stipulacea</i>	WSA
Lespedeza, strate	<i>Kummerowia striata</i>	WSA
Sericea lespedeza	<i>Lespedeza cuneata</i>	WSP
Rhizoma perennial peanut	<i>Arachis glabrata</i>	WSP
Soybean	<i>Glycine max</i>	WSA
Sweetclover	<i>Melilotus spp.</i>	CSA
Vetch; hairy	<i>Vicia villosa</i> Roth	CSA
Clovers		
Arrowleaf clover	<i>Trifolium vesiculosum</i>	CSA
Ball clover	<i>T. nigrescens</i>	CSA
Crimson clover	<i>T. incarnatum</i>	CSA
Red clover	<i>T. pretense</i>	CSA/B*
White clover	<i>T. repens</i>	CSA
Forbs		
Chicory	<i>Cichorium intybus</i>	CSP
Kale	<i>Brassica oleracea</i>	CSA
Radish	<i>Raphanus sativus</i>	CSA
Rape	<i>Brassica napus</i>	CSA
Turnip	<i>Brassica napa</i>	CSA

* WS = warm-season; CS = cool-season; A = annual; B = biennial; N = native; P = perennial

Table 2. Common Weights and Measures for Conversion

Standard Unit	SI Unit (international)	Standard to SI Conversion
inch	centimeter (10 ⁻² m)	standard / 2.54
acre	hectare (ha)	/ 0.405
pound (lb)	kilogram (kg)	/ 0.454
pounds per acre (lb/acre)	kilogram per hectare (kg/ha)	/ 1.12
Fahrenheit (°F)	Celsius (°C)	/ 5/9 (°F-32)
gram per milliliter (g/ml)	pounds per ounce (lb/oz)	/ 15.338
pounds per cubic inch (lb/in ³)	gram per cubic centimeter (g/cm ³)	/ 27.68