

## GRAZING ALFALFA — STATE PERSPECTIVE

Roy Burris, Extension Beef Cattle Specialist  
Garry Lacefield, Extension Forage Specialist  
University of Kentucky

Alfalfa has been grown in Kentucky for many years, but in the last decade, its acreage has increased dramatically - from 208,000 in 1978 to 350,000 in 1981 (Ky. Agri. Statistics Service). Alfalfa is generally thought of as a hay crop but the practice of grazing alfalfa has received considerable attention recently. Much of this interest was generated by "Graze-More-Beef" demonstrations which have been conducted in the state. Demonstrations in which alfalfa was grazed averaged 791 pounds per acre during 1986-1988. Alfalfa's ability to withstand dry weather and its excellent nutritional qualities make it an attractive grazing alternative to fescue - especially during the mid-summer period. Grazing also requires less equipment than expensive conventional harvesting of hay. But... it also requires intensive management for optimum results.

### Requirements for Grazing Alfalfa

Requirements for establishment of an alfalfa stand for grazing are the same as for a hay crop. A thick, healthy and productive stand has the greatest potential for animal performance. However, alfalfa-grass stands may have some grazing advantages - such as reducing trampling damage, controlling soil erosion and minimizing bloat.

A simple approach for grazing alfalfa is to approximate the best hay harvest management system. In other words, forage should be removed rather rapidly and then allowed an adequate recovery period. A 4 to 5 week recovery time (similar to the time interval between cuttings of hay) is generally recommended. Stocking density should be heavy enough that each paddock in the total field is grazed less than 10-12 days at any one time. If plants are grazed continuously for longer periods than this, shoots developing from crown buds will likely be damaged.

A rotational grazing system is necessary which will permit this "short duration - long rest period" grazing. Before pasturing an alfalfa field, it should be divided into several (at least 5) equal sized paddocks using temporary electric fencing - e.g. if there are 8 paddocks, all of the cattle would be placed on paddock 1 until the alfalfa is grazed down (4 or 5 days), then to paddock 2 for a similar period of time, then to 3 and so on until the cattle are back to paddock 1. By the time the cattle are back on paddock 1 (about 30 days) the alfalfa should be at the proper stage of maturity (early bloom) for grazing. Before initiating grazing, some of the field could be cut for hay so that alfalfa in the latter paddocks will not get too mature.

All paddocks should ideally open into a common lane for watering, feeding, moving cattle and for shade. A "sacrifice" paddock containing grass should also be provided for times when the regular grazing area is muddy or hasn't recovered - rather than abusing the stand of alfalfa.

Stocking rates should be adjusted to the quality and quantity of the forage - depending on thickness of the stand, age of the stand, weed infestation and fertility. A stocking rate of 1500 to 2000 lbs body weight per acre is a reasonable amount for pasture which would normally produce about 6 tons of hay per acre.

Under optimum conditions, cattle producers can expect: a 120-180 day grazing period, 3 to 5 hd/acre stocking rate, 1.5 to 2.0+ A.D.G. and 500 to 1000 lb gain/acre. However, this requires good management, good cattle and a good growing season.

### **Potential Animal Problems**

A concern of most cattlemen when considering grazing alfalfa is the possibility of bloat. Cattlemen should not avoid using alfalfa pastures for fear of bloat. However, they should be aware of what they can do about it. A good method of control is to feed 1-2 grams per 100 lb bodyweight of poloxalene (Bloat Guard®) daily in a crushed corn-salt mixture. Bloat Guard® or Bloat-blox® (laureth-23) are also available in free-choice molasses-mineral blocks which do not require daily handfeeding but intake may not be as consistent. Rumensin, a feed additive, will also give some degree of protection.

Other practices which will help avoid bloat are: don't turn hungry animals onto alfalfa, especially if it is wet or immature. Cattle can be fed dry feed before being placed on alfalfa. They can be rotated to a new paddock after the dew dries. If a bloat preventative is being fed in a limited amount of grain, feed it during the hot part of the day where the cattle have congregated under shade - so that they all consume it daily. It should also be fed 2-5 days before turning them on alfalfa so that it is present in the rumen when grazing begins.

### **Grazing Demonstration - 1989 to 1991**

In 1989, an alfalfa grazing demonstration was initiated at the Princeton Station. Sixteen acres of alfalfa was seeded the previous fall. Forty-nine crossbred steers averaging 525 pounds (541 lb payweight) were purchased on April 7. They were placed in drylot on a commercial conditioning feed plus hay. This receiving period was utilized to condition the animals for grazing and to permit time for observation and treatment (if needed). Calves were placed on fescue pasture until the alfalfa was ready to graze and were acquainted with an electric fence during this time.

Infestation of alfalfa weevil and subsequent spraying, along with some "crown rot" delayed the initiation of alfalfa grazing until May 18. This also resulted in a thinner stand than was desired. Results of 1989 are show in the following table:

TABLE 1. Performance of 49 Steers Grazing Alfalfa/Fescue, 1989.

<u>Period</u>	<u>Treatment</u>	<u>Days</u>	<u>Wt.</u>	<u>Gain</u>	<u>ADG</u>
4/7-4/21	Drylot	14	524.9	53.8	3.84
4/21-5/18	Fescue	27	578.7	60.1	2.23
5/18-6/21	Alfalfa	34	638.8	69.5	2.04
6/21-8/9	Alf/Fes	49	708.3	84.3	1.72
8/9-8/21	Fescue	12	792.6	30.9	2.58
8/21-9/20	Alfalfa	<u>30</u>	<u>823.5</u>	<u>45.4</u>	<u>1.51</u>
<b>FINAL</b>		166	868.9	344.0	2.07

The 49 steers averaged 638.8 lb when alfalfa grazing was initiated. The 16 acres of alfalfa was crossfenced with one-strand of polywire into 8-2 acre paddocks. This provided a stocking rate of 3 steers per acre. Animals were implanted, dewormed, fed 2 lb of grain containing 12 grams of Bloat Guard® daily and provided with a mineral supplement containing Rumensin®.

Thickness of the stand and growing conditions prevented alfalfa from being grazed the entire period. Cattle were removed from alfalfa for 22 days during the grazing season. Alfalfa was grazed 103 days and the gain per acre was 546 lb during that time. Overall, the calves gained 344 lb/hd and had an ADG of 2.07 lb.

In 1990, forty-two crossbred steers were used on the same 16 acres of alfalfa. Grazing was initiated May 24, which was almost a month later than the desired starting date, due to frost damage in the early spring.

The 42 steers averaged 662 lb. when grazing was initiated. They were implanted, dewormed, and fed 1 lb of a grain-salt mixture containing Bloat Guard® and a mineral supplement containing Rumensin®. The initial stocking rate was 2.6 steers per acre or 1738 lb/acre. On September 5, 14 steers were removed and the remaining 28 were grazed until September 18.

Acceptable gains were achieved. However, gains were lower than desired because adverse weather delayed initiation of grazing and the alfalfa stand was thinner than desired. The results are shown in the following table:

TABLE 2. Performance of 42 Steers Grazing Alfalfa, 1990.

<u>Item</u>	<u>PERIOD</u>			<u>Overall</u>
	<u>(5/24-7/6)</u>	<u>(7/7-9/5)</u>	<u>(9/6-9/18)</u>	
Steers	42	42	28	--
Days	43	61	13	117
Total gain	3634	3402	594	7630
ADG	2.01	1.33	1.62	1.61
Gain/acre	227.1	212.6	37.1	476.9

In 1991, grazing began on May 1 with 52 steers averaging 626 lb. and continued until October 1. The heaviest calves were sold on July 17 and the 20 lightest calves were retained. Fifteen calves were added on July 25. Calves were grazed on the alfalfa throughout the grazing season despite hot and dry weather. The following results were obtained in 1991:

TABLE 3. Performance of Steers Grazing Alfalfa-1991.

	PERIOD				
	5/1-6/4	6/4-6/17	6/17-7/17	7/18-8/27 (7/25-8/27)	8/28-10/1
Calves, no	52	48	48	20 (15)	34
Days	34	13	30	41 (33)	34
Gain/hd, lb	35.2	53.5	28.6	126.4	44.8
ADG, lb	1.04	4.10	0.95	3.36	1.31
Gain/acre, lb	114.4	160.5	85.8	276.6	95.1
				(Overall 732.4 lb/acre)	

### Summary

Results of the 3 year study indicated that (1) alfalfa can support excellent gains for yearling beef cattle, (2) bloat can be controlled with daily intake of poloxalene, (3) temporary electric fence can be used effectively, (4) the alfalfa stand persisted after 3 years of intensive grazing, and (5) best results were obtained by removing the heaviest calves mid-way through the grazing period and replacing them with lightweight calves.