



# Forage Harvest Management

Alabama Job Sheet No. AL511



## Definition

Forage harvest management is the timely cutting and removal of forages from the field as hay, green-chop, or silage.

## Purpose

Forage harvest management may include some or all of the following purposes:

- Optimize the economic yield of forage at the desired quality and quantity.
- Promote vigorous plant re-growth, stand maintenance, and desired plant species composition.
- Use forage biomass production as a soil nutrient management/uptake tool.
- Control insects, diseases, invasive species, and weeds.
- Maintain and/or improve wildlife habitat.

## Conditions

Forage harvest management may be a component of most conservation management systems that address machine-harvested forage crops to improve and/or maintain the soil, water, air, plant, and animal resources, and is compatible with the owner's objectives of high quality forage.

## General Harvest Specifications

1. Forages will be harvested at a frequency and height that will maintain a desired healthy plant community through its life expectancy (see Tables 1-3).
2. Harvest forages at a maturity that provides the desired quality and quantity for the intended use while maintaining optimum re-growth conditions.
3. Forage will be harvested within the optimum moisture range for the type of storage structure used.
4. For nutrient uptake, use harvesting strategies to maximize uptake of available/targeted nutrients while maintaining an acceptable level of forage quality.
5. For wildlife considerations, incorporate management strategies to enhance cover, nesting, and food within the harvest area.
6. After harvest, it is important to leave enough leaf area on the plant to allow for plant survival and rapid re-growth. If forages are harvested below recommended minimum cutting height, re-growth is slowed, weeds may increase, productivity may decline and the stand may die.
7. Allow enough recovery time after harvest to allow the forages to accumulate carbohydrate reserves necessary for re-growth in the plant crown, rhizomes, stolons, or roots.

As forages mature, digestibility and intake decrease. Deciding when to harvest hay is a compromise between quality and yield. The true quality test for hay is animal performance (see Figure 1).

**Operations and Maintenance Plan**

1. Before forage harvest, clear fields of debris which could damage machinery or, if ingested, harm livestock.
2. Operate all equipment at optimum settings to minimize loss of leaves.
3. Keep all machinery in good repair.
4. Incorporate safety in all that you do.
5. Maintain soil fertility and pH to recommended levels.
6. When managing for wildlife, reduce the number of cuttings/disturbance to the area. This will affect both quality and quantity of the forage produced. Orient harvest direction to give wildlife escape opportunities.

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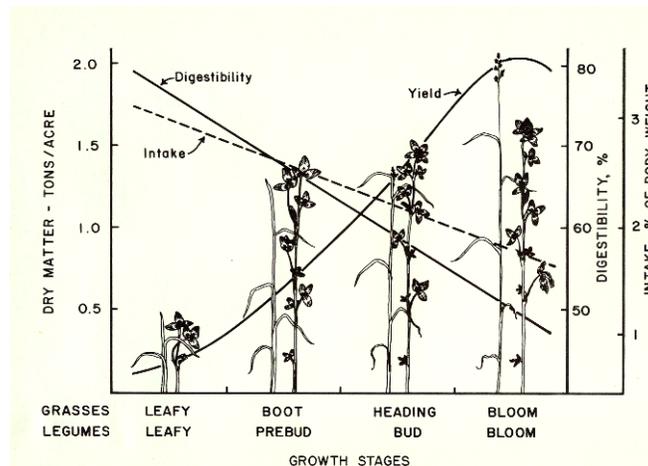
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**Figure 1.**  
**Growth stages of grasses and legumes and their effect on dry matter production, digestibility, and percent dry matter intake (from Blaser, et al., 1986)**



<b>SPECIES</b>	<b>STAGE TO HARVEST FOR ACCEPTABLE QUALITY &amp; YIELD</b>
Alfalfa	Bud stage for first cutting, one-tenth bloom for second and later cuttings. For spring seedlings, allow the first cutting to reach mid- to full bloom
Tall Fescue, orchardgrass	Boot to early head stage for first cut, afterward at 4 to 6 week intervals, or re-growth is about 10 inches
Red, arrowleaf, or crimson clovers	Early bloom
Small grains	Boot to early head stage
Soybeans	Mid- to full bloom and before bottom leaves begin to fall
Sericea lespedeza	Height of 15 to 18 inches
Annual lespedeza	Early bloom and before bottom leaves begin to fall
Ladino or white clover	Cut at correct stage for companion grass
Bermudagrass	15 to 18 inch height for first cutting, harvest every 4 to 5 weeks or when 15 inches high
Sudangrass, sorghum-sudan hybrids, pearl millet	Height of 30 to 40 inches
Bahiagrass	Height of 12 inches or every 4 – 5 weeks
Johnsongrass	Harvest at heading
Dallisgrass	Boot to bloom
Native grasses (eastern gamagrass, Indiangrass, big bluestem, switchgrass)	Harvest in early boot stage at 45 day intervals
Ryegrass	Boot to early head
Perennial peanut	Bloom, with 4-6 week intervals

<b>SPECIES</b>	<b>STAGE TO HARVEST FOR ACCEPTABLE QUALITY &amp; YIELD</b>
Corn	Kernels full dent
Grain sorghum	Late milk to late dough, before leaf blades begin to die
Forage sorghum	40 inches or late boot stage
Sudangrass, johnsongrass, pearl millet	40 inches or boot stage, whichever comes first
Small grains, ryegrass	Boot to early heading
Soybeans	Late bloom - seed forming in pods and before lower leaves fall
Alfalfa, red clover	Bud to early bloom
Tall fescue, orchardgrass	Boot to early heading; afterward at 4 to 6 week intervals or when 10 inch of re-growth
Hybrid bermudagrass	15 inches at first harvest; afterward at 4 to 5 week intervals
Legume-grass mixtures	Boot to early heading for grass component

<b>Table 3. Recommended Stubble Height and Approximate Recovery Period After Hay Harvest</b>		
<b>Species</b>	<b>Recommended Minimum Stubble Height after Harvest (inches)</b>	<b>Approximate Recovery or Rest Period<sup>1</sup> (days)</b>
<b>Grasses</b>		
Bahiagrass	1-2	20-28
Bermudagrass, common	2-3	18-28
Bermudagrass, hybrid	3-5	18-28
Big Bluestem	4	25-40
Dallisgrass	2-4	21-30
Eastern Gamagrass**	8	28-45
Indiangrass	5	28-40
Johnsongrass	6	21-30
Orchardgrass	3-5	20-30
Ryegrass	2-3	14-25
Small Grains	3-4	14-25
Sorghum-sudan hybrids	6-8	21-30
Switchgrass**	8	30-45
Tall Fescue	3-4	21-30
<b>Legumes</b>		
Alfalfa	3	20-25
Clover, arrowleaf or crimson	2-4	14-25
Clover, red	2-3	18-25
Clover, subterranean or white	2-3	18-30
Lespedeza, annual	2-3	20-30
Perennial peanut	4	28-42
Sericea Lespedeza	4-6	18-25

Based on favorable growing conditions for the plant. Longer cycles may be needed during stress periods such as extreme heat, cold, wetness, or drought. Shorter cycles may result during favorable growing conditions.

\*For perennial crops and annual crops that will be harvested by more than one cutting refer to the minimum cutting height in Table 3.

\*\*The last cutting should be early enough to allow for re-growth to build up carbohydrates in the root systems before frost. After frost, the re-growth may be cut for hay or grazed.

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### Forage Harvest Management Job Sheet

<i>Landowner:</i>	<i>Farm #:</i>
	<i>Tract #:</i>

Site Specific Forage Harvest Management Information						
(A)	(B)	(C)	(D)	(E)	(F)	G
Field No.	Field Acres	Forage Species	Growth Stage at Harvest	Minimum Stubble Height (inches)	Recovery or Rest Period (days)	Date Completed

Forage Harvest Management Completed:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date