

Confidence Interval (CI): 0.8-1) and using a cut point of 631 RLU correctly classified 84% of samples with a sensitivity of 88% and a specificity of 77%. The AUC comparing the MS swab to total coliform count (cut point >100,000 cfu/ml) was 0.85 (95% CI: 0.7-1) and using a cut point of 44 RLU correctly classified 89% of samples with a sensitivity of 83% and a specificity of 90%. Visual hygiene assessment, PC and SS swabs were not reliable indicators for feeding equipment cleanliness.

Significance

A significant number of the colostrum feeding equipment evaluated had bacterial contamination >100,000 cfu/ml TBC and >10,000 cfu/ml TCC. The AS and MS performed well when evaluating wash fluid from the equipment and provide a calf-side alternative to traditional laboratory methods to evaluate cleanliness of colostrum feeding equipment.

Risk factors associated with early mortality identified on arrival to a milk-fed veal facility

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Introduction

The veal industry continues to have significant calf losses during the growing period representing a serious challenge to animal welfare and economic sustainability. As the majority of the mortality occurs in the first 21 days following arrival to veal farms, on arrival health status may be an important predictor of calf mortality. The objectives of this prospective case-control study were to describe the health status of male calves arriving at a veal farm and determine the risk factors associated with mortality in the first 21 days following arrival.

Materials and Methods

Using a standardized health scoring system (Calf Health Scorer, University of Wisconsin-Madison, Madison, WI), calves were evaluated immediately upon arrival to a commercial veal facility in Ontario. Data on weight at arrival and the supplier of the calf were also recorded. The calves were followed until death or the end of the first 21-day period after arrival. Cases were defined as calves that died within the first 21 days following arrival. Controls were randomly selected from those who survived more than 21 days and arrived the same day and housed in the same barn as cases. The variables navel score, respiratory score, fecal score, attitude score, rectal temperature, weight on arrival, and source of calves were offered to a conditional logistic regression model.

Results

A total of 5,010 calves were evaluated from November 2015 to September 2016. The mortality risk in the first 21

days was 2.8% leaving a total of 135 cases and 270 controls. There were 4 variables that were significant in the final model. A slightly enlarged navel with slight pain or moisture was found in 20% and had an increased odds of early mortality (OR: 1.9; P=0.04). A significantly enlarged navel with heat, pain and/or malodorous discharge was found in 6% of calves and also increased the odds of early mortality (OR: 3.4; P<0.01). A total of 2.2% of calves were severely depressed on arrival, which significantly increased the odds of mortality (OR: 14; P=0.02). The majority of calves were sourced from drovers, whom pick up calves from multiple dairy farms and brought the calves directly to the veal farm. Drover derived calves had a lower odds of mortality (OR: 0.43; P<0.01) when compared to calves dropped off directly by local dairy producers. The average weight on arrival was 102 lb and heavier calves were less likely to perish (P<0.01). Diarrhea, fever and pneumonia were found in 13%, 24% and 7% of calves, respectively, however these variables were not associated with mortality.

Significance

A significant number of calves are entering into the veal facility with identifiable health abnormalities representing a significant welfare concern. The results also demonstrate that calves at risk for early mortality can be identified upon arrival. This represents a potential opportunity to selectively intervene on these calves to reduce mortality levels. However, prevention of these conditions prior to arrival needs to be further explored and encouraged.