

## *Managing Pastures to Improve Profitability*

When it comes to making a profit with a cow/calf operation pasture management plays a very important role. The same pasture systems that returned profits in the 1970s and 1980s often today are resulting in negative returns. Just as the economies of these systems have changed so must their management to remain profitable in the years ahead. This paper will look at various systems and then offer brief highlights of some recommended pasture management practices for the cow/calf producer of tomorrow.

A common practice of the past when land and machinery prices were low was to turn cows out on abundant pastureland all summer and bale the winter supply of hay. If the main pasture ran out during the summer either backup pasture was used or the herd was drylotted and fed baled hay until the pasture recovered. This form of pasture management is called continuous grazing and is still used today. The advantages of this system are the low labor and management that is required. Basically keep the fences repaired, provide a source of water and the cows will let you know when the pasture forage is gone. Disadvantages of this system are many. They include: 1.) low pasture productivity because of the selective grazing of the herd which eventually kills out the desirable forage species and allows the undesirables including weeds to take over the field; 2.) lower carrying capacity because of the factor mentioned above and because of the lack of a rest period between grazings which greatly impacts forage growth; 3.) lower pounds of calves produced per acre because of the two factors mentioned above; and 4.) potential higher incidence of pinkeye because of eye irritations caused by the mature grass seedheads which were not grazed during the abundant spring flush of forage.

An improved form of continuous grazing which was often used in the past and is still commonly used today is rotational grazing where cattle are moved from pasture to pasture as the forage is grazed down. The major advantages of this system are increased pasture productivity and carrying capacity because a rest period is provided to the forage species in this system. The one major disadvantage of this system occurs when a strict rotation is followed with no regard for how fast or slow the pasture forages are growing. Commonly in the spring, forage growth is so rapid that the herd can stay in one large pasture for weeks, which in turn allows the upcoming pastures in the rotation to grow over-mature and become rank, which lowers nutritional value, forage utilization, cow milk production and calf growth.

The most progressive grazing system known today for the cow/calf herd is managed intensive grazing (m.i.g.). This system provides ultimate control of the grazing herd through the use of low cost electrical fencing. It provides maximum forage production and utilization by recognizing how forage pasture plants prefer to grow. The major objectives of this system is to divide the pasture into individual paddocks with the use of fencing to such a size that the herd can graze the forage down in one paddock over the period of 1-7 days and then to rotate the herd in a managed fashion to the following paddocks so that the forage is always grazed in its most nutritious, yet self sustaining stage of growth. Hay harvesting of select paddocks is often utilized in the spring or early summer to take off excess growth and to stage pasture regrowth so that it is always grazed in the eight to twelve inch stage of growth. Major advantages include: 1.) increased carrying capacity (10-25% according to a University of Missouri study); 2.) increased pounds of calves produce per acre mainly because of the reason mentioned above; 3.) improved pasture

productivity even in dry weather because proper forage rest period is provided; 4.) improved pasture species longevity and/or volunteer establishment (especially of white clover) because of the uniform reduction of the grass competition; 5.) more uniform manure distribution because of the greater control of the cow herd and increased soil fertility because of the higher stocking rate; and 6.) the potential to increase the grazing season in the fall or spring which would reduce harvest costs. The major disadvantages include: 1.) increased management required to decide how to layout the fenced paddocks ; 2.) increased management required to decide where and when to move the cow herd next; 3.) increased fencing cost over the other systems because of the additional subdivision of pastures into paddocks, however the material cost per acre for a ten paddock system decreases to less than \$10 per acre if over 160 acres is fenced in (Garrish et. al., 1994).

### ***MANAGED INTENSIVE GRAZING - THE BASICS***

Time and space do not allow to cover all the management aspects of m.i.g. However below are a few of the basic recommendations to help one in planning to set up a m.i.g. system:

- 1.) Plant Past Not Seed! - The first investment should be sub-dividing pastures with fencing. People are often amazed at how productive their pasture can be and what forage species appear naturally when a proper rest period is provided and grass competition is reduced.
- 2.) Establish As Many Paddocks As Possible - A minimum should be 8 as this will provide an 87% forage rest time, 13 % grazing time which will benefit the pasture plants (realize however that any increase in paddock, numbers even less than eight, will show some benefit in pasture performance and calf yield per acre). Missouri studies found these performance numbers to significantly increase up to eleven paddocks and then the gain, though still increasing, did so at a much slower rate.
- 3.) Graze A Paddock No Longer Than Seven Days - Size the paddocks so that the majority of the forage will be grazed down to a 4-5 inch height in seven days or less. This will prevent the regrowth from being grazed again. Obtain MSU Extension bulletin E-2288 entitled "Controlled Grazing" to calculate the size of each paddock.
- 4.) Keep Paddocks Closer To Square In Shape - Paddocks that are longer than they are wide lead to lower grazing pressure and manure deposits at the far end of the paddock which is undesirable.
- 5.) Graze Paddocks When The Forage Height Is 8- 12 Inches - Typically in the spring paddocks must be rested for 20 to 30 days after grazing depending upon heat and rainfall available and into summer and fall this rest period may have to increase to 30 - 45 days because of the decreasing hours of sunlight.
- 6.) Bale For Hay Any Paddock That Get Above 14 Inches In Height - Especially in May or June if the herd cannot keep up with the pasture growth rotate the herd more rapidly but be ready to harvest for hay any paddocks that grow above this height.

## ***OTHER CONSIDERATIONS***

### **Stockpiling**

The practice of setting aside late summer pastures for grazing later in the fall, winter or spring is gaining more attention. This practice is called stockpiling. Usually in Michigan certain paddocks can be left un-grazed beginning in late July to late August depending upon geographical location in the State. This practice is usually done only when there is surplus pasture growth. Growth at this time of the year tends to stay more vegetative and thus it will hold its feed value longer. Grasses tend to stand better under light snow loads and thus grass pastures or grass-legume mixed pastures should be the paddocks of choice for stockpiling if the grazing may take place after snowfall.

Typically stockpiled pasture is grazed after the calves have been weaned and taken off of pasture. The remaining cow herd has a lower level of nutritional requirements and can maintain body condition quite well if the forage is abundant. Random tests of stockpiled forages across Michigan have found that in the fall feed quality can run 14 - 22% protein with 1 - 2 ton per acre of dry matter available and in the late winter to early spring 8 -14% protein with 0.5 - 1.25 ton per acre available.

Stockpiling or extending the grazing season can also be done with corn stalks, brassicas like turnips or rape, or cereal grains like wheat and oats.

Why mess with the mud, and nasty weather and consider stockpiling? University of Missouri data shows that conventional winter hay feeding costs \$0.75 per cow per day; winter stockpiling of pasture is only \$0.20 and grazing corn stalks is only \$0.04 per cow per day! Michigan numbers may be higher but the spread between these different practices would more than likely be similar. A goal of every Michigan cow/calf operation if they want to reduce winter feed costs should be to extend their grazing season by one month!

### ***Nutrient Management***

A mature beef cow will produce \$35 of manure during the six month winter season. For a fifty cow herd this \$1,750 of fertilizer value produced. Herds that stay in the same winter feeding area year after year build up some tremendous soil fertility in that specific location. Letting the cows spread this manure out over the various pastures in the winter can help to improve overall soil fertility and pasture growth while possibly reducing the fertilizer bill. Stockpiling can help this by keeping the cows out on pasture longer. Also rotation of the winter hay feeding site to different locations out on the pasture, when possible, can also help to better utilize this bonus fertilizer.

### ***Improve Your Knowledge Base***

If you are serious about improve your forage management consider doing the following items to further your knowledge. Number one - sign up for the Michigan Integrated Resource Management (IRM) Program to determine your current level of cattle/forage management and to

be able to determine if future changes that you make are truly beneficial. Contact Jamie Orth at 517-432-0085. Number two - join a local pasture walk group sponsored by the Michigan Grazing Network and the Michigan Hay & Grazing Council. Walking the pastures of other Michigan producers and learning how they managed their pastures has been a terrific learning experience for the 1,600 individuals that participated in 1995. Contact your County Extension Office to locate the closest pasture walk group. Number three - attend an upcoming summer grazing school in Michigan to gain great hands-on experience about grazing systems, pasture management, cattle management and much more. Watch for future details!

## **References**

Gerrish, James; Morrow, Ron; Moore, Devin; Davis, Maurice; and Roberts, Craig, ?1994 Missouri Grazing Manual.? Forage Systems Research Center, Missouri Agricultural Experiment Station, University of Missouri, Columbia, Missouri, 1994.

Emmick, Darrell; and Fox, Danny, ?Prescribed Grazing Management To Improve Pasture Productivity In New York.? United States Department of Agriculture, Soil Conservation Service, and Cornell University Department of Animal Science, Ithaca, New York.

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