**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 forge (range and/or hay) is recommended. At a minimum, forges 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 $300 per ton and a 38% supplement that cost $380 per ton. The cost per pound of protein in the 20% supplement would be $0.75 ($300 per ton divided by 400 lb of protein per ton). Whereas the cost per pound of protein in the 38% supplement would be $0.50 ($380 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 forge 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 suggest 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.

**Taken from January Issue of Ag Insights, NW Area Specialists**