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TECHNICAL INFORMATION FOR TODAY'S FEED PROFESSIONAL

Nutritional Management of Whole Milk Feeding Programs
Part II. Extending Whole Milk Volume

Introduction

The commercial availability of on-farm pasteurizers has allowed producers to manage the numerous risks associated with feeding non-saleable milk (i.e., waste milk) to pre-weaned calves. Pasteurized waste milk can be a high-quality feed for pre-weaned calves provided that proper pasteurization procedures are followed, some of which include regular monitoring of pasteurizer performance (reduction of bacteria count), maintenance of strict pasteurizer sanitation practices, and proper pre- and post-pasteurization milk storage practices to control bacterial growth prior to feeding. Additional challenges with implementing a pasteurized waste milk feeding program involve managing the inherent daily variation in nutrient composition and waste milk supply short-falls. It is important to realize that pasteurization does not address the fact that waste milk likely contains multiple antibiotic residues.

Waste Milk Composition and Supply

The nutrient composition of waste milk can vary considerably over time due to the population of cows contributing to the waste milk supply; fresh cows (transition milk), cows with mastitis, and (or) cows being treated for illness may produce milk with markedly different composition compared with saleable milk. An additional source of variation may be milking parlor procedures for the hospital cows, which can result in the addition of water to the waste milk thereby diluting the nutrient concentration.

Protein, fat, and lactose intake by calves can differ a great deal due to the variation in waste milk composition. For example, Jorgenson et al. (2005) sampled pasteurized waste milk from 31 commercial dairy and calf rearing operations, and found that fat (22.3 to 37.6% of dry matter), protein (23.1 to 40.8%), and lactose (30.2 to 38.4%) concentrations varied considerably. Variation in fat intake may affect calf starter intake, whereas variation in total nutrient intake may affect the incidence of digestive upsets in young

calves. Providing a consistent ration to young calves is ideal. Total solids can be measured quickly with a refractometer and appropriate adjustments can be made to maintain total solids intake. However, predicting, monitoring, and adjusting for the daily variations in fat, protein, and lactose content within the total solids component of waste milk is often impractical on-farm.

The total supply of waste milk is influenced by factors such as herd health status (i.e., incidence of mastitis, metritis, etc.) and the number of cows calving. A field study conducted on a North Carolina dairy demonstrated that the waste milk supply fluctuated markedly; a fluctuation of 300 lbs/day in a 2 week span of time was common (James and Scott, 2006).

The amount of waste milk required varies among farms due to milk feeding rate and weaning age, whereas variation within farm is influenced by the number of calves on milk at a given time (Jones et al., 2008). While recognizing that a major goal of a dairy should be to decrease the supply of waste milk, it is essential to have an appropriate plan in place to deal with waste milk supply shortfalls in order to maintain as much consistency as possible for your calf nutrition program.

Options for Extending Waste Milk Supply

There are a number of options available for managing waste milk supply shortfalls, such as:

1) ***Extend waste milk supply with saleable whole milk -*** Extending waste milk supply with saleable whole milk is usually not an economically-sound decision, because this milk will generate revenue if sold and milk replacer solids are almost always less expensive than saleable milk solids.