Alternative Grazing Systems

A variety of grazing practices and pasture management systems can be used to improve pasture productivity, extend forage availability or reduce pasture acreage requirements.

by **IOWA BEEF CENTER STAFF**

The selection of a grazing system should be based on the benefits obtained compared with added costs. The following is a discussion of the costs associated with rotational grazing management, adding fertilizer and feeding stored feeds for a limited period. Table 1 (see page 2) contains a summary of the estimated costs associated with seven examples of grazing scenarios.

Rotational grazing

Using a rotational grazing system can improve overall forage productivity and increase the per-acre carrying capacity. The additional costs of rotational grazing may include the cost of internal fences, additional watering points or increased hours of labor.

A cost-effective method of dividing a pasture into smaller paddocks for rotational grazing is to use electric fences. Although the quantity and cost of building materials will vary for each operation, the estimated cost for a quarter mile of electric fence is about $278 for materials and labor, plus the cost of the fence charger.

The costs of installing a water system might include the tube, valves, fittings, pump and tanks needed to deliver water to the paddocks that are separated from the central watering point.

Maintaining the internal fences, water systems and moving the cattle from one paddock to another may also require more labor and time. But, with these added costs comes the potential to improve the per-acre carrying capacity.

Additional nitrogen

There are two common methods for increasing the amount of nitrogen (N) available to forage plants in a pasture. The first method is to spread a commercial fertilizer over the pasture each year. This method provides a measured amount of nitrogen fairly evenly over a field.

The second method is to interseed a legume into the established pasture every three years. Although this method may have a lower annual cost than using a commercial fertilizer, the decision of which method to use should be based on the characteristics of the grazing area pasture. Legumes are more commonly used in rotational grazing systems.

Confined feeding

Feeding cow-calf pairs in a confined area for a limited period can extend pasture capacities. The costs associated with placing the cattle

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in a drylot or confining them to a small "sacrifice" area include the cost of the feed, fencing, feeding equipment and facilities. Placing cow-calf pairs in a confined feeding area allows the remaining pasture to rest or grow during a period of stress from weather.

Summary

Although some pasture management systems may increase the variable costs of production, the reduced number and increased production of pasture acres could reduce total costs. Rotational grazing offers a strong advantage over continuous grazing.

Providing additional nitrogen also improves carrying capacity and total costs of production. The summary table contains an example of how the costs per breeding cow differ for different forage types, nitrogen sources and grazing strategies. These cost estimates are based on a cow-calf herd with 60 breeding females, 11 yearling heifers and two bulls.

EXTRA

Editor's Note: *Iowa State University's Iowa Beef Center (IBC) first published this series of fact sheets titled "Cows & Plows" in October 2007. The articles evaluated the management and economics of alternative feed and grazing systems in a time of skyrocketing land values and rental rates, soaring grain prices, and high feed and forage costs. While exact costs represented in the series may differ from today's even higher prices, the derived principles remain pertinent, if not more so.*

Table 1: Summary of cow-calf costs, per breeding cow, under different grazing scenarios

Predominant grass type	Bluegrass	Bluegrass	Bluegrass	Tallgrass	Tallgrass	Tallgrass	Tallgrass
Grazing system	Continuous	Continuous	Continuous	Continuous	Rotational	Rotational	Rotational
Nitrogen source	–	Fertilizer	Fertilizer	Fertilizer	Legume	Legume	Legume
Feeding period			6/15-7/31			7/1-8/15	6/15-8/30
Acres per cow	5.6	2.8	1.6	1.9	1.5	1.0	0.8
Variable costs							
Pasture & fence maintenance	14.06	7.73	4.71	15.67	14.11	10.13	7.80
Fertilizer & application	–	83.87	46.87	55.25	–	–	–
Annualized legume seeding	–	–	–	–	4.68	3.22	2.39
Summer feeding							
Hay[a]	–	–	11.60	–	–	11.60	22.53
Cornstalks[a]	–	–	26.25	–	–	26.25	48.13
Distiller Coproduct[a]	–	–	20.21	–	–	20.21	37.06
Winter feeding	163.09	163.09	163.09	163.09	163.09	163.09	163.09
Crop residue grazing	11.67	11.67	11.67	11.67	11.67	11.67	11.67
Labor	126.93	126.93	137.43	126.93	126.93	137.43	148.17
Other operating costs	124.00	134.86	135.35	131.97	124.67	120.72	130.26
Total variable costs	439.75	528.14	557.19	504.58	445.15	504.32	571.08
Fixed costs							
Fence	7.03	5.01	3.74	4.06	13.28	11.49	10.11
Breeding herd, int & dep	97.81	97.81	97.81	97.81	97.81	97.81	97.81
Pasture rent equivalent	223.33	113.33	63.33	74.67	60.00	41.33	30.67
Machinery & facilities	75.95	75.95	81.20	75.95	75.95	81.20	83.85
Total costs	843.87	820.24	803.27	757.07	692.19	736.16	793.52

[a]Carrying capacity and cost estimates are based on ISU Extension rations, calculations and other publications.

Source: Iowa Beef Center.