

## **Chapter 14: Vitamin and Mineral Nutrition of Grazing Cattle**

### Lesson Plan

**INSTRUCTOR:** Extension Educator - Agriculture

**DATE BEST TAUGHT** Appropriate year-round

#### **OBJECTIVES**

The workshop participant shall be able to:

1. Distinguish between macro and micro mineral elements.
2. List major factors that influence forage mineral concentration.
3. List minerals that are most likely to be deficient in forages that are common in their region of the state.
4. Indicate which vitamin is the greatest concern in beef cattle nutrition and why.
5. Evaluate their current or potential mineral supplementation program for cost and effectiveness
6. Describe which production and performance measures should be evaluated before mineral status is further assessed.

#### **TEACHING MATERIALS AND RESOURCES**

1. Oklahoma Beef Cattle Manual
2. PowerPoint slides
3. Example calculations
4. Discussion questions/quiz
5. Evaluation

#### **TEACHING PROCEDURE**

Most participants will be providing a free choice mineral supplement to their cattle. Most will wonder if the program that they are currently using supplies adequate or excessive amounts of minerals to their cattle. Hopefully, by addressing the teaching objectives for this chapter, the producer should be able to identify the most needed supplemental minerals in their situation. Many will discover that they are over-supplying some minerals, particularly phosphorus when the contribution of the feed supplement is considered.

Educators are encouraged to ask the participants to evaluate their individual mineral supplementation practices and use this exercise as a learning experience for the entire class.

**PRESENTATION METHOD:** Teacher led discussion with PowerPoint slides. Case studies for individual producers.

#### **EVALUATION**

The method in which the audience will demonstrate the learned information is a written quiz.

## Chapter 14: Vitamin and Mineral Nutrition of Grazing Cattle Quiz

**Instructions:** Fill in the bubble in front of your answer for each question. If you need to change an answer, please make sure that you erase completely. Please erase any stray marks on the paper.

1. Indicate which of the following are MICRO minerals:
  - (A) Calcium
  - (B) Phosphorus
  - (C) Copper
  - (D) Zinc
  - (E) Magnesium
  - (F) Sodium
  - (G) Sulfur
  - (H) Manganese
  - (I) Potassium
2. In grasses, which mineral is almost always deficient?
  - (A) Phosphorus
  - (B) Copper
  - (C) Magnesium
  - (D) Sodium
3. Which of the following two trace minerals are generally below animal requirements in most Oklahoma warm-season native grasses, fescue and bermudagrass?
  - (A) Calcium
  - (B) Copper
  - (C) Iron
  - (D) Manganese
  - (E) Zinc
  - (F) Selenium
4. Which of the following forages are frequently below animal requirements for phosphorus?
  - (A) Legumes
  - (B) Fescue
  - (C) Warm-season native grasses
  - (D) Bermudagrass
5. Carotene is the precursor to Vitamin D.
  - (A) True
  - (B) False

6. Dormant standing forage contains essentially no Vitamin A during winter.
- Ⓐ True
  - Ⓑ False
7. Which of the following time periods during the annual production cycle would be considered most critical in terms of meeting a beef cow's and her calf's mineral requirements?
- Ⓐ Mid-gestation or 2<sup>nd</sup> trimester
  - Ⓑ Early lactation or pre-breeding
  - Ⓒ Pre-weaning and weaning period
  - Ⓓ Late-gestation or 3<sup>rd</sup> trimester (pre-calving)
  - Ⓔ B, C and D
8. Mineral status and mineral supplementation is an important issue in a profitable cow/calf operation. However, other management considerations, such as body condition score at calving, cutting and genetic selection, and the herd health plan and execution should be well planned and managed before going to extremes in terms of evaluating mineral status and mineral supplementation.
- Ⓐ True
  - Ⓑ False

## Chapter 14 Quiz Key

1. C, D and H
2. D
3. B and E
4. C
5. B
6. A
7. E
8. A