

ALFALFA FOR SUMMER GRAZING

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Alfalfa can make an excellent grazing forage for cattle in the summer as well as at other times of year provided that good grazing management is utilized. Alfalfa can be grazed very close to the ground but should not be grazed continuously. Initial regrowth after grazing comes from nutrient reserves in the root; therefore, a sufficient rest period or regrowth period without grazing must be allowed for these nutrients to be replenished. In summer, this rest period is 30 to 35 days. In adequate rest for root nutrient replenishment is not allowed, the plant will be weakened and stand life greatly reduced. Because of its deep root, alfalfa withstands drought very well and may be the only forage available for grazing in very dry summers.

The best reason to consider alfalfa for grazing is its very high nutrient content and dry matter intake compared to grasses. Table 1 compares the energy and protein content of alfalfa and fescue at various stages of maturity. Except for very early vegetative when the two forages are similar in nutrient content, alfalfa contains a much higher level of protein and energy compared to fescue at any maturity stage. Because of this greater nutrient content, increased gain of cattle grazing alfalfa can be expected compared to those on fescue.

Maturity	Alfalfa		Fescue	
	CP %	TDN %	CP %	TDN %
Vegetative	24	70	20	73
Early Reproductive	20	65	13	61
Full Bloom	14	58	9	48

An example of why this increase in gain would be is shown in Table 2. Steers grazing the alfalfa have to consume a lower percentage of their body weight as dry matter for any given rate of gain compared to the consumption levels on fescue. To sustain a daily gain of 2.5 pounds, 500 pound steers would have to consume 2.9% of their body weight in dry matter compared to 3.64% for fescue. The level of required dry matter intake for alfalfa is very achievable while that needed from the fescue is unlikely except at very early stages of maturity.

Forage	Forage Content, Mcal/lb		ADG, lb	Requirements, Mcal/day			
	NEm	NEg		NEm	NEg	DMI lbs	% B. Wt
Alfalfa	.73	.45	1.5	4.5	2.15	10.9	2.18
			2.0	4.5	2.93	12.7	2.54
			2.5	4.5	3.79	14.6	2.92
Fescue	.61	.35	1.5	4.5	2.15	13.5	2.70
			2.0	4.5	2.93	15.7	3.14
			2.5	4.5	3.79	18.2	3.64

Producers considering grazing alfalfa must consider how best to graze it. While many grass pastures can be continuously grazed and maintain productivity, alfalfa cannot be. A rotational system allowing for rest and nutrient replenishment must be utilized. Alfalfa can be grazed very closely to the ground but should receive at least 30 days of rest and regrowth before regrazing. This means that grazing can begin when the plant has 10 – 16 inches of growth and animals with-drawn when 2 to 4 inches of growth remain.

Another consideration in grazing alfalfa is the distribution of nutrients within the forage canopy. As shown in Table 3, the upper 6 inches of alfalfa contain over 80% leaf mass and only about 20% stem mass. This represents the majority of the energy and protein content of the plant. The lower 12 inches of plant contain a much greater % of total mass as stem representing fewer nutrients and lower digestibility.

	% Total Yield	CP, % of DM	TDN, % of DM
Top 6 inches	37.3		
	% Top 6 inches		
Leaf	82.5	24	74.5
Stem	17.5	13	58.8
Lower 12 inches	67.2		
	% Lower 12 inches		
Leaf	20.5	22	75.9
Stem	79.5	9.6	47.7

Adapted from Henning 1996, Ky Grazing School Manual

These factors of nutrient distribution must be considered when planning a grazing rotation. If alfalfa is being used for cows with calves then some sort of forward creep system should be used to allow calves to graze ahead and have greater access

to the higher nutrient containing portion of the plant. Cows can be made to clean up more of the bottom portion and both will do well.

	Ky 31 Fescue + Clover		Johnstone Fescue + Clover	
	No Creep	Alfalfa Creep	No Creep	Alfalfa Creep
Calves	36	36	36	36
ADG, lbs	2.25	2.39	2.39	2.59
Wean Wt. lbs	608	630	634	659
Wn. Wt. ↑, lbs		22		25

Ky Grazing School Manual 2001, p. 141

When stocker cattle are the primary grazers, maximum utilization of the forage may not be the most important goal. Forcing these animals with high nutrient needs to clean up much of the bottom portion will limit individual gains. A quicker rotation of cattle followed by clipping to promote regrowth from the crown will yield a more optimum performance and utilization by stocker cattle. Grazing of stocker cattle may offer the best use for grazing alfalfa. Their high nutrient need for rapid gain can easily be met with alfalfa and they generally are profitable. Data in Tables 5 and 6 illustrate the high performance expected from steers grazing alfalfa. Performance expressed as either gain per acre or individual average daily gain is good when grazing alfalfa.

Average Head/Acre	Average Gain/Acre, lbs
4.12	874

Kentucky Progress Report 306, p. 91

Year	Int. Wt. lbs	Final Wt. lbs	Gain, lbs	ADG, lbs
1989	639	754	115	1.79
1990	662	850	188	1.61
1991	626	910	284	1.86

Ky Progress Reports 337 and 353, p. 20 and 17

Data from an individual producer illustrates the potential profitability of grazing alfalfa. The Berle Clay farm at Paris, Kentucky has about 325 acres of orchard grass – alfalfa used for haylage and summer grazing. The first cutting is generally taken for haylage and later cuttings are used for grazing. Usually, 4 to 5 groups of stocker cattle consisting of 150 to 200 head each are grazed together at the rate of 1.8 head per acre.

A stocking density of 10 to 25 head per acre is maintained with groups rotated every 2 to 5 days. Some performance and economic data are shown in Tables 7 and 8. Weight gain at a cost of \$.26 per pound will maintain profitability under virtually any situation in the cattle cycle.

Table 7. Performance Data, Stockers Grazing Alfalfa – Berle Clay Farm	
Days	6/10 to 9/20, 100 days
Stocking rate/acre	1.8 head
ADG, lbs	2.25
Gain/acre, lbs	405

Table 8. Economics of Grazing Alfalfa – Berle Clay Farm	
Alfalfa Cost/Acre	\$93.05
Mineral	4.70
Vet.	3.50
Interest	13.00
Haylage Profit	(9.29)
Total	104.96
Cost of Gain	\$.26 per pound

Producers grazing alfalfa must recognize that health issues such as bloat can arise. Bloat is most likely to occur when plants are young, lush and high in soluble protein content as rapidly growing alfalfa would be. Cattle can be adapted to alfalfa and incidence of bloat lessened by good management. They should not be removed from grazing alfalfa at the first sign of bloat as shown in Table 9. In this data, removal actually allowed for more bloat because the rumen micro-flora could never adapt to the alfalfa.

Table 9. Effect of Management on Incidence of Bloat in Cattle Grazing Alfalfa		
	Grazing System	
	Continuous	6 Hours/day
Number of Cases		
Week 1	1	25
Week 2	4	16
Total	5	41
JAS 73:1493 - 1498		

Feeding an ionophore or other drug can greatly lessen the incidence of legume bloat. Research shows that Monensin is much more effective than lasalocid, Table 10, although neither is perfect. Poloxalene can eliminate bloat but does not have the beneficial effects of the ionophore

Table 10. Effect of Feeding Monensin, Lasalocid or Poloxalene on Alfalfa Pasture Bloat		
Treatment Product	Dose, mg/lb body weight	% Reduction in Bloat
Monensin	0.3	71
	0.6	72
Lasolacid	0.3	30
	0.6	16
Monensin	0.3	41
	0.45	73
Lasolacid	0.3	25
	0.45	12
Poloxalene	20	100
JAS 56:1400 – 1406 and JAS 63:1246 - 1257		