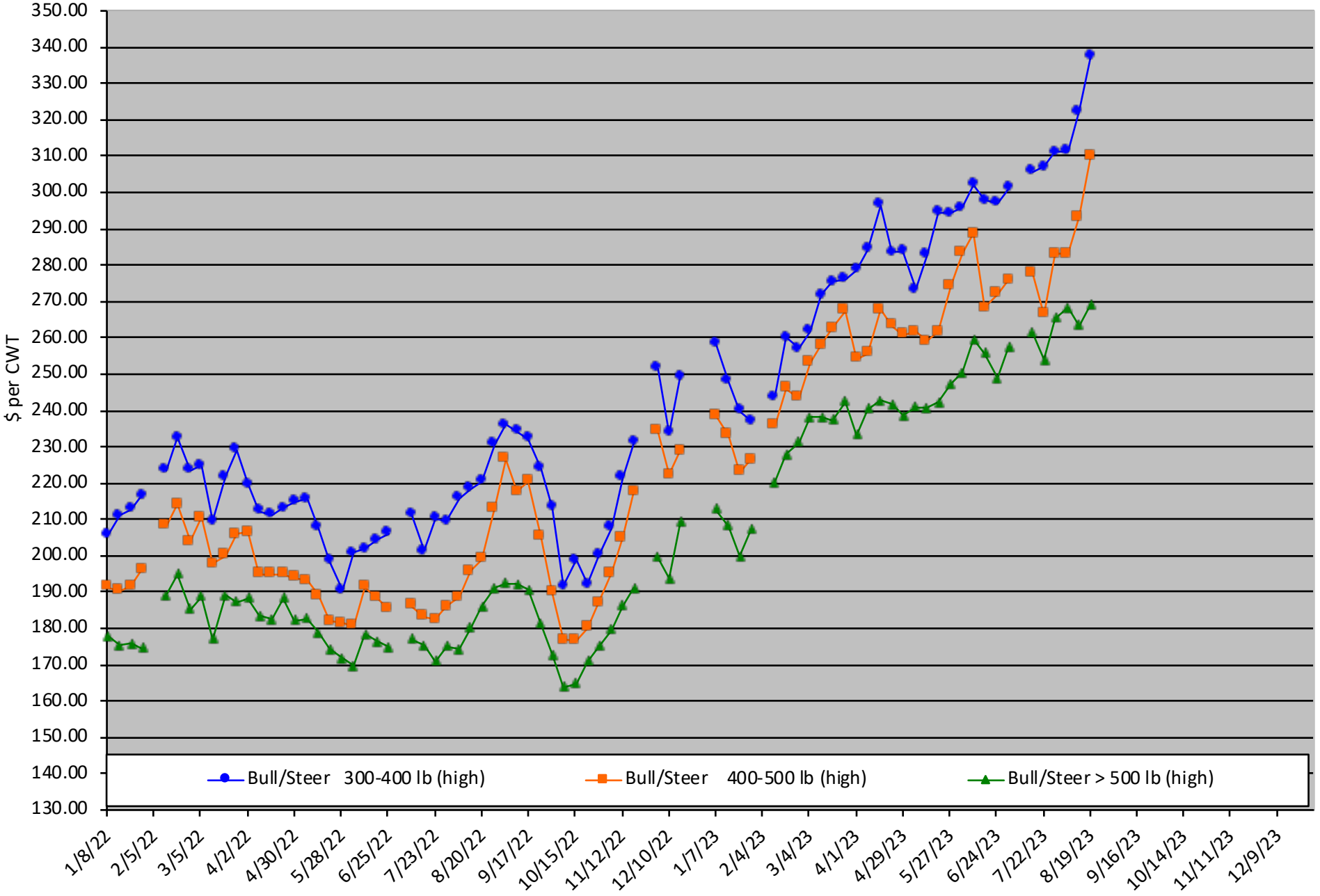
Calf Price Trends

Trend of the Highest Price Reported for Various Weight Calves, Average of 6 East & Central Texas Livestock Auctions

Chart created by Dr. Jason Banta, Extension Beef Cattle Specialist

For a weekly email copy of this chart please email amsensing@ag.tamu.edu or contact a Texas A&M AgriLife County Extension Agent



Packer Cow PriceTrends

Trend of High and Low Prices Reported for Packer Cows, Average of 6 East & Central Texas Livestock Auctions

Chart created by Dr. Jason Banta, Extension Beef Cattle Specialist

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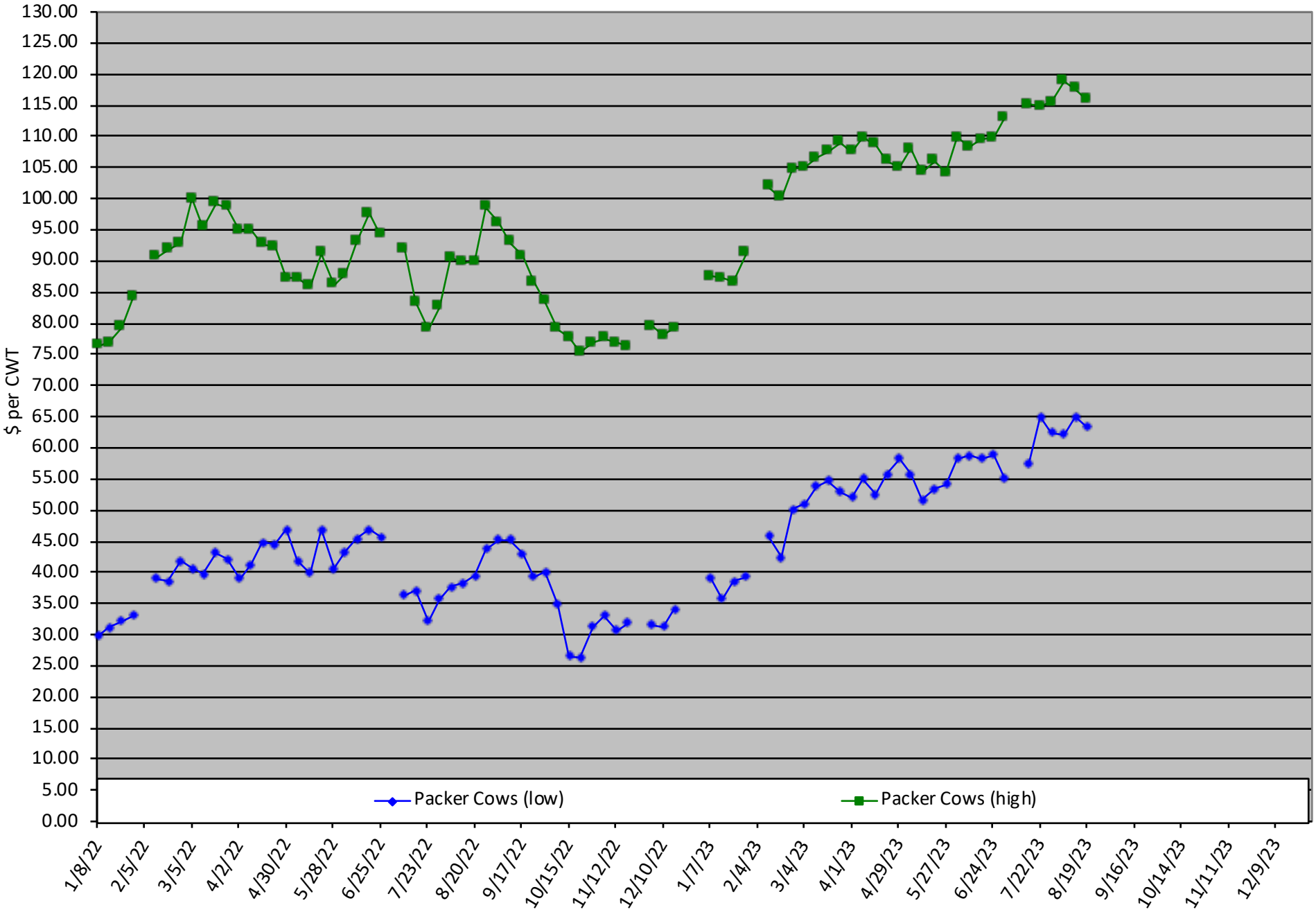

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Stretching Limited Hay Supplies: Dry Cows Fed Low Quality Hay

Jason Banta, Extension Beef Cattle Specialist
Texas A&M AgriLife Extension

Many producers are facing low hay supplies and looking for alternative hay sources and ways to stretch limited supplies. This factsheet will provide some supplementation options and considerations when feeding varying amounts of hay similar in quality to the hay described below. These examples assume cattle will be in a sacrifice pasture or drylot type situation. They would apply to producers across the state as long as cattle are not experiencing extreme cold stress. They are designed to meet or slightly exceed the nutrient requirements of most beef breeds of cattle.

Assumptions used in these examples:

Cow description:

- Physiological status: dry, not nursing a calf
- Daily milk production: NA
- Days pregnant: 270
- Age: mature
- Weight: 1,350 lb
- Current Body Condition Score (BCS): 5

Hay description (dry-matter basis):

- Crude protein (CP): 5%
- Total digestible nutrients (TDN): 45%

Feeding goals:

- Cow condition: maintain current BCS
- Hay use: reduce hay from full consumption to either 10 or 20 pounds per day

Specific comments for this scenario:

- These supplementation guidelines should be appropriate for any hay that is similar in quality to the 5% CP, 45% TDN hay used in this example and the cow described above.
- A high-calcium (≥15%), low-phosphorus (≤7.5%) cow-calf mineral should be provided free choice. These examples assume a consumption of at least 0.20 lb/day. The supplements used in these examples provide added phosphorus to the diet, because of this a lower phosphorus mineral is desired. This helps balance the calcium:phosphorus ratio and reduce the cost of the free choice mineral supplement.
- Feed-grade limestone is included in some examples to help balance the calcium:phosphorus ratio. In some cases, the feed-grade limestone can be mixed or fed along with soybean or cottonseed meal. In other situations, a small amount of a sticking agent like molasses or liquid feed can used to help stick the limestone to one or more of the concentrate feeds. With some feeds the limestone can be put directly in the feed bunk on top of the other ingredients; if this is done check to make sure the cattle eat it.

- Cows consuming the examples with 10 lb of hay may act hungry. However, the supplements provided would be expected to meet their nutrient requirements and maintain body condition.
- Cows consuming the examples with 20 lb of hay will be close to their maximum daily intake and would be expected to appear full and satisfied.

Example 1: whole corn and soybean meal

	Example 1a	Example 1b
Feed Ingredient	lb/cow/day (as-fed)	lb/cow/day (as-fed)
Hay	10	20
Whole corn	10	6
Soybean meal (≥46% crude protein)	2.4	2.2
Feed-grade limestone	0.10	0.10

*It is important to use whole corn (88% TDN) and not cracked corn (90% TDN) or steam flaked corn (93% TDN). Whole corn is more desirable from a rumen health standpoint. In many situations it will also be cheaper per pound of TDN.

Example 2: soybean hulls and corn gluten feed

	Example 2a	Example 2b
Feed Ingredient	lb/cow/day (as-fed)	lb/cow/day (as-fed)
Hay	10	20
Soybean hull pellets	7	5
Corn gluten feed pellets	7	5
Feed-grade limestone	0.10	-

Example 3: cubes

	Example 3a	Example 3b
Feed Ingredient	lb/cow/day (as-fed)	lb/cow/day (as-fed)
Hay	10	20
12% crude protein cubes	14.5	-
20% crude protein cubes	-	9.5

*Make sure the cubes have a higher calcium content than phosphorus. If not, then add feed-grade limestone to balance the calcium:phosphorus ratio.

**Some feed companies make multiple versions of cubes with the same or similar crude protein content. For example, they may have 4 different 20% crude protein cubes. These cubes will vary in TDN content and type of crude protein (natural protein or equivalent crude protein from non-protein nitrogen). The TDN content is not on the feed tag, but some companies will provide TDN content of cubes on their website. Crude fiber is listed on the feed tag and can be an indicator of TDN content. In general, TDN content decreases as crude fiber content goes up. The cubes used in these examples would be representative of cubes with 10% or less crude fiber and no non-protein nitrogen. If cubes have more than 10% cube fiber the amount of cubes fed will need to be increased. Although they may cost more per bag, buying cubes with a higher TDN content (less crude fiber) will almost always result in lower total feed costs.

Example 4: whole cottonseed

	Example 4a	Example 4b
Feed Ingredient	lb/cow/day (as-fed)	lb/cow/day (as-fed)
Hay	10	20
Whole cottonseed	6	6
Corn	4.75	-
Cottonseed meal	1.25	1.5
Feed-grade limestone	0.10	-

*No more than 6 lb of whole cottonseed should be fed in this situation to prevent the dietary fat level from getting too high. Consequently, whole corn, cottonseed meal, or both were added to meet the nutrient requirements of the cow in this example.

General comments:

- <u>These examples do not guarantee cattle performance. Actual performance may be higher or lower depending on the given situation; diets should be adjusted according to actual performance.</u>
- To help avoid metabolic and digestive problems…
    - Gradually increase the amount of rapidly fermentable feeds in the diet (e.g. corn, soybean hull pellets, cubes, etc.) over 1 - 3 weeks depending on the amount.
    - If more than 0.75% of the cow's body weight in supplement is required, consider splitting the amount in half and feeding twice a day. For a 1,350 lb cow this would be 10.1 lb (1350 x 0.0075 = 10.1).
- Protein sources
    - Crude protein can be divided into 2 fractions. The fraction that is degraded in the rumen (ruminally degradable protein = RDP) and fraction that is degraded in the abomasum and small intestine (ruminally undegradable protein = RUP).
    - Rumen microbes need a supply of RDP to grow and help digest forage and other feedstuffs. The amount of RDP that rumen microbes require varies depending on the feed ingredients in the diet.
    - <u>The protein sources in these examples were selected based on RDP and RUP needs for each example diet. Other sources of protein should not be substituted without visiting with a nutritionist.</u>
- Hay testing considerations
    - A good hay test can help prevent over or under supplementing cattle.
    - Hay should be tested by a reputable forage lab that accounts for ash content and neutral detergent fiber (NDF) digestibility when calculating TDN content. The labs below are examples of labs that account for these variables when calculating TDN content.
        - Dairy One Forage Lab in Ithaca, NY; www.dairyone.com
        - Cumberland Valley Analytical Services in Waynesboro, PA; www.foragelab.com
    - <u>Warning</u>: Many forage labs greatly over estimate TDN values of corn stalks, sorghum stubble, and other crop residues because they don't account for the ash content when calculating TDN. Many of row crop residue samples are testing

between 12 and 20% ash. This is often due to soil contamination when fields are raked during hay production.
    - Nitrates: Corn stalks, sorghum stubble, and other forages known to accumulate nitrates should be tested to determine nitrate levels and safe feeding amounts.
- Vitamin A
    - Vitamin A requirements are generally met from green growing forages. During extended periods with no green grass it is important to make sure supplements provide adequate levels of vitamin A. For vitamin A requirements and strategies to increase levels see "Vitamin A Requirements and Considerations for Beef Cattle" which can be found at beef.tamu.edu.
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- Weather stress
    - If cold stress is only expected to last for a few days, then provide free choice hay during these periods. Heat is produced during the digestion of hay that will help keep cows warmer. More heat is produced from the digestion of hay than the digestion of concentrate feeds. Do not suddenly increase the amount of rapidly fermentable feeds in the diet (e.g. corn, soybean hull pellets, cubes, etc.) because this can lead to subacute acidosis and other problems.
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Vitamin A Requirements and Considerations for Beef Cattle

Jason Banta, Extension Beef Cattle Specialist
Texas A&M AgriLife Extension

Vitamin A is a fat-soluble vitamin that is important for reproduction and several metabolic functions. Requirements for vitamin A are generally met from green growing forages. However, during extended periods with no green grass it is important to provide supplemental vitamin A to cattle.

A vitamin A deficiency can result in reduced feed intake, low conception rates, abortions, stillbirths, abnormal semen production, and blindness. The vitamin A requirement for cattle is approximately 27.2 international units (IU) per pound of body weight for dry pregnant heifers or cows and 38.1 IU per pound of body weight for lactating cows (NRC, 2016). Table 1 shows the requirements for cows ranging in weight from 1,000 to 1,600 pounds.

When supplies of vitamin A exceed requirements cattle can store excess vitamin A in the liver for later use. However, from a practical standpoint these stores are not likely to provide more than a 2 to 4 month supply.

If green grass is lacking for more than 45 – 60 days, it is important to provide supplemental vitamin A. This can be accomplished by feeding mineral supplements or feeds with high levels of vitamin A. Table 2 shows how much vitamin A can be provided from mineral supplements varying in vitamin A content. As shown in the table, if a mineral supplement contained 200,000 IU of vitamin A per pound and consumption was 0.25 pounds per day it would provide 50,000 IU of vitamin per day. This would be enough to meet the daily needs of a 1,300 pound dry or lactating cow.

Vitamin A can also be supplied through injectable products. Many of these products also contain vitamins D and E. Vitamin A concentration and dosages will vary, but at the highest labeled dose rate will result in providing either 1,000,000 or 2,000,000 IU of vitamin A per injection (Table 3). The products that supply 2,000,000 IU would provide about a 56 day supply of vitamin A for a 1,300 pound dry cow or 40 days if she is lactating.

Table 1. Daily vitamin A requirement for beef cows and heifers

Cow weight, lb	Dry pregnant cows or heifers, IU	Lactating Cows, IU
1,000	27,200	38,100
1,100	29,920	41,910
1,200	32,640	45,720
1,300	35,360	49,530
1,400	38,080	53,340
1,500	40,800	57,150
1,600	43,520	60,960

T**able 2. The effect of vitamin A concentration in the mineral on vitamin A consumption**

IU of vitamin A per lb of mineral supplement	Daily intake of mineral supplement, lb	IU of vitamin A consumed per cow each day
100,000	0.25	25,000
150,000	0.25	37,500
200,000	0.25	50,000
300,000	0.25	75,000

Table 3. The effect of vitamin A concentration in injectable products on the length of time the injection can meet the vitamin A requirements of a 1,300 pound cow

IU of vitamin A per mL	Dose rate per cow, mL*	IU of vitamin A supplied per injection	1,300 lb dry pregnant cow, days supplied per injection	1,300 lb lactating cow, days supplied per injection
100,000	10	1,000,000	28.3	20.2
200,000	10	2,000,000	56.6	40.4
500,000	4	2,000,000	56.6	40.4

*Labeled dose rates are based on the age of the animal and not the weight.

Literature Cited

NRC. 2016. Nutrient Requirements of Beef Cattle. 8th rev. ed. The National Academies Press, Washington, DC.