Grazing Cornstalks

Steve Boyles, Ohio State University, Extension Beef Specialist

Grazing cornstalks can give pastures a chance to store sugars for the winter and to continue growing.

A 1000-pound cow can graze on one acre of corn residue for about two months. But it is important to graze cornfields soon after harvest, because after 60 days the nutrient content of cornstalks starts to decline.

Cattle grazing corn residue will select and eat leftover corn first, then husks and leaves, and finally cobs and stalks. While grain is in the field, cattle will be eating a diet that exceeds the protein and energy needs of the cow in the middle of pregnancy. If corn is visible in the manure, supplementation with vitamins and minerals is probably all that is needed. However, when most of the grain is eaten, protein supplements should be added.

A cow in mid- to late gestation consuming husks and leaves will need about 5 pounds per day of average-quality alfalfa hay. Pregnant heifers in late gestation should not be allowed to graze cornstalk fields after all the grain has been eaten. When all the grain is gone, the energy availability is greatly reduced, and the heifers may require more energy for gaining weight than what is in the leaves and stalks.

The most efficient way to graze corn residue is strip grazing – using electric fence to allow animals into a portion of a field. Controlling the area grazed with moveable electric fencing can increase residue consumption by up to 50 percent by preventing the animals from grazing selectively and trampling many of the leaves and husks.

Grazing days per acre can be increased if cornstalk fields are strip grazed in weekly to bi-monthly blocks. Strip grazing offers an additional advantage in that diet quality is elevated when animals are released into the new areas of a field on a timely basis.

Producers with a conservation plan should check with the Natural Resources Conservation Service to be sure that grazing cornstalks does not violate their plan.

Grazing cornstalks effectively can help reduce feed costs and allow recovery time for pastures. If you can use harvested cornfields, they are an excellent feed source.
Grazing School Offered

Grazing? That’s simple! Just open the gate and let the livestock in. When there is nothing left, feed hay!

Actually it is a bit more complicated than that. By rotational grazing, producers better utilize the forage resource throughout the year.

Would you like to learn more about rotational grazing and reducing animal maintenance costs? Grazing 102 is a 2-day program designed to help producers understand some of the fundamental concepts of a management-intensive grazing system.

This program will be held June 29-30, 2007 at the Feldun Purdue Ag Center just west of Bedford, IN. The cost of the program is $65. Registration can be made at the Washington County Extension Office, 812.883.4601. Enrollment will be limited to the first 30 individuals.

This will be a two-day program that covers the basics of rotational grazing along with tips and techniques to improve existing grazing programs. There is no set pattern that works in every situation; the grazing system needs to be fit to the individual situation. Producers need to be observant and flexible in order to adjust management practices as the animals and forage dictate. One must understand the concepts; goals must be in mind and then necessary changes must be made to fit the situation.

Topics and speakers are:

Fencing plus Why Rotate? --- Robert Zupancic
You Want How much Water Where? -- Robert Zupancic and Jerry Lish
Roots, Leaves, Sun, Photosynthesis and Grazing -- Brad Shelton
Managing Tall fescue -- Jason Tower
Soil Fertility and nutrient Cycling – Steve Hawkins
How Much Feed is in the Paddock? --- Ed Heckman
Grazing Past Thanksgiving -- Roger D. Robinson
Pasture Renovation—Robert Zupancic, Jason Tower and Brad Shelton
Forage Species…What Goes Where? -- Ed Heckman
Health Issues Associated with the Grazing Animal -- Jerry Rusch, DVM
Matching Livestock Needs with Forage Quality – John Johns
My Cow Costs Me How Much? – Kenneth Burdine
Grazing Testimonial – Dave Nuhring

In addition to the presentations, participants will receive extensive reference materials as part of the program. Plan now to participate in Grazing 102! Don’t be left in the hay loft on this one!

If you have a disability that requires auxiliary aids or special assistance for your participation in this event, please contact Purdue Extension - Washington County office at 812.883.4601. Brad Shelton, Extension Educator, is the coordinator of Grazing 102.
Planning for Periods of Lower Forage Production

Midwest summers usually bring hot weather and lower-than-wanted rainfall. Consequently, forage production from cool-season grasses and legumes does not meet the needs of Midwest livestock. What is a grazier to do?

Listed below are some considerations:

Increase the number of paddocks and decrease paddock size; this should increase the uniformity of utilization of forage. Combining herds might also achieve this result.

Increase grazing period in each paddock by one-half day. This will increase the rest period of all the paddocks.

Plant warm-season lovers like sorghums, millets and sudangrasses.

Graze some hayfields.

Plant turnips or kale.

Plant rye, wheat, triticale or oats for fall grazing opportunities. This could be done following corn silage, wheat, soybeans or other double crop possibilities.

Feed hay or corn.

Wean calves early.

Sell open females and other unnecessary mouths.

Next year plant some corn for grazing.

Next year plant some warm season grasses.

Apply nitrogen on grass pastures in early June to promote growth of grass in June and July.

Overseed legumes into grass pastures.

Overseed red clover into wheat. Graze the red clover after wheat harvest.

Check AY-263, a Purdue Agronomy Extension leaflet, Producng Emergency or Supplemental Forage for Livestock, for seeding rates, planting dates, and grazing information.
Each and every animal must learn that
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www.agry.purdue.edu/forageday

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Results will be announced within 2 weeks following the field day. Hay may be
taken by the owner after the day’s activities.

Hay Quality Contest (Must be entered by 11 a.m.)
To participate in the contest, bring an unbroken bale of hay. A certificate will be awarded by the
Indiana Forage Council and forage-related products will be provided by agribusinesses to the winner
of each division (grass, legume and mixed). Hay will be tested with a Near Infrared Reflectance
Spectrophotometer. Results will be announced within 2 weeks following the field day. Hay may be
taken by the owner after the day’s activities.

The site of Purdue Forage Day will be at the Lawrence
County Fairgrounds located southwest of Bedford, IN on
Hwy 50, one mile west of the junction with Hwy 37.

If auxiliary aids and services due to a disability are
needed, contact Lisa Green at 765-494-4783.

FORAGE DAY IS SPONSORED BY THE PURDUE UNIVERSITY
COOPERATIVE EXTENSION SERVICE AND THE INDIANA
FORAGE COUNCIL.

For more information see: www.agry.purdue.edu/forageday

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Bromegrass

Bromegrass is a productive, palatable, nutritious, long-lived cool-season grass. It starts growth early in the spring and develops a seedhead in May which ripens in July. It remains semi-dormant until cool, moist weather returns in the fall. Then it continues to grow into early winter. As an upright grass, it spreads by short rhizomes. Its fibrous root system becomes extensive and interlaced with the rhizomes to form a coarse but dense sod. Yet it crowds companion legumes less than most grasses.

Bromegrass has a higher nitrogen requirement than other forage grasses. Except on highly fertile soils, added nitrogen at seeding is a necessity, and an abundance of nitrogen is needed for stand maintenance and production thereafter. This nitrogen can come from regular applications of nitrogen fertilizer or from a good stand of legumes. Bromegrass becomes "sod bound" and makes little growth even on fertile soils when this extra nitrogen is not available in liberal amounts. Bromegrass should be grown with a legume. Manage the legume, and the grass will take care of itself. Bromegrass usually outlasts legumes, as most grasses do. This is where addition of nitrogen fertilizer is necessary.

Overgrazing in late April is usually disastrous to bromegrass stands. Light grazing (leaving at least three inches of stem) saves the active growing tissue. This tissue provides for a rapid recovery which keeps the grass productive. Heavy grazing can occur in mid to late May because the plant is fully active, producing new sprouts which will develop the second crop of shoots from the rhizomes. The plants need to be grazed at this time to prevent energy from being used to produce a seed crop. This grazing action also encourages regrowth.

A management consideration would be to topdress with 50 to 75 pounds of nitrogen per acre to get satisfactory regrowth from the second crop shoots. This will assure adequate grass to balance against the legume in August. If bromegrass is to be grown with legumes for its nitrogen supply, the soils should be high in lime to accommodate the legumes.

Bromegrass seed should not be covered more than one-half inch deep in heavy soils and no more than three-fourths inch in lighter soils. The cultipacker seeder is an excellent way to seed a brome-legume mixture.

Bromegrass persists quite well in a three-cut hay system.

Bromegrass does very well in May, June, and October; it is the most palatable of all the grasses in those months, if it is in the immature stage.

All programs and services of the Hamilton County Soil and Water Conservation District are offered on a nondiscriminatory basis without regard to race, color, religion, sex, age, marital status or disability.

This issue is sponsored by the Indiana Grazing Lands Conservation Initiative. The mission of GLCI is to provide high-quality technical assistance on privately owned grazing lands on a voluntary basis and to increase the awareness of the importance of grazing land resources.
A management-intensive grazing system is a combination of permanent fence, temporary electric fence, a watering system, forage, animals and management.

A general guideline is to have as similar an area as possible enclosed in one paddock. Hydrology, aspect, soil type, and vegetation type are highly variable depending upon topography. For example, the ridge top will be fairly dry, which means it will be drought-prone in the middle of the summer. In addition, the ridge top will be dry and early growing in the early spring. The soil in this area will accept cattle earlier, without the danger of pugging, than a nearby swale.

The south-facing slope will tend to be hotter even than the ridge top, which allows it to green up earlier in the spring and to stay green longer in the fall. The north-facing slope will be cooler and moister. It will tend to have a deeper soil, and it will be slower to green up in the spring than the south-facing slope. It will stay green during a drought because of the cooler, moister conditions. Because it receives less direct sunlight, the north-facing slope generally grow less forage volume than a south slope, but it will grow it during those critical dry summer months when the south slopes may burn up.

The valley or swale has its own characteristics. It tends to be moister than the north slope, which is beneficial in the middle of the summer, but it can be devastating during the "mud" season. It tends to have the deepest soil because it collects the sloughing from the hillsides.

If we graze a south-facing slope, a north-facing slope, a ridge top, and a valley all in the same paddock, this mismatching will reduce the efficiency of the grazing program. For example, if we put livestock into a paddock during a drought when the north-facing slope is to be grazed, it is quite possible that the south slope is baked brown and has not regrown. Overgrazing will probably occur. Another scenario -- if we turn in livestock when the south slope first greens up in the spring, they will spend time in the valley where the grass is dormant and the soil is still cold and wet from the winter. Pugging will damage the forage.

The area at the bottom of a hill is often damp. Water ducts out from the hillside and eases into the valley at that point. If a fence is placed above this area, livestock will walk in this wet area. The fence needs to be below this area so that its advantage can be utilized without damaging the seep.

A grazier needs to know the conditions of the land. One needs to know the locations of the wet areas, where warm air flows, where cold air flows, where the dry areas are, and the type of vegetation in the different areas.
The land, which has assets and liabilities, is the foundation of the grazing activity. Too often we force square paddocks and inappropriate grazing systems. Whenever we force something on the land, we either have to use capital-intensive mechanisms to maintain production, or we reduce conversion of solar energy and take the loss.

For example, deciduous trees are 50 percent more efficient at converting solar energy into biomass than are forages. In many areas, north slopes should be left in trees and south facing slopes planted to forage. The southern aspect tends to be drier, which is not conducive to good tree growth, and the northern aspect gets more indirect sunlight, which is more efficiently captured by deciduous trees. North slopes grow premium quality hardwoods. The soil is deeper; the ground is more moist and soft; the trees are shade tolerant.

Eastern aspects are very much like north aspects; western ones are like southern ones. The morning sun is never as hot as the afternoon sun.

If we do not match the grazing to the land, we are operating at half throttle instead of full throttle. We need to fully capitalize on the assets of the land and keep control of the expenses. Managing solar energy will help to accomplish this.

Straight fences are not found in nature. Placing permanent fences on the keylines will not necessarily guarantee that we always will match the grazing to the land, but it will go a long way toward reducing abuse. Animals tend to walk on the contour, not up and down. While keylines and contour lines are not the same, they are similar enough to capture this tendency of animals. The animals benefit; the land benefits; and the bank account benefits, when we place the permanent fences on the keyline.

Put in very little permanent fence at first. Use temporary as much as possible. Fences that do not get moved within three years should seriously be considered to be permanent fences in the near future. They have proven that they work correctly.

As fences are made permanent, look at the length of the temporary fences. They should not be longer than 300 yards. Fences that require a length longer than this require more consideration. A lane probably should be put into the design. The reason is two-fold. First, the break fence is too long to be efficiently set up and taken down routinely. The paddock "slice" will probably be too thin, which results in long, narrow paddocks. The more square the paddock, the more efficiently and evenly the livestock will graze. Secondly, the lane allows more grazing flexibility. Portable electric fences manage the "four-legged" harvesting machines.

Laying out a paddock system includes both permanent and temporary fencing. Paddock layout needs to follow the variances in the land and be highly flexible. Customize a design that individualizes the characteristics of your farm. This design will insure efficiency and function for many years to come.
Quality Winter Feed Using Stockpiled Fescue

Whenever the topic of tall fescue comes up in a conversation, it is almost always in connection with the problems of "summer slump" and endophyte. However, there is one area that fescue can excel for cattle and sheep producers and that is to stockpile it for grazing in November and December.

Benefits of Fescue

Fescue palatability increases in the fall, and the quality is maintained later in the season than other grasses. In addition, concerns about infected fescue or toxicosis are reduced because most of the toxins are concentrated in the seed heads and stems. When we stockpile for the fall, we are primarily growing leaf tissue. Finally, fescue is ideal for late season grazing due to its ability to withstand trampling during the winter.

Management Options

There are several practices we can use to improve the quality and/or yield of the fescue. The first is to determine when to start stockpiling. This can begin July through August. Generally, the earlier you start stockpiling, the greater the yield you will have, but the lower the quality. The opposite is true for the later in the year stockpile -- higher quality and lower yield.

Another management option that can be utilized is nitrogen fertilization. The rate and timing of the application can influence the quality and the yield of fescue. In Southern Ohio, trials of 46# and 92# per acre of actual nitrogen (100# and 200# urea) were applied, and a significant response was received from the 46# application rate. Slightly higher quality yields were obtained from the higher rate, but not enough to warrant the additional expense.

Another benefit of the addition of nitrogen is the improved quality. On pasture that was last harvested in mid-August and had 46# of actual nitrogen, crude protein levels were over 10% even into February.

Conclusion

A lot of farms have substantial acres of fescue; these acres can produce a reasonable quantity and quality forage for grazing. Graziers can use it to their advantage by beginning to stockpile in July or August, and applying 46# of nitrogen per acre in August. Then, simply let it grow for grazing in late fall and into the winter. This is an inexpensive option to using harvested feed. This should improve the bottom line.
Mistakes That Can be Avoided with Electric Fencing  
Wayne Burleson, Range Management Consultant  
Absarokee, Montana

High-tensile, smooth wire, electric fencing is the fastest and most affordable fence, and its technology has drastically improved over the last decade. Many people are still hesitant to use it because they remember old failures, wires breaking, chargers starting fires, wet vegetation shorting out the fence and other troubles.

With some commitment and a modest investment in time to learn how to use this new technology, you can save many dollars and many hours of maintenance time by making electric fencing work for you. Here are some common mistakes that you should avoid:

**Poor earth grounding.** Install at least three ground rods that are 6 to 8 feet long, galvanized, and attached to good ground clamps. Poor grounding gives weak shocks.

**Using different types of metals.** When copper is hooked to steel wire, something happens that is called electrolysis; the metal becomes corroded. This makes a poor contact, and the shocking power is weakened.

**Inadequate animal training.** Each and every animal must learn that the fence hurts. Build a handy training fence, preferably on heavy, wet soil. Flag the fence for visibility and force the animal to try to cross the fence.

**Wires tied tight to each fence post.** To maintain elasticity (the rubber band effect), wires must float past each line post.

**Poor-quality insulators.** Sunlight deteriorates plastic. Usually, black ones are treated to resist degradation by ultraviolet light. Poor quality insulators usually turn white or clear after a few years in direct sunlight.

**Staples driven in all the way.** When using plastic tubing as an insulator, don't staple it too tightly. You may end up spending a lot of time looking for a short, when it really is a result of connecting a wire to a ground wire.

**Kinks in high-tensile wire.** A small kink in stiff wire will always break. Also, avoid hitting this kind of wire with a hammer as this will likely damage the wire causing a break. Always cut out a damaged section of high tensile wire and splice it. A hand-tied square knot makes the strongest knot.

**Installing in-line strainers close together.** Wires will flip together once in a while. If in-line strainers are installed one above the other, they will sometimes hook up. Separate in-line strainers by a fence post, and they will never catch on each other.

**Wires too close together.** Keep them at least 5 inches apart.

**No voltmeter.** Without a voltage meter to check how hot a fence is, you are just guessing.

**Wire too small.** The larger the wire, the more electricity it will carry. Don't skimp on the size.

**Inadequate charger.** A wimpy fence charger gives you a wimpy fence. Don’t skimp here because animals will think that smooth wire fence is a joke without a strong bite.
Spring Development

Susannah Hinds, NRCS NW Indiana Grazingland Specialist

Do you have a spring on your property? Or even a wet, seepy area? Are your livestock currently wading into it to get a drink? If your spring is in a suitable location with a reliable flow, it may behoove you to improve it. Springs are a relatively inexpensive source of clean, fresh water. And once they are constructed properly, with a limited amount of maintenance, they should last for decades.

There are 9 main components of a spring development:

1. **Water Source.** This should be located at an elevation higher than your desired tank location. It should also have a reliable flow throughout the grazing season.

2. **Perforated Pipe.** This is laid perpendicularly below the water source to collect the water. It should be at an elevation below that of the water source so you don’t back up water and inhibit flow. This pipe should be a minimum of 4” drainage pipe or other sturdy pipe with holes drilled.

3. **Impermeable Barrier.** This is placed under and downhill of the water source to create an envelope and insure the water gets into the perforated pipe. It can be as elaborate as a concrete wall or as simple as a blue tarp. Site conditions will determine which is necessary.

4. **Filter.** Measures need to be taken to insure soil does not enter the delivery pipe. Geotextile fabric or a sand-gravel filter can be used. Sand, gravel and rock should be clean, hard and durable. This filter will completely surround the perforated pipe.

5. **Tee.** This will connect your perforated pipe to your delivery line.

6. **Delivery Line.** This is usually 1 ¼” to 1 ½” rolled black plastic pipe. The size will depend on the output of the spring and the grade of the line. A positive grade is necessary for the entire line unless vent pipes are used to prevent air locks.

7. **Spring Overflow.** There should be a line from the spring to be used as an overflow. This is vital for seasonal high flows or variable flows of your spring. This insures that your delivery pipe will not burst under the pressure of the excess water.

8. **Tank.** Tank size is dependent on output of the spring as well as the number of livestock it will serve. Tanks should be plumbed from the bottom to limit exposed components that could be rubbed on by livestock. Concrete, aluminum, heavy plastic or other suitable material can be used as a tank. A standpipe is used within the tank.
should be the height of the desired water level within the tank. I recommend using geotextile fabric under the tank with rock on top to avoid mud problems.

9. Tank Overflow. This pipe is also plumbed from the bottom of the tank with a standpipe and an elbow at the desired water level within the tank. It will run either to another tank or to a stable outlet. This takes the excess water away from the tank and avoids mud problems.

With this simple setup you may be able to distribute clean, reliable water to multiple paddocks. At the very least you can clean up that wet spot on the hill and provide clean water in a tank to your livestock. If you have questions about the suitability of a spring on your property, contact your local NRCS office and set up an appointment.

**Business Resolutions**

One normally thinks of making resolutions for the New Year, but good managers are thinking and planning all the time. Here are some resolutions that you might consider implementing at any time:

1. **Look at your continuing education program.** Resolve to spend at least five days to learn more about forage production and management skills. Attend field days, pasture walks and other meetings to gain new knowledge and new perspectives.

2. **Take a good look at your fencing and watering systems.** Are these two components of your grazing system as complete and as improved as they should be? Is the fencing system properly grounded? Is water available in every paddock or close to every paddock?

3. **Get your office organized.** One of the hardest organizational problems for most people is keeping track of all the information that comes across their desk. Resolve to file information by category so that it is easily found when it is needed.

4. **Promise to set aside a couple of days for long-range planning.** Start by taking a blank sheet of paper and writing down goals to improve your business and personal life. Then figure out how to reach those goals. This might best be done away from the farm. Employ the assistance of others as you take a good look at your operation.

5. **Practice good time management.** Time is a very important resource. It must be used effectively in order to get everything accomplished and to be successful. Resolve to analyze your work habits and the resulting output. Make needed changes.

6. **Meet with other graziers and advisors.** Resolve to meet with others regularly in order to evaluate new information and new plans. Experiences of others may save you several dollars or a lot of anxiety as you plan changes in your operation. Support of others is very important as we learn new skills and concepts.
Graziers’ Comments

Ed Heckman

As I have listened to graziers, these comments attracted my attention.

Animals will take a certain number of bites of grass per day. When they use up their daily quota of bites, they will stop grazing, even though they are not full.

The best plants for dry matter intake per bite are ladino clover, bluegrass, white clover, perennial ryegrass, and birdsfoot trefoil.

Any plants standing in the pasture after grazing will not be eaten that year. Do you want them to scatter seed and/or shade out your legumes?

A legume component is particularly valuable to keep the energy content of the forage high during the “summer slump”, when grasses lignify and decline in digestibility.

So many graziers cull their open beef cows at pregnancy-checking time when they wean. That is when they’re pulled down the furthest and least salable. If you weigh your cows at weaning time, in a thirty-day period, they’ll put on 90-100 pounds.

The best three investments are cows, grass, and knowledge. The worst are buildings and machinery.

Constantly observe the lessons of Nature.

Double your soil’s organic matter percentage, and your water holding capacity will increase eight-fold.