Why do We Promote Managed Grazing?

Ted Probert

Extension, NRCS, and SWCD folks have been promoting the benefits of Management Intensive Grazing (MIG) for quite some time. I thought it might be appropriate to go back to the basics this month and review the reasons for our enthusiasm with MIG. I hope that the following discussion will serve to enlighten those new to the principles of MIG, and remind those who are already adherents, of MIG’s many advantages.

The plants benefit. It is important to remember that continuous grazing is hard on plants. Continuously re-grazing new leaf growth robs pasture plants of their ability to recover and replenish energy reserves in their roots. This is why rotational grazing is one of the cornerstones of MIG. Rotational grazing allows for quick harvest of plants in a confined grazing area. Ideally, animals are left in a given paddock for no more than three days. Three days following grazing, plants have usually regrown to the stage that re-grazing can cause significant plant damage. Once a paddock is grazed, animals are moved and do not return to the same area until plants have regrown and replenished energy reserves. In the end, under rotational grazing, plants endure less stress, regrow more rapidly, and are ultimately more vigorous and persistent.

MIG increases yields. This is a direct result of the healthier plants produced by quick forage removal, rotation, and rest. Plants in a rotational system recover more rapidly after grazing, grow more vigorously, and produce more total tonnage over the grazing season. Additionally, removal of the correct amount of plant growth, or in other words, leaving the proper pasture residual, encourages plant regrowth and contributes further to achieving optimal yields.

MIG improves pasture utilization. It has been clearly demonstrated that livestock utilize more of the available forage in a pasture with rotational grazing than with continuous grazing. Under continuous grazing, we can expect animals to consume approximately 30% to 35% of the forage produced in a pasture. Moving animals weekly can improve utilization to 45%-50%. Daily moves typically result in 60%-70% utilization. Twice daily moves can yield utilization rates of 70% or higher. The reason for lower utilization on set grazing is forage waste. When animals stay in a larger paddock for an extended period of time they trample more herbage, soil more through defecation, and refuse to consume what they have damaged. Through improved utilization as a result of faster grazing rotations, it is not difficult to see how significantly more animals can be maintained on a given acreage. In turn, increasing stocking rates while maintaining performance (weight gain or milk production) leads to the production of more salable product per acre.

Livestock benefit through improved nutrition. Quality forage is forage with high digestible nutrient content. Maintenance of high quality, nutritious forage is a major plus of MIG systems. Forages are highest in quality and nutritional value when in a vegetative state. Well-managed rotations allow the harvest of vegetative forage, an adequate rest period, and then return to the paddock in the following rotation when the plants have recovered again to an optimum growth stage and quality. In this kind of a well-managed system animals continuously have access to nutrient dense pasture that results in optimal growth, milk production, and reproductive performance.

You, the producer, realize increased profitability. This should be the goal, and is the ultimate outcome with a well-managed grazing system. Increased yield and improved utilization of high quality forage leads to the potential for higher stocking rates and increased productivity and sales per acre. These factors also result in less need for...
supplemental feed. Economic analysis of livestock operations shows that of all the benchmarks we monitor in a production system (things such as calving rates, weaning weights, milk production, etc.), cost of production is the most highly correlated to profitability. Forage, efficiently harvested through grazing, will consistently provide the most cost effective nutrition to livestock. Competitively priced feed, i.e., pasture, in turn is the secret to low cost production and a higher profit margin.

If the principles discussed in this article sound like something you would like to learn more about we would invite you to attend one of the area Missouri Grazing Schools that will be offered in 2017. Schools in south central Missouri will be held at West Plains (April 11-13), Hartville (April 26-28), Birch Tree (June 14-16), Squires (June 19-21), Houston (July 26-28), West Plains (August 29-31, and Centerville, MO (October 10-12). A complete listing of schools with contact information for registration is available at http://mofgc.org/schools.pdf. If you have questions about attending a grazing school or about any facet of grazing management, feel free to give me a call.

Can Grubs be a Problem in Spring?
Sarah Kenyon

Typically grass grubs are controlled in the fall. However, it is possible that this pest could still cause damage in the spring.

Grass grub larvae hatch in the fall. If left uncontrolled, the insect will migrate lower in the soil profile and overwinter. As the soil warms in the spring, the grubs migrate back to the soil surface and resume feeding. Because of this, it is possible to see grub damage in early spring.

The first thing to look for in a grub infested field is brown or bare patches scattered throughout the field. Upon close inspection of bare or thin spots, you will see a lot of loose soil on the surface of the ground. This loose soil is the result of the grub larvae “working” the soil. You probably won’t see the grubs themselves on the surface as long as they are healthy. They tend to stay below the soil surface during daylight hours and come to the top and feed at night. The loose soil, however, is a pretty good indicator that grubs are present. Another thing to notice is that the forage in the brown areas will roll back easily when you move your foot over it.

You can also dig along the borders of the damaged area to determine if grubs are present. Specific threshold levels depend on the exact species of grub, but a general rule of thumb is that if three or more per square foot are present, then treatment is warranted.

Sevin is one of the recommended insecticides for controlling white grubs. It should be applied at the rate of 1-2 quarts (1-2 pounds active ingredient) per acre. In order to insure good control, it is important to make sure the spray droplets hit the soil surface. If vegetation is too tall at application, control may not be desirable. Spraying after drilling when a furrow has been laid open and the soil is more accessible is a good practice.

Beef and Forage Seminar to be held in West Plains
Sarah Kenyon

There is still time to sign up for the West Plains Beef and Forage Seminar which will take place on Tuesday, March 7, 2017 at the Howell County Extension Center, located at 1376 Bill Virdon Blvd, West Plains MO (next to Hero’s Coffee). Registration will start at 5:30 pm, with the meal and presentations to follow. Topics covered at the seminar include tips and strategies to make local beef and forage producers more successful.

Dr. Kevin Bradley, MU State Weed Specialist, will discuss weed considerations for pastures and hayfields. Bradley will emphasize research that was conducted in Howell County in 2016. Other specific topics include the impact of fertility on weed populations, and weed contaminants in pollinator seed mixes.

Dr. Michael Flythe, USDA-ARS Rumen Microbiologist, Lexington, KY, will present on the role of red clover isoflavones in livestock production. Red clover isoflavones may improve protein utilization and help neutralize tall fescue toxicosis. Fescue toxicosis management involves using clover to dilute the toxin. However, this research will highlight new findings that suggest that isoflavones may play an even bigger role in fescue toxicosis management.

Pre-registration is required with a fee of $15 per person. Registration includes meal and reference materials. Deadline to pre-register is March 1, 2017. Late registration fee is $20 per person. To pre-register or for more information, please contact the Howell County Extension Center at 417-256-2391.

Brown or bare patches in a field are an initial indicator of grub infestation.
Building Soils in Pasture Ecosystems
Ted Probert

Soil is a basic resource for all of agriculture and healthy soil is a prerequisite to profitable pasture and forage production. "Building Soils in Pasture Ecosystems" will be the topic of a seminar scheduled for 12:30 pm Friday, March 3 at the MSU Fruit Experiment Station in Mountain Grove.

The guest speaker for the seminar will be Ray Archuleta. Ray is a Regional Soil Health Specialist (Louisiana, Mississippi, Arkansas) for the NRCS Soil Health Division. He teaches Biomimicry Strategies and Agroecology principles throughout the country for improving soil function. He has 32 years of work experience with the Natural Resources Conservation Service in New Mexico, Missouri, Oregon, and North Carolina. He is also a Certified Professional Soil Scientist with the Soil Science Society of America. Additionally, Ray served two years in Guatemala working as a Livestock Specialist in the Peace Corps. He received an A.S. in Livestock Science from Northern New Mexico College and a B.S. in Agricultural Biology from New Mexico State University.

Sponsors for the seminar are Wright County University of Missouri Extension and the Missouri State University Darr College of Agriculture. It is open to anyone involved in forage production or interested in the maintenance of healthy soil.

The Wright County Extension office is located inside the Missouri State University Fruit Experiment Station at 9740 Red Spring Road, Mountain Grove, Mo. Funding and support for the local office comes from the Wright County Commission, MSU, and City of Mountain Grove. MSU provides Wright County Extension with office and classroom space as part of a joint sponsorship and programming agreement signed in 2015. Extension programs are open to all.

Is Total Parasite Eradication Possible?
Randy Wiedmeier

Earlier this month, a screwworm infestation was reported in a population of deer on an island off the coast of Florida. This was a surprise to me because I was under the impression that this parasite had been eradicated. Fortunately, most of the students I used to teach had only heard stories about screwworm infestations in cattle and other livestock. The screwworm fly, Cochliomyia hominivorax, lays its eggs around wounds on most warm-blooded animals including humans. The eggs hatch and the resultant larva burrow into the wound and begin feeding on living flesh. In fact, these larvae require living flesh to develop. As the larva feed the wound expands and attracts more screwworm flies to lay their eggs, which can result in hundreds of larva infesting a wound. If heavily infested wounds are not treated, death can result. I wouldn’t advise googling images of screwworm infestations unless you have a strong stomach. Screwworms affected animals in the southern third of the U.S., although migrations had been reported as far north as Nevada, Utah, Colorado, and Nebraska. The Missouri livestock industry was definitely affected by screwworms in the past.

The eradication of screwworms is what I consider to be an excellent example of the achievements of the land-grant education system in the U.S. Two land-grant educated scientists were credited with development of the system that eventually led to the eradication of screwworms: Edward F. Kipling and Raymond C. Bushland. By studying the life cycle of these flies, these two scientists found that the female flies mated only once in their lifetime. They then discovered that they could sterilize male screwworm flies with exact doses of x-radiation. With the aid of their colleagues, they produced and released millions of sterile male screwworm flies into affected areas. As a result, an ever increasing proportion of the eggs laid by the female screwworm flies were not fertile and therefore would not hatch. By 1980, screwworms were considered to be eradicated in the U.S.

This recent outbreak of screwworms in the Florida Keys is a reminder of a couple of things. First, few insidious diseases or parasites are ever totally eradicated. And second, it would be advisable to keep the land-grant education system functioning well. As our newest recipient of the Nobel Prize for Literature once penned, you never know what’s “Blowin in the Wind”. We need to remain vigilant.

Call 1-800-DIG-RITE First Bob Schultheis

Spring is a time when farmers, contractors, landscapers and homeowners do all kinds of "excavating" with shovels, posthole diggers and backhoes. Building fences, digging foundation footings, cleaning ditches, and installing drain pipes and electric wires are all routine projects that can cause inconvenience, injury or even death if a buried cable or pipeline is damaged.

Buried pipelines transport the energy needed to operate our farms, homes and businesses. There are over 2.5 million miles of pipeline in the U.S. that lie beneath farmland, ranchland, and across our country. See Figure 1 for a map of the pipelines. Pipelines are the safest mode of transportation in the United States. A barrel of crude oil or petroleum product shipped by pipeline reaches its destination safely more than 99.9999% of the time.

The Missouri One Call System (MOCS) and Pipeline Ag Safety Alliance (PASA) has asked our help in reminding you to "call before you dig." Missouri law requires anyone who plans to excavate (other than normal shallow tillage) to notify owners or operators of underground utilities at least three working days in advance of the work, so that these facilities can be located and marked.
Pipeline industry research shows that while two-thirds of farmers are aware of call-before-you-dig (811) services, less than one-in-five have ever called before digging. One common excuse given is "I didn't have time to wait around for them to locate the lines." However, the research says differently, as shown in the survey responses below.

Q: When planning a digging project, which of the following best describes how far in advance you plan your project?
- More than a month 10%
- About a month 19%
- About a week 24%
- A few days 41%
- Never plan in advance 6%

We see that for 94 percent of the respondents, there is potentially enough time to make the call and have the lines marked before their digs.

Q: Please list the risks you are aware of that are associated with digging on your property.
- Hitting buried lines 81%
- Terrain concerns 25%
- Personal injury 7%
- Equipment 7%

While farmers and ranchers identified hitting buried lines as a risk when digging, they did not so much associate that risk with damage to their equipment or personal injury.

We see that there is usually time for the farmers and ranchers to call 811 before digging. The challenge is remembering to make that call a part of the planning. They are aware that hitting a buried line is a risk, but you could conclude that because they don't perceive that risk will result in equipment damage or personal injury, they are not taking the time to make the call.

When you call MOCS at 1-800-DIG-RITE (1-800-344-7483, or 811, or go online to www.mo1call.com), be prepared to give the operator information about where you plan to dig, including the Township, Range, Section and Quarter Section (or GPS coordinates), the date and time of day you plan to begin work, the nature of your work, and the name and phone number of a contact person.

The MOCS operator will then give you a list of the utilities it will contact for you. You can check with the County Recorder of Deeds for any other utilities that you must notify that don't belong to MOCS. The underground utilities will be marked according to the color codes required by law in Figure 2.

![Map of pipelines in the U.S.](image1)

With the increasing reliance on electronic communications, a damaged fiber optic cable could not only leave you without phone service, but could also jeopardize distant emergency medical response and air traffic communication, putting many lives at risk. Those who damage such cables can also be held liable for cost of repairs and lost services to other businesses.

The Excavation Safety Guide at [http://excavationsafetyonline.com/1RFlip/2016_ESGAg/excavationsafetyguide/](http://excavationsafetyonline.com/1RFlip/2016_ESGAg/excavationsafetyguide/) provides valuable information to help you recognize the agricultural risks and markings you might see that identify pipelines and other utilities on your property. Take the time to be safe and protect others.

If you have questions on this topic or other engineering concerns, you can reach me at the Webster County Extension Center in Marshfield by phone at 417-859-2044, by email at schultheisr@missouri.edu, or go to our website at [http://extension.missouri.edu/webster](http://extension.missouri.edu/webster).

### Upcoming Events

- **March 3, 2017** — Building Soils in Pasture Ecosystems
  Ray Archuleta, Fruit Experiment Station, Mountain Grove, MO, 12:30 pm

- **March 7, 2017** — Forage and Beef Conference,
  Howell County, West Plains, MO, $20 per person, meal included.
  5:30-8:30 pm, 417-256-2391 to pre-register

- **March 14, 2017** — Ag Disease Outbreak Prevention Workshop, O'Bannon Community Center,
  315 E. Ramsey, Buffalo, MO, $25 per person.

### Missouri One Call color codes

- **Red** — ELECTRIC
- **Yellow** — GAS-OIL-STEAM
- **Orange** — COMMUNICATION-CATV
- **Blue** — WATER
- **Green** — SEWER
- **Pink** — TEMPORARY SURVEY MARKINGS
- **White** — PROPOSED EXCAVATION
- **Purple** — RECLAIMED WATER

![Missouri One Call color codes](image2)