An Educational Video:
“Cal Poly Dairy Calf Management Procedures”

A Senior Project

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Abstract

In particular, dairy production in California is ranked one of the top five states in the United States that produces approximately 40 billion pounds of milk per year. California’s dairy industry is not only the largest milk producer in the nation, but it is also the most financially prominent in the agricultural industry. This industry lead is merely because of its careful management practices. The way calves are raised depend on the resources used, the natural environment present, and the operation of the dairy farm. Essentially, there are numerous ways to care for a cow and calf. However, the aim of raising calves is to ensure productive cows are raised. Calves are the future of the heard. With good management techniques, a newborn heifer calf will eventually develop into a high milk-producing cow. In the dairy industry which comes first, the cow or the calf? In essence, both cow and calf depend on each other equally, as well as the help from individuals on the farm. This means it is extremely important for those individuals who are involved in dairy calf management to understand and feel comfortable when performing the necessary procedures required for a happy and healthy herd and a video lesson can aid in improving calf care.

Introduction

Successfully raising dairy calves is not only time consuming, it also contributes to the future of the herd. There are several factors contributing to dairy calf management immediately after birth and onward, important to properly care for a cow and calf. Knowing what issues to address in what order becomes critical. Students often lack confidence in completing the tasks required, including the type of colostrum that is fed, medications needed, and overall proper nutrition. These factors make for a healthy survival rate in dairy calves (Penn, 2016).

Currently, the Animal Science Department at Cal Poly, San Luis Obispo, offers a Dairy Calf Enterprise. This enterprise allows students to get hands-on experience with the newborn calves and requires immediate attention to procedures instantly after a calf is born. The purpose of this project is to produce an instructional video regarding Dairy Calf Management.

Review of Literature

The importance of agriculture is no mystery. Humans need food for energy, health, and physical well-being. Agriculture offers this by providing the food humans consume. “Larger dairy herds first emerged close to California’s most populated areas to ensure that milk could be supplied to the rapidly growing urban populations” (GUIDE, 2005).

California’s success is not only due to the environmental factors present, but also to the outstanding practices of dairy management. Stated by Pennsylvania State University relating to Dairy Cattle Nutrition, “every heifer calf born on a dairy farm represents an opportunity to maintain or increase herd size, to improve the herd genetically, or to improve economic returns to the farm” (Penn, 2016). At the University of Massachusetts Amherst College, there is a dairy calf management class where “small groups (2-4) of participating students work in shifts and are expected to feed and care for dairy calves seven days per week under the direct supervision of the instructor. Students are also expected to meet weekly as a group to weigh, clean, and perform other management procedures that may be necessary” (UMass, 2016).
Dairy calf management is crucial to the health and future of the herd, and calf mortality rates can be decreased with proper procedures following birth. “Neonatal calves rely on passive immune function from the ingestion of colostrum to maintain health, because the calf’s own immune system is not fully functional until the age of 6 to 8 weeks.” According to a 1992 analysis of heifer-calf IgC by the National Animal Health Monitoring Systems, “approximately 40% of U.S. dairy heifer calves are colostrum deprived” (Management Practices). Colostrum management plays a major role in keeping mortality down on the farm. Calves underserved with colostrum run an increased risk of disease and death. There are “5 golden rules to colostrum feeding which include: Quick, Quantity, Quality, Frequency, and Cleanliness” (DeLaval, 2001). “Newborn calves must be taken care of immediately after birth: make sure that the calf is dried to avoid heat loss, ensure protection from cold climate by providing adequate amounts of dry bedding, dip the navel with an approved iodine solution, and weigh the calf” (DeLaval, 2001).

**Methodology**

The video process began with meeting Rich Silacci and included input from the Dairy Science Department and student peers in the Dairy Calf Management Enterprise. Renting a video camera at the Cal Poly Technology Center was necessary to film live footage and moving shots of newborn calves. Filming the actual process was vital. Once born, the calf remained with its mother until all camera equipment and settings were adjusted and set up. After 30 minutes, the calf was moved to a separate pen, and mother was moved into the hospital pen to be taken care of and milked. Filming took place as the calf underwent vaccinating, navel dipping and ear tagging. The video also shows how to make sure the calf has a warm bed of straw and instructs to put a frozen bag of colostrum in the pasteurizer (UMass, 2016).

Video compilation was the last step of methodology. All footage was downloaded onto a USB and uploaded to a reliable desktop. Disregarded video segments without purpose and place significant footage out in the correct order of calf care steps. Lighting, voice recording and fluidity of the selected videos were important factors to consider for quality video completion (Fauer, 2001). All video footage was imported to iMovie and edited until a desired video was obtained. The completed tutorial and instructional video was exported to .mov compatible file type and shared with the enterprise advisor so future Dairy Calf Management enterprise classes can learn from it.

**Results and Discussion**

The outcome of this educational video proved successful in meeting the project objectives. Research was conducted to understand the crucial steps for dairy calf management. Videos were compiled to demonstrate management practices. Doing so led to the ultimate objective of providing an educational video for students to watch and learn crucial dairy calf management practices at the Cal Poly Dairy. The program now has a downloadable tutorial video that gives students the opportunity to go back and view it if they are unclear on certain procedures and will be provided to students enrolled in the course.

Suggestions for future video projects of this type include enhancing video quality by using advanced video equipment such as a stabilizer, tripod and microphone. Additional modifications
include using Final Cut Pro for a more detailed video editing system instead of iMovie. Furthermore, adding more video footage of multiple calves being born could solidify essential handling procedures as well as taking into consideration the procedures of managing a bull calf. Lastly, improving the video quality by a higher resolution camera and a better video editing system would be imperative.

The Dairy Calf Management video will be made available online but not publically. The professor of the Dairy Calf Enterprise will be in possession of the video in order to aid students to visually understand how the process of calf management should be executed properly. This video is meant for instructional purposes at Cal Poly, as it’s specific to the university dairy. It is not recommended to publish online open to public viewing.
Sources


