Winter pastures benefit from in-season tips

by James Locke / jmlocke@noble.org

Winter pasture (wheat, rye, barley, etc.) can be a valuable asset for many cattle operations. It is often the most cost-effective way to put weight on stocker cattle or condition on developing heifers. I previously have written on winter pasture establishment (find the articles at bit.ly/seeding-guides and bit.ly/establish-winter-pasture). For this article, I would like to provide some in-season management tips.

Fertilizer and lime management. Fertilizer recommendations are made for nitrogen (N) to meet the crop’s yield goal and for phosphorus (P) and potassium (K) to meet sufficiency demands. Lime recommendations are made to address soil acidity. Soil analyses are necessary to identify P, K and lime needs. If these are limiting, production potential and response to N fertilizer will be reduced. Additional information on soil sampling and the importance of P, K and lime can be found at bit.ly/soil-sampling-is-key, bit.ly/does-lime-pay and bit.ly/ps-and-ks. Nitrogen rates are based on yield goals that are determined by potential seasonal productivity, stocking rates and corresponding forage demand. We can estimate total forage demand, forage demand per acre and N recommendation with the following formulas:

- Cattle number × average cattle weight in pounds × 0.03 (percent intake) × total grazing days = total forage demand in pounds dry matter (total DM)
- (Total DM ÷ 0.85 grazing efficiency) ÷ acres = forage demand in pounds dry matter per acre (DM per acre)
- (DM per acre – 1,000 pounds) ÷ 20 = recommended pounds actual N per acre

Winter pasture will generally produce between 1,000 and 2,000 pounds DM per acre without added N, which is why we subtract 1,000 pounds from the DM per acre. If field history has shown this to be a highly productive site without added N, this can be increased up to 2,000 pounds. Divide the result by 20 because the N response is about 20 pounds.
additional DM produced per pound of actual N applied. If fall and winter forage production is the priority, apply most or all of the N fertilizer at or near planting. If spring production is most important, apply about 30 percent of the N at or near planting and the remainder before the rapid growth phase in the spring.

Following are example calculations for an operation planning to turn out 160 500-pound steers on 160 acres of good wheat pasture for a 120-day fall grazing turn. They are anticipated to gain approximately 2 pounds per head per day and come off weighing 740 pounds. Their average weight will be 620 pounds, (500 pounds in + 740 pounds out) ÷ 2 = 620.

- 160 head x 620 pounds x 0.03 intake x 120 days = 357,120 pounds total DM demand
- (357,120 total DM ÷ 0.85 grazing efficiency) ÷ 160 acres = 2,625 pounds DM per acre demand
- (2,625 pounds DM per acre – 1,000 pounds) ÷ 20 = 81 pounds actual N per acre recommended

**Insect and mite pest management.**
A wide variety of insect and mite pests can cause damage to winter pasture. Caterpillars, particularly fall armyworms, are probably the most common and damaging pests. Fall armyworms are a threat from wheat emergence until a killing freeze occurs. True armyworm and army cutworm outbreaks are less common but can occur throughout winter and into spring. The aphid complex includes several species that can cause damage from emergence through graze-out. They cause yield reductions by feeding on plant juices, injecting toxins and vectoring diseases, such as barley yellow dwarf virus. The two most common aphid pests are greenbugs and bird cherry-oat aphids. Mites also feed on plant juices and cause low vigor, leaf desiccation and necrosis. Two of the most common mite species are brown wheat mites, which are more prevalent during dry conditions, and winter grain mites, which thrive during cool, wet conditions. Several other species, like grasshoppers, wireworms, Hessian fly, chinch bugs and white grubs may damage winter pastures. Careful field scouting is vital to determine the species and severity of pest outbreaks. If a pesticide treatment is necessary, refer to the label for the product rate for that pest and follow all grazing restriction requirements.

**Grazing management.**
Initiate winter pasture grazing when it is approximately 6 inches tall and well rooted. While grazing, maintain at least a 3-inch stubble height unless it is at the end of spring graze-out. Due to differences in seasonal production potential, the stocking rate for the fall-winter grazing turn will usually be about one-half of that of the spring grazing turn. A very rough stocking rate rule of thumb for well-managed winter pasture is approximately 500 pounds of beef per acre during the fall-winter turn and 1,000 pounds per acre during the spring turn. Note that if it is dual-purpose and the pasture will be harvested for grain, the cattle need to be removed before first hollow stem and there will be no spring grazing turn.

While weather conditions and other factors beyond our control can affect winter pasture, following these tips will go a long way toward ensuring productive and profitable winter pastures.
Agriculture is an industry that has been misunderstood by those outside of it. It has at times been criticized, mocked and left a mystery to the people who rely on it the most. A great deal of that has to do with the individuals involved in agriculture. In general, ranchers and farmers are low key and more interested in doing their job and doing it well than beating their own chest. That humility may be a great character trait, but it doesn’t help to promote awareness and understanding of why agriculture is so great and essential.

Today less than 1 percent of our population works in agriculture and less than 2 percent of the population lives on farms. Interest in how food is raised is increasing daily, even though less than 10 percent of a U.S. family’s income is spent on food. There are many opportunities to tell your agriculture story. Many in the industry have already sensed the need to reconnect with consumers and are actively telling their story and emphasizing the importance of environmental stewardship, food safety and good animal care practices.

Being an advocate for agriculture is nothing new, but agriculturalists need to focus more on telling their stories of what agriculture means to them and why they choose that lifestyle, as well as the depth and breadth of their conviction.

Anyone in agriculture telling the story of their operation has impact. They should tell it often and with conviction and commitment. It can be as simple as talking to a consumer in a grocery store, writing a letter to the editor of their local paper or to a legislator, or even going into a classroom. Agriculturalists should also become involved in trade and professional associations related to their operations. This is a very effective avenue to communicate agriculture’s story. Association memberships can be pricey, but when considering the benefits, trade and professional associations are a great investment for agricultural producers and their industry.

Trade and professional organizations offer dozens of benefits, but the following are three major ones:

- **Education:** Associations offer a variety of educational opportunities from webinars to national and international conferences. Often, the educational resources alone are worth membership.
- **Advocacy:** Advocacy is perhaps one of the most overlooked benefits of a trade association. Members belong to and support an organization dedicated to protecting and advancing industry needs. Having a dedicated team to lobby and advocate on behalf of the membership is powerful. Segments of the agricultural industry not engaged and at the table are on the plate.
- **Networking:** This might seem obvious, but associations offer wonderful opportunities to connect with others in our industry. Members can learn from other members and can even create alliances or partnerships.

What’s great is that trade and professional associations typically exist on national, state and local levels. Of course, it’s important to find the right one. Consider asking colleagues and competitors what associations they’re involved in. Look at your local newspaper and event calendars to see which associations are the most active in your area. If you find one that looks like a good fit, contact a few existing members and ask them about their experiences. When conducting this due diligence on potential associations, you will find the right one, benefit from the membership and become engaged in the conversation.

As the divide between urban and rural continues to widen, it is increasingly critical that agricultural producers become more vocal about the importance of agriculture.
Prescribed Burn Workshop
Prescribed burning is a natural process that can be effectively used in land resource management, but it must be used in a safe and proper manner. This workshop is designed to introduce participants to the various aspects of burning, how to conduct a safe burn and give a hands-on experience. If weather permits, afternoon demonstration burns will be conducted.

8:30 a.m.-5 p.m.
Jan. 26, 2016
Noble Foundation Oswalt Road Ranch, Marietta, Oklahoma
Registration Fee: $20, includes lunch

Integrity Beef Alliance Meeting
The Integrity Beef Alliance is a cow-calf program with goals to increase marketability of ranch-raised calves through increased brand recognition, addition of stacked value-added traits and volume sales of high quality calves. The winter Integrity Beef Alliance membership meeting will allow producers interested in or new to the program to meet seasoned program producers and to learn about program specifics and the protocol for the upcoming year.

5-8 p.m.
Feb. 16, 2016
Ardmore Convention Center
Registration Fee: $30 for nonmembers
Texoma Cattlemen’s Conference:
The Cattle Industry: Evolving through Innovation and Technology

The U.S. cattle industry leads the rest of the world in science and technology innovations, and cattle producers have been rewarded through strategically adopting innovation. This year’s conference will showcase the impact technologies have had on our industry and the emerging technologies that could prove valuable to cattlemen.

Registration and Trade Show: 8 a.m.
9 a.m.-4:15 p.m.
Feb. 26, 2016
Ardmore Convention Center
Registration Fee: $40, includes lunch

Beef Quality Assurance (BQA) Workshop
BQA raises consumer confidence through proper management education and guidelines for the beef industry. This workshop will give insight into BQA standards for animal care, record keeping, nutrition and carcass quality. Participants can become BQA-certified with successful completion of the workshop and a test.

1:30-4:30 p.m.
March 8, 2016
Noble Foundation Kruse Auditorium
No Registration Fee
Stocking supplementation decisions affect profits

by Bryan Nichols / bmnichols@noble.org

There are three main types of nutritional supplementation that are often discussed in regard to stocker cattle grazing wheat pasture: 1) minerals, 2) ionophores and 3) energy feeds.

Wheat forage is generally marginal to sufficient in phosphorus and magnesium, high in potassium, and low in calcium. Therefore, calcium is the mineral that most often limits growth in cattle grazing wheat. A 550-pound steer gaining 3 pounds per day has a calcium requirement of 33 grams. If the steer is consuming 16 pounds of forage, he is deficient 7.5 grams. If a steer consumes 2 ounces of mineral per day, then the calcium concentration in the mineral package needs to be 13.2 percent. If mineral intake is higher, calcium concentration can be reduced. Most commercially available wheat pasture mineral packages will be high in calcium (7 to 17 percent) and low in phosphorus (3 to 6 percent). Data from the Noble Foundation has shown an improvement in average daily gain of 0.2 pounds per day when providing a mineral supplement to cattle on wheat pasture (Reuter, 2013).

Providing an ionophore to cattle grazing wheat pasture is a very economical practice that all producers should employ if not raising cattle for a “natural” market. In the same Noble Foundation study, inclusion of the ionophore monensin increased average daily gain 0.2 pounds per day. This increase in gain is additive to the gains shown through mineral supplementation alone. Ionophore intake should be targeted for 100 to 200 milligrams per day. An ionophore-containing mineral will generally cost approximately $25 per 50-pound sack. If mineral intake is 3 ounces per head per day, cost per animal is 9 cents per day. Average daily gain is increased by 0.4 pounds per day, which equates to an increase in revenue of 20 cents per head per day if grazing cattle on a cost per pound of gain basis at 50 cents per pound. Over a 105-day grazing period, each animal profits an additional $11.55.

Supplemental energy in the form of high-starch or high-fiber feedstuffs can be used to increase individual animal gain, decrease performance risk and increase gain per acre through increased stocking rates. Data from Oklahoma State University showed that providing supplemental energy at a rate of 0.65 percent of bodyweight to 533-pound steers increased average daily gain by 0.33 pounds per day over a three-year study (Horn et al., 1995). This results in a supplement conversion ratio on an animal basis of 10.5:1. With feed costs at approximately $200 per ton, the value of gain would need to be greater than $1.05 per pound to be economical. Generally, feeding supplemental energy is not done to solely increase individual animal gain but to also increase stocking rate. In that same Oklahoma State study, providing the additional feed allowed a 33 percent increase in stocking rate, which brings the supplement conversion ratio on a per acre basis to 5:1. With $200 per ton feed, the value of additional gain would need to be greater than 50 cents per pound to be economical. This number is much closer to being feasible in today’s market if the producer owns both the wheat and cattle. Remember, to capture this more favorable conversion, the stocking rate must be increased.

In summary, the use of supplemental mineral and ionophores for stocker cattle grazing wheat pasture are proven practices that should be employed. Providing supplemental energy should be evaluated carefully in each situation to ensure that value will be gained from the practice.
Review of grazing practices could benefit wildlife
by Russell Stevens / rlstevens@noble.org

In his 1933 book Game Management, Aldo Leopold stated “game can be restored by the creative use of the same tools which have heretofore destroyed it – ax, plow, cow, fire and gun.” People have recognized for many years that grazing management is not always beneficial to wildlife. Statements such as “if pastures are in good shape for cattle, then they’re good for wildlife,” are incorrectly used to justify management decisions favoring cattle. Wildlife are often at the losing end of this battle even when landowners try to manage simultaneously for cattle and wildlife, primarily because the two have different needs.

Make no mistake, grazing is a critical component of wildlife habitat management in the Southern Great Plains. The disturbance it provides can create or help maintain plant diversity and structure, necessary habitat components for most species of wildlife. If wildlife is deemed an important component of an operation, the key is to apply grazing with wildlife habitat needs in mind.

Grazing management for cattle attempts to maintain high quality, high volume, somewhat uniform grass production to optimize animal performance and production. Cattle producers target grasses and attempt to eliminate bare ground and reduce forbs and brush in favor of homogenous, grass-dominated pastures. Often, areas less suitable for cattle grazing are where management for wildlife occurs. If prescribed fire is used, the objectives are usually to improve forage quality for cattle and control brush with grazing commonly deferred following the fire.

Improper cattle stocking rate is a major contributor to poor habitat quality for most species of wildlife. Overstocking cattle for prolonged periods of time negatively affects wildlife by reducing nesting cover, plant diversity, and screening cover required for feeding and security. Having too many cattle is detrimental to long-term cattle production and simply removes too many herbaceous plants and/or the specific plants critical to quality habitat for most wildlife species. As a rule-of-thumb for wildlife in the Southern Great Plains, moderate cattle stocking rates are best in areas receiving more than or equal to 30 inches of rain and light cattle stocking rates are best in areas with less than 30 inches. This allows for greater flexibility with grazing management decisions and creates an opportunity to use prescribed fire, another critical component of wildlife habitat management in the Southern Great Plains.

Some factors correlated to grazing management can also be detrimental to wildlife. Conversion of native range to introduced pastures such as bermudagrass, tall fescue and many varieties of Old World Bluestem have eliminated many acres of wildlife habitat. Overuse of herbicides for forb and brush control to increase forage volume for cattle has also eliminated many acres of habitat for wildlife. Often these practices are understandably but incorrectly justified in order to meet mortgage payments or to produce food and fiber for mankind. However, there are many acres where these practices are not justified for production purposes but are applied for aesthetics. In these situations, there is room for modification to better meet the needs of wildlife.

Management for most wildlife species should include the use of prescribed fire along with a grazing management plan that includes strategic (temporal and spatial) distribution of cattle stocked at a light to moderate rate. These practices require a little more thought and planning to implement but can greatly increase patchiness and diversify plant communities and structure required to create and maintain quality habitat for wildlife.

A “messy” landscape is beneficial to wildlife and can be created by applying grazing and prescribed fire with wildlife habitat needs in mind.
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### Events

**Prescribed Burn Workshop**
- **Time:** 8:30 a.m.-5 p.m.
- **Date:** Jan. 26, 2016
- **Location:** Noble Foundation Oswalt Road Ranch, Marietta, Oklahoma
- **Registration Fee:** $20, includes lunch

For more information or to register, please visit www.noble.org/agevents or call Maggie Scott at 580-224-6375. Preregistration is requested.