Monogastric Nutrition

Samantha Graf, Extension Educator

Goal (learning objective)
Youth will:
- Learn basic vocabulary as it relates to monogastric nutrition
- Learn the different growth stages of monogastrics
- Understand why there are different nutritional requirements during different growth stages

Pre-lesson preparation
- Be able to discuss vocabulary relative to monogastric nutrition - roughage, concentrate, salt, vitamins, fats, carbohydrates, minerals, energy, proteins and water.
- Practice activity with family members.

Lesson directions and outline
Introduction
Proper nutrition for monogastrics is the foundation to a healthy animal. This lesson will lead members to understand nutritional requirements for different growth and reproductive stages as it relates to monogastric nutrition. The understanding of the nutritional requirements for the varied growth stages of monogastrics is important due to the complicated concept of creating a balanced feed ration (discussed in later lessons).

A solid understanding of the different growth stages and the subsequent nutritional needs allows members to build up to a level of knowledge required to evaluate feeding requirements for the different growth stages of their monogastric project animal.

Categorizing and a solid understanding of allows members to build up to a level of knowledge required to read a feed label and evaluate its completeness for monogastrics.
Conducting the activity (DO)

1. Discuss the order of nutrition needs for swine:
   a. Maintenance - the largest nutritional requirement for monogastrics because it keeps the animal's body functioning at normal levels. Roughly 50% of the animal's food intake is used just for maintenance. This ration is comprised mainly of ENERGY feedstuffs.
   b. Growth - the second tier in the animal's nutritional requirements. This food intake is used to grow muscle, bone, and other body parts. This ration has mainly ENERGY feedstuffs in it, but also contains a small amount of PROTEIN. This is in addition to the Maintenance ration.
   c. Reproduction nutrition is important to health of the sow or gilt and for the proper development of the piglets during gestation. The reproduction ration has higher levels of PROTIEN as well as MINERALS & VITAMINS. This is in addition to the Maintenance and Growth rations.
   d. Lactation nutritional rations are used once sow or gilt has farrowed. Lactation requires increased levels of PROTIEN and MINERALS & VITAMINS. This is in addition to the Maintenance and Reproduction rations.

2. Have youth get into groups of 3 or 4:

3. Provide each group a set of the kitchen and treat supplies.

4. Explain the activity to the members before starting:
   a. Show members the cereal representations of the growth stages:
      - Maintenance - Rice Krispies type cereal
      - Growth - Cherrios type cereal
      - Reproduction - Fruit Loops type cereal
      - Lactation - Trix type cereal
      - Vitamins & Minerals - Marshmallows and butter
   b. Sample Question: Your breeding sow has farrowed and is lactating. What stage(s) of growth is she in? How many rations should be included in her daily feed ration?

5. For the above scenario all of the rations. Members should include small amounts (not all at once) over the course of the questions, all items should be in the pan by the last question.

6. Have members line pans with tin foil.

7. Scenario 1: Your market gilt is 100 pounds. What stage of growth is she in? How many rations should be included in her daily feed ration? (Maintenance and Growth)

8. Scenario 2: Your breeding barrow is at 220 pounds (assume this is your “ideal” weight for this animal). What stage of growth is he in? How many rations should be included in his daily feed ration? (Maintenance and Reproduction)

9. Scenario 3: Your sow has farrowed and lactating. What stage of growth is she in? How many rations should be included in her daily feed ration? (All - add all remaining cereals to pan)

10. Place butter and marshmallows into medium microwave bowl and cook until marshmallows are melted, stir well. These items represent minerals and vitamins which should be added (and mixed) to cereals in pan

11. Let cool for 10 minutes and enjoy!

What did we learn? (REFLECT)

- Ask: How many growth stages are there for monogastrics and what are they called?
- Ask: What are the 5 nutrient groups that feed can be classified into?

Why is that important? (APPLY)

- Ask: Why is it important for us to know the different growth stages? (Proper nutrition is the foundation to a healthy animal)
- Ask: Why should we care about feeding different rations in the separate growth stages?
- Are there other areas where this information can be applied? (Future careers, other monogastric animal nutritional needs)
Resources


