

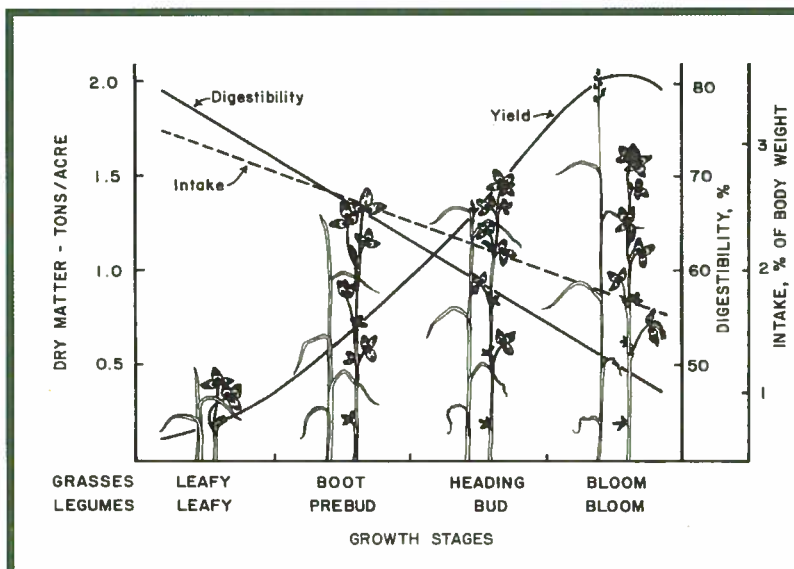
Hay Basics

Hay is necessary for most cow-calf producers. It is versatile, easily stored for various time periods, made from a number of crops, supplies most nutrients needed by many classes of livestock, and can be used as a pasture management tool.

Factors Affecting Hay Quality

1. Stage of Maturity When Harvested

Plant Species	Time of Harvest
Alfalfa	Late bud to first flower for first cutting, first flower to 1/10 bloom for second and later cuttings
Bluegrass, Orchardgrass, Tall Fescue, or Timothy	Boot to early head stage for first cut, later cuts at 4-6 week intervals
Red Clover	First flower to 1/10 bloom
Oats, Barley, or Wheat	Boot to early head stage
Rye and Triticale	Boot stage or before
Soybeans	Mid to full bloom and before bottom leaves begin to fall
Annual Lespedeza	Early bloom and before bottom leaves begin to fall
Sudangrass, Sorghum Hybrids, Pearl Millet	40 inch height or early boot stage, whichever comes first
Bermudagrass	Cut when height is 12 to 15 inches
Caucasian Bluestem	Boot to early head stage
Big Bluestem, Indiangrass, and Switchgrass	Early head stage



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.

Source: *Forage-Animal Management Systems*, Virginia Tech, Bulletin 86-7, p. 13

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2. Curing and Handling Conditions

Rain and sunlight cause nutrient leaching and leaf loss.
 Crushing stems promotes uniform drying time between stem and leaf.
 Rake or ted hay at about 40% moisture; bale hay at 15 to 20% moisture.

3. Hay Preservatives - Effective hay preservatives prevent excessive heating and mold growth when applied uniformly and at the correct rate on moist hay

4. Soil Fertility - Soil test hay fields annually to replace removed nutrients

Crop	Yield/Acre (Tons)	Nutrients Removed by Hay Crops ---Approximate lbs/Acre Removed---		
		N	P ₂ O ₅	K ₂ O
Alfalfa	5	255*	68	245
Red Cover-Orchardgrass	4	136	47	204
Tall Fescue, Orchardgrass	3	87	29	144

*N supplied by alfalfa
 Source: Quality Hay Production, Univ of Ky, AGR-62

5. Plant Species

Legumes are normally higher in quality than grasses when harvested together.
 Grasses improve drying rates of mixed stands compared to legumes alone.

Score Card for Physical Hay Quality Evaluation				
I. Stage of Harvest	→	1. Before blossom or heading	26-30 _____	
		2. Early bloom or early heading	21-25 _____	
		3. Mid to late bloom or head	16-20 _____	
		4. Seed stage	11-15 _____	
II. Leafiness	→	1. Very leafy	26-30 _____	
		2. Leafy	21-25 _____	
		3. Slightly stemmy	16-20 _____	
		4. Stemmy	0-6 _____	
III. Color	→	1. Natural green color	13-15 _____	
		2. Light green	10-12 _____	
		3. Yellow to slightly brownish	7-9 _____	
		4. Brown or black	0-6 _____	
IV. Odor	→	1. Clean – “crop odor”	13-15 _____	
		2. Dusty	10-12 _____	
		3. Moldy – mousey or musty	7-9 _____	
		4. Burnt	0-6 _____	
V. Softness	→	1. Very soft and pliable	9-10 _____	
		2. Soft	7-8 _____	
		3. Slightly harsh	5-6 _____	
		4. Harsh, brittle	0-4 _____	
		Sub-total	_____	
VI. Penalties	→	1. Trash, weeds, dirt	Subtract 0 – 35 _____	
			Total	_____

Scoring: 90 and above=excellent; 80-89 = good; 65-79 = fair
 Below 65 = poor
 Source: Quality Hay Production, Univ. of KY, AGR 62

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