



### Winter Annual Grassy Weed Management Practices

**Josh Bushong, West Area Extension Crops Specialist**

Even in drought conditions when it's challenging to get wheat up and going, weeds will still find a way to get going as well. Usually in falls like we have right now it's hard to justify fall herbicide applications. Depending on the weeds present and if using one of the two herbicide traited systems help determine if waiting till spring is the better option.

Grassy weeds such as feral rye, Italian ryegrass, and rescuegrass are prime examples where fall applications might be warranted mainly due to how difficult it is to manage them especially in conventional wheat. Cheat, other bromes, and jointed goatgrass issues will depend on how much actually came up this fall.

The two herbicide traited systems are Clearfield, which uses the Beyond herbicide, and CoAXium, which uses the Aggressor herbicide. For both systems the herbicide applications need to be applied when both weeds and wheat are actively growing to ensure adequate weed control and crop safety. Under an ideal growing season, both systems will provide better weed control when sequential fall and spring applications are made. If the wheat continues to have drought stress and the weeds are remaining small this fall, I would defer to focusing just on a spring herbicide application.

Italian ryegrass continues to gain more northern acreage year after year. Heavy reliance on Axial XL and Bold, Group 1 type herbicide, has resulted in intensified selection of herbicide resistance within the central corridor of the wheat belt of the state. Dr. Misha Manuchehri, OSU Small Grains Extension Weeds Scientist, has confirmed Group 1 resistance in Kingfisher, Caddo, Grady, Comanche, and Cotton counties. Widespread Acetolactate Synthase (ALS), Group 2, herbicide resistance was confirmed in 2008 around the time when PowerFlex was hitting the market. Our best recommendation now relies on delayed preemergent herbicides such as Zidua, Anthem Flex, and Axiom (not to be confused with CoAXium).

True cheat is an old enemy of wheat. ALS products such as Outrider (previously named Maverick) and Olympus have been excellent products to keep cheat managed. Unfortunately, these days are numbered. ALS herbicide resistant cheat was first confirmed in Kay County in 2010. Strong suspicion of resistance is continuing to be reported throughout north central Oklahoma.

The herbicide chemical families of Sulfonyurea (SU) and Imidazolinone (Imi) both belong to the ALS herbicide group (same site of action). As such, what we've observed

is that once cheat becomes resistance to SU products the Imi products, like the herbicide Beyond, will also prove to have resistance. Meaning that if the SU herbicides are not controlling the cheat, using Beyond in a Clearfield production system will not work either.

Here are some management practices for this scenario in no particular order 1. Use the new herbicide trait system CoAXium with the group 1 herbicide Aggressor, 2. Go winter fallow (with or without a summer crop rotation), 3. Rotate to canola, 4. Graze-out or hay-out the next wheat crop. Other management practices that can reduce cheat and other winter grasses include cleaning tillage and harvest equipment to avoid spreading, planting weed-free seed wheat, delay sowing, increase seeding rate, deep tillage, narrower row spacing, using a competitive wheat variety, and burning wheat stubble.

Feral rye was plentiful in all too many wheat fields last year. The Clearfield Plus system has shown improvement with the addition of Metholated Seed Oil (MSO) adjuvants. It's not perfect by any means, but can still be a viable option to greatly reduce rye if applied correctly. Sequential applications of 4oz/a of Beyond tank-mixed with MSO and a nitrogen source applied in the fall and spring also has shown more consistence results. Applications made prior to the rye reaching the tillering stage usually results in better efficacy and the second application in early spring helps reduce any escapes and late emerged rye.

Integrated weed management is using all the tools in our toolbox. We are currently in a time when it takes every management practice to produce clean wheat. Many cultural practices, as mentioned earlier, and continuing to rotate crops and herbicide sites of action will always be the foundation. Using new tools and traits greatly helps but can't be solely relied upon for the future of your farming operation.

Contact your local OSU Extension Educator to discuss weed management options for your operation.

## **Best Management When Feeding Tubs, Liquid Feed, and Mineral**

**Dana Zook, West Area Extension Livestock Specialist**

One of the hardest things for producers to moderate is the consumption of free choice feed products. Some products top of mind are mineral, lick tubs and liquid feed. Most of these supplements contain some type of mineral package, salt, and a carrier. In the case of tubs and liquid feed, a protein/energy source are combined with molasses or some other byproduct to encourage consumption. In drought, it is common to see overconsumption of these products because of their palatability. I may be out on a limb here, but I assume that dormant pasture is somewhat unpalatable. Cows in this grazing

situation could be looking for something tastier to eat and as a result, overconsumption may occur.

A good example of this recently came from a producer feeding 20% protein all-natural tubs in a few of his pastures. All cattle within these pastures were grazing a similar standing forage and were provided 12% cubes three times a week. These tubs were being used to fill a small gap in the protein requirement through the end of fall grazing. After the cows had been on these tubs for a few weeks, this producer reported that one group of 18 cows consumed two lick tubs (400 lbs. total) in 3 days. That's a consumption rate of 8 lbs. per head daily and is four times the maximum labeled rate of 2 pounds per day.



The interesting thing is that a similar group of cows in an adjacent pasture were consuming much less than the labeled rate. Since that time, the cows have reduced consumption rate a bit continue to consume over the labeled rate. Based on consultations with producers, I hear this situation happens quite frequently. A few ideas come to mind when handling this type of situation:

- 1.) **Read the Label!** If the above producer hadn't been keeping track of consumption, think of the amount of product and the costs associated with that. The recommended consumption of this tub was 1-2 pounds daily after a two-week acclimation rate. In situations where cattle are consuming much more than the recommended rate, I always suggest providing only the amount on the label even if they run out early. Most recommended mineral consumption rates vary from 3-6 ounces. Liquid feed brands also vary from 1-3 pounds per head daily.
- 2.) **Mineral Toxicity.** Over-consumption is not only a matter of cost but also potential toxicity and health of your animals. Drought and the lack of quality feed ingredients can lead to both toxicity or deficiency of some minerals. Mineral supplementation is not the area to cut costs! If you are feeding an unfamiliar product, do your research or get in touch with someone (like OSU Extension) who can help you.
- 3.) **Product Placement.** All of these products can be placed to help improve grazing distribution. Producers who struggle to get cattle to eat mineral should place them near a water source or loafing area. The opposite is true during over-consumption. Over-consumption can be expected during the acclimation of any new feed product, but this should not continue long term.
- 4.) **Consider the Total Diet.** Water, hay, mineral, and other feeds all add their own components to the total diet. Drought realities of concentrated water sources and unconventional forages can contain high levels of minerals. Take a closer look at the diet as a whole.

Manage costs and cattle health by keeping track of consumption on your supplements. The high costs of feed products should be more reason to do some minor record-keeping. Contact your local OSU Extension Educator for help developing a targeted mineral program.

# The Cost of Cattle Nutrition

Trent Milacek, West Area Extension Ag Econ Specialist

The increase in feed costs for producers due to drought has generated interest in alternate feedstuffs to increase protein in rations. Cubes and commodity blends can accomplish this, but have you thought about using alfalfa? Some believe the high cost of alfalfa is prohibitive so let's consider the alternatives.

Utilizing our example from earlier in this article series, a 10% protein ration will satisfy the needs of any cow regardless of her status as pregnant or nursing. This gives producers a goal to shoot for. Remember that the nutrient requirements change for cattle and the efficient manager tailors the diet to match the energy and protein requirement.

Bulk cubes purchased from a local feed store in my area will cost \$435/ton for 20% range cubes. On the other hand, producers can purchase alfalfa hay for \$330/ton according to one operation I spoke with. Alfalfa has many different quality levels, but a mid-bloom cutting could contain 22% crude protein and full bloom alfalfa may test at 17% protein. These two quality levels will be the focus of our comparison.



If you recall, our 1200 lb. cow is eating 3% of her body weight and will consume 36 lbs. of hay per day if she is allowed free choice consumption. This 36 lbs. of hay from a 2.5% protein hay contains 0.9 lbs. of protein. Her requirement in early lactation, which will be her highest need for protein, is 3.6 lbs. of crude protein daily. Using 20% cubes I will need to feed 13.5 lbs. per day to meet her requirement. The 13.5 lbs. of 20% cubes will cost \$2.94/hd./day for our example cow.

Considering alfalfa hay as a supplement source has some merit. Assuming this hay contains 22% crude protein if harvested in mid bloom, it is a potent source of supplemental protein. Keeping with our previous example, our cow would need to consume enough alfalfa in place of poor-quality hay as they are both primary roughage sources. Blending these two forages together by 22 lbs. of 2.5% hay and 14 lbs. of 22% alfalfa supplies our cow with the 3.6 lbs. of protein she requires. The 14 lbs. of alfalfa will cost \$2.31/hd./day compared to the 20% cubes that cost \$2.94/hd./day.

If the alfalfa tests at 17% then our producer will need to feed 17 pounds of 2.5% hay and 19 pounds of 17% alfalfa. This 19 lbs. of alfalfa will cost \$2.81/hd./day compared to the 20% cubes that cost \$2.94/hd./day.

Eagle eyed managers will also notice that since we are feeding less 2.5% protein hay then we will reduce that cost in addition to the alfalfa supplement being cheaper than the 20% cubes. Since I have not assigned a value to the low-quality hay, I did not factor that savings in to the calculation.

It is easy to conclude that a higher protein hay source is the most affordable supplement if a producer can limit feed. I have omitted important information, however. This analysis

is only concerned with protein. Energy is another portion of the ration that needs to be balanced and producers will benefit from consulting an extension educator for assistance and access to ration balancer calculators to perfect their cost analysis for the coming winter.

## Winter Feed Management for Beef Cows

**Britt Hicks, Ph.D., Area Extension Livestock specialist**

Reducing winter feed costs for beef cows is important to cow-calf producers since Standardized Performance Analysis records have shown that feed costs account for more than 60% of beef producers' annual cow cost with over one-half of these costs attributed to winter feeding. Forage intake is dramatically influenced by forage quality as well as forage availability, and both of these factors can vary dramatically from year to year and month to month. Thus, determining forage quality is an important step in designing an economical winter-feeding strategy. Regularly analyzing all available forage (range and/or hay) is recommended. At a minimum, forages should be tested for crude protein and total digestible nutrients (TDN) which allows a producer to compare the cow's nutritional needs with the base forage and choose the appropriate supplement. This allows one to match forage resources to cow requirements and avoid nutrition gaps or wasting costly nutrients.

When comparing supplement alternatives, it is recommended that options be compared on a cost of per unit of nutrient basis. For example, if crude protein is the primary nutrient needed compare prices based on the cost per pound of protein. We will assume that one is evaluating a 20% supplement that cost \$400 per ton and a 38% supplement that cost \$542 per ton. The cost per pound of protein in the 20% supplement would be \$1.00 (\$400 per ton divided by 400 lb. of protein per ton). Whereas the cost per pound of protein in the 38% supplement would be \$0.71 (\$542 per ton divided by 760 lb. of protein per ton).



For cattle grazing low quality forage, correcting a protein deficiency is usually the first supplementation priority. Research has shown that forage intake declines rapidly as forage crude protein falls below about 7 to 8%, a relationship attributed to a deficiency of protein in the rumen. In forages containing less than this amount of crude protein, feeding a protein supplement will improve energy and protein status of cattle by improving forage digestibility and forage intake. In fact, energy supplementation will not be effective if dietary protein is deficient.

In general, if ample low-quality forage is available, it is recommended that one supplement with a supplement containing a high protein content (greater than 30% crude protein) to stimulate forage intake and digestibility. Whereas, if forage supply is limiting, feeding an intermediate protein supplement (~20 to 25% crude protein) would be recommended. Since one would basically feed double the amount of such a

supplement to provide equal amounts of supplement protein, the program would provide additional energy to meet forage deficits.

Another important factor to consider when evaluating supplement alternatives is the labor and transportation expenses associated with supplement feeding (frequency of supplementation). Numerous research studies have shown that supplementing cattle with high protein supplements (cottonseed meal) three times or once weekly usually gives similar performance compared to daily feeding. In contrast, low-protein grain-based supplements should be fed daily to reduce the disruption of ruminal function (due to starch) which results in decreased forage intake and digestibility. Research also suggests that grain-based supplements with intermediate protein levels (i.e., 20%) can be fed infrequently (3 times weekly) with little or only slight reductions in performance. Therefore, feeding supplements on alternate days or three times weekly (eliminate Sunday feeding) instead of daily is a common strategy to decrease cost of production.

In addition, the negative associative effects associated with feeding energy-based supplements should be minimized if the supplements are formulated with high-fiber (“digestible fiber”) by-product feeds (wheat middlings, corn gluten feed, distiller’s grains and soybean hulls) as compared to grains. Research has generally shown that supplementation with digestible fiber energy sources might still reduce forage intake. However, forage digestibility is generally not reduced with these type supplements due to their low starch content. In general, the data suggests that energy supplements (grain- or digestible fiber-based) with intermediate protein levels (~20%) should be fed daily if the supplementation rate is 1% of body weight or greater per feeding.

The winter supplementation program can be evaluated over the winter-feeding period by monitoring cow body condition scores (BCS). Simply put, BCS estimates the energy status (fat cover) of cows. The scoring system used is a 1-to-9-point scale where a BCS 1 cow is extremely thin while a BCS 9 cow is extremely fat and obese. A BCS 5 cow is in average flesh or body condition. A change of 1 BCS is equivalent to about 90 lb. of body weight. Research has shown that the BCS of beef cows at the time of calving has a huge impact on subsequent rebreeding performance. Mature cows should calve in a BCS of at least 5. Since 1st-calf-heifers have only reached about 85% of their mature weight after calving and require additional nutrients to support growth, it is recommended that they be fed so they are a BCS of 6 at calving.



## Extension Experience – Insights into Oklahoma Agriculture

The Northwest Area Extension Staff would like to announce the creation of our new podcast *Extension Experience*. The *Extension Experience* podcast is brought to you by Josh Bushong, Trent Milacek, and Dana Zook. Each week they provide perspective on Agriculture topics and offer insight from our experience working with Extension Educators and Producers across Oklahoma.

The *Extension Experience* podcast is available on Spotify, Google Podcasts, and Apple Podcast platforms. You can also access the episodes on spotlight, <http://spotlight.okstate.edu/experience/>.

We hope you consider listening to Extension Experience.



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