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Why Rotational Stocking Makes Dollars and Sense

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More pounds, more dollars, same cows sound possible? It is with the use of rotational stocking which can help you produce more pounds of milk and meat, increase productivity, and using the same number or more animals and at the same time cut costs.

Feed is one of the most expensive inputs and also one of the easiest to reduce. Put expense of stored forage in perspective: If total cost of grazing forage costs a penny a pound, then relatively the cost of grass silage would be about 4.5 cents a pound, corn silage about 7 cents a pound and the cost of grass hay would be 9 cents a pound.

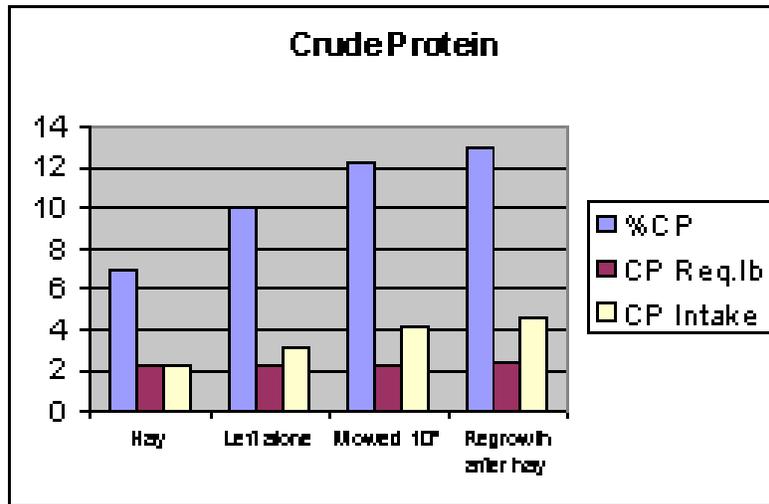
At two of the Purdue Ag Research Centers (Feldun & SIPAC), rotational grazing systems (8 paddocks) have been compared to side by side two (2) paddock systems with same number of cows in each system. While on these systems there was not much difference in average daily gain in 2000 at Feldun, the rotated systems averaged 40 more grazing days and 900 lbs more hay than the 2 paddock systems and had about a \$26 per cow advantage. A more significant difference may have been observed if the 2 paddock system had not been mowed after grazing which actually mimicked the rotated system somewhat.

Why the difference? Rotating allows the forage being grazed to "rest" between grazing periods which allows the plant to collect sunlight, dew (which is critical during dry or droughty periods) and helps keep the plant vegetative. Keeping the plant vegetative is very important because a "growing" vegetative plant is higher in crude protein and digestibility than a older "mature" seed bearing plant. The rest period and chance to regrow replenishes carbohydrate reserves so the pasture stays healthy and productive. The length of the rest period depends on how fast the plants are recovering and producing new growth and how severely the pasture was grazed earlier. If sufficient, actively growing residue is left behind, pastures will recover faster and produce more total growth. If allowed to rest too long, forages become more mature and less desirable for the grazing animal.

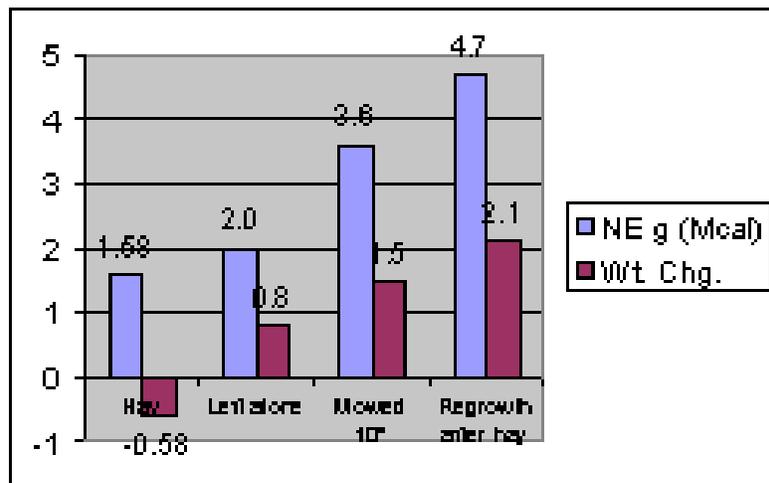
A good example of how quality is effected by management can be seen in a simple demonstration. I will refer to one done in Putnam County in 2000. A nine-acre field of fescue/clover that was nearing maturity was split into 3 paddocks.

The first was mowed with a bushhog to about 10 inches, the second was mowed for hay and the third was left alone. Thirty days later we turned in a group of cow/calf pairs for 4-5 day periods in each paddock and also predicted how they would produce on the hay if they had been fed it at a comparable time period (90th lactation day) results are in the tables that follow:

Crude Protein:



Net Energy for gain (NE g Mcal) and weight change on cows:



The main point to be made here is to note the regrowth after the hay; it is mimicking a rotationally grazed paddock.

Lets look quickly at another thought about increasing that bottom line. Say we have twenty cows selling 20 calves at 500 pounds. Receipts: 20 x 500# at

\$75/cwt = \$7500 with costs: $20 \times \$300 = \6000 leaving ~\$1500 profit. (Profit is defined here as return to land, labor and management)

If we can increase stocking rate by 10% then Receipts: $22 \times 500\#$ at \$75/cwt = \$8250; Costs: $22 \times \$300 = \6600 producing a profit of \$1650 (\$150 increase).

If we can increase calf weaning weight by 10% the Receipts: $20 \times 550\#$ at \$75/cwt = \$8250; Costs still at \$6000 then profit is \$2250 (\$750 increase).

If we can increase price by 10% (\$82.50/cwt) then we now have \$2200 profit (\$750 increase).

If we cut costs by 10%: Receipts: $20 \times 500\#$ at \$75/cwt = \$7500 and Costs: $20 \times \$270 = \5400 , then Profit is \$2100 (\$600 increase). Now, more pounds, more dollars, same cows: Cut costs by 10%, increase calf weaning weight by 10% and increase price by 10%: Receipts: $20 \times 550\#$ at \$82.50/cwt = \$9075; Costs: $20 \times \$270 = \5400 ; Profit: \$3675 (Profit increases by \$2175).

How do you do more dollars?? A few examples may include special sales, pre-condition programs, reputational sales, pooling animals, retaining ownership, custom grazing, purebred animals and heifer development markets. There are niche markets such as Laura's Lean Beef, Certified Angus Beef, freezer beef, wholesale and retail opportunities.

How to increase profits with the same number of cows? Improve genetics as needed, sell problem animals, consider multi-species grazing and or contract grazing. Consider changing calving season to match forage availability or market. Know nutritional needs and meet them; know nutritional values of available forages and feeds. Match nutritional needs of groups of animals with appropriate available forages and feeds. Hay and silage are examples of high value forage feeds for high value animals; beef cows must harvest the vast majority of their own feed to be economical.

A look at stockpiled forage: Grazing stockpiled forages can save producers up to \$1.05 per cow per day as compared to feeding hay.

RECIPE FOR QUALITY STOCKPILE

-Apply 30-60 lbs. Nitrogen in early August -Defer grazing (stockpile) 1 acre of fescue per animal unit -Rotationally graze through the rest of the paddocks -Start strip-grazing stockpiled forage Allocate 2-3 days of forage at a time

How much to graze?

$3000 \text{ lbs. forage/acre} \times 60 \text{ cows} @ 30 \text{ lbs./cow/day} = 1800 \text{ lb. Required/day}$
 $70\% \text{ utilization} = 1800 / .70 = 2571 \text{ lbs on offer}$
 $2571 / 3000 = .86 \text{ acre per day required}$

day grazing period = 1.72 acres 40 acre field $1320 \times 1320 \div 43560 \times 1.72/1320 = 56.76$ or ~57 ft per strip for 2 days

Is it worth the trouble?

1 Acre of fertilized fall grown tall fescue will meet the nutrient requirements of a 1000 lb. Cow for up to 70 days.

60 lb N applied to 3" fescue produced 3000 lbs/Ac @ 70% Utilization = 2100 lbs Available/30 lb/Cow/Day = 70 days @ \$0.32/lb N Cost = \$0.27/Cow/Day Cost

Weaned calves on stockpiled fescue; about \$.50 savings per day in hay cost per calf with an average 2.1 ADG.



How long does it take to pay for an intensive grazing paddock system? Although the cost may seem significant at the start, the increase in the return in animal harvested dry matter per acre can often pay for the entire system **in the first year**. The attached charts show some actual systems that have been installed within the last 2 years that reflect typical cost returns. These are generally done on existing established forages. The producer usually sees an improvement in the forage quality and density as the system remains in place, which will increase the return per acre even more. All this is in addition to an improvement in both the health and the productivity of the animals being grazed, the aesthetics of the farm, and the improvement in the lifestyle of the producer. See the attached charts to calculate how this could apply to your operation.

HARVESTED PASTURE VALUE CHART					
number of paddocks	1	4	6	12	24
grazing efficiency	40%	50%	60%	70%	75%
available DM	Value of grazed forage @ \$60/ton Dm				
14000	\$ 168.00	\$ 210.00	\$ 252.00	\$ 294.00	\$ 315.00
12000	\$ 144.00	\$ 180.00	\$ 216.00	\$ 252.00	\$ 270.00
10000	\$ 120.00	\$ 150.00	\$ 180.00	\$ 210.00	\$ 225.00
8000	\$ 96.00	\$ 120.00	\$ 144.00	\$ 168.00	\$ 192.00
Return to system each year = new system forage value minus old system forage value					
Example of going from a continuous graze to a 12 paddock system on 10000# DM pasture \$210.00 - \$120.00 = \$90.00 per acre per year return to paddock/labor cost					

TYPICAL Paddock SYSTEM COSTS	Cost/acre
150 cow dairy, 152 acres, exterior fence, lane fence, break fences, water system	\$41.20
35 cow dairy, 22 acres, exterior fence, lane fence, break fences, water system	\$59.09
90 head stocker, 70 acres, exterior fence, paddock fences, working area, water system (system cost increased due to proximity to city)	\$93.00
100 head stocker w/ 100 ewe/lamb, 82 acres, lane and interior fencing, water system	\$35.36
25 cow/calf, 32 acres, paddock fences, water system	\$21.16

We have the ability to take control. Rotational stocking or management intensive grazing and other innovative and sustainable management techniques allow us to take control of forages and livestock. Implementing creative marketing techniques allows us to gain some control of the prices received. Don't allow yourself to get stuck "in the box". Start somewhere today!

Looking for more information? Staff with the USDA Natural Resources Conservation Service (NRCS) and Purdue Extension can help you with planning and specific issues such as watering systems, fencing and forages. For help from NRCS, contact your local Soil & Water Conservation District office or contact:

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