EDTL 7100

Curriculum Design Map Project

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Sequencing Rationale Unit: Dairy Enterprise

The first unit of the sequence will be the ruminant digestive system of the dairy cow. This unit is designed to introduce the very foundation of the dairy industry. The four stomach compartment of the cow is what makes the animal and its industry unique. Everything we manage in the industry is an outcome of the digestive system and how we care for it. Students will be presented with information regarding parts of the digestive system, as well as how it impacts the cow’s life and longevity.

The second unit will be that of Nutrient Requirements for the animal because it is very important to maintaining herd health and establish long-lasting profitability of the dairy herd in general. Sequencing rationale of this unit will consist of 5 essential elements of nutrition: **Energy** and how cows use energy in various types; **Protein** and its effect on the dairy animal through proper feeding; **Minerals**, both major and minor in scale along with their impact on the cow’s body; the importance of **vitamins** in balancing rations, and **water** in its major body functions, both through regulating temperature and transporting nutrients throughout the body system.

The final unit will be that of roughages and feed use for dairy cattle. This is third because even though important, the use of proper feeds in feed rations would be useless unless we first determine the nutrient requirements for the animal first. This unit will consist of the functions of forages and identifying those feeds which consider being roughages, i.e., hay, pasture, straw, haylage, silage, cottonseed. As students study about this topic they will be able to apply correct feed uses for their own herd in the application and synthesis phase. Special attention would also be given to those factors that affect the quality of forage, such as maturity, moisture content, and storage methods.

To synthesize these units into one cohesive application, the student will construct balanced rations for dairy cattle using proper feed requirements based on the stage of lactation the cow is in. For example, those cows that are “dry”, or not milking because they are preparing to have a calf, require less protein, more calcium, and specific vitamins in comparison to a cow who is lactating heavily early in her lactation.