

A survey of calf rearing practices on California dairies

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Introduction

The goal of this project was to document calf rearing and management practices prevalent on California dairies and calf ranches as part of a larger effort to develop a risk assessment tool to reduce the incidence of Bovine Respiratory Disease (BRD). Bovine respiratory disease is a major source of economic loss in infected calves due to reduced growth and productivity. Approximately 22% of all pre-weaning dairy heifer deaths are caused by BRD.

Materials and Methods

A survey instrument was designed to collect information about calf rearing practices on California dairies. Questions addressed calving and newborn calf management, colostrum management, pre-weaning calf management, and disease monitoring and prevention. Several methods were used to recruit responses from California dairy producers. Paper copies were mailed to 1,523 California Grade A milk producing dairies with the option to respond by mail or online. Responses were also recruited in-person at the 2013 World Ag Expo in Tulare, CA and by Cooperative Extension personnel. Responses were collected between February 2013 and January 2014. Both statewide and regional data were analyzed. Four geographic regions were identified: Northern California ("NC", Sacramento County and remaining northern counties), North Central Valley ("NV", San Joaquin to Madera Counties), South Central Valley ("SV", Fresno to Kern Counties) and Southern California ("SC", counties south of Kern).

Results

Two hundred thirty-four respondents (15%) completed the survey. The average respondent herd size was 1,420 milking cows (95% CI, 1230 to 1611), which was larger than the 2013 California average herd size of 1,164 cows/herd and may indicate a greater response rate from larger herds. The response rate was geographically consistent with the distribution of dairies in California with 40 responses from the NC region (16%), 96 from the NV region (18%), 78 from the SV region (14%), and 8 from the SC region (7%).

Of the respondents in NC, 70% left calves with their dams for greater than 1 hour after birth, compared to 44%, 27% and 50% in NV, SV and SC, respectively. Of respondent dairies from NC and SC, the individual dam was the most common source of colostrum fed to heifer calves in 53% and 50% of herds, respectively. In contrast, pooled colostrum was the most common source of colostrum fed to heifer calves on 58% and 63% of NV and SV respondent dairies, respectively. Statewide, 12% of respondents reported that colostrum was pasteurized and 32% measured IgG content in colostrum before feeding. In NC, 98% of respondent dairies raised pre-weaned calves on site. In contrast, approximately half of the respondent dairies in the remaining regions raised pre-weaned calves onsite. Statewide, waste or hospital milk was the most frequently reported source of milk fed to pre-weaned calves (72%).

A scoring system or an on-farm protocol was used to diagnose BRD on 21% of respondent dairies, however, based on our experience, we suspect these are primarily protocols. Cough (82%), depression (79%), ear droop (63%), nasal discharge (71%) and tachypnea (77%) were the most common signs used to diagnose BRD on-farm. Auscultation (22%), fever (25%), head tilt (34%), and eye discharge (27%) were less commonly used. Eighty-three percent of respondents reported treating fewer than 5% of pre-weaned calves for BRD. Intranasal respiratory vaccines were administered within 2 weeks of birth according to 50% of the respondents. A higher proportion of respondents reported rarely or never using killed respiratory vaccine compared to modified live vaccines (47% and 13%, respectively).

Significance

The current survey is the first to report on management practices related to BRD on California dairies and will be combined with future research to develop and validate a risk assessment tool for BRD. The tool will allow producers to identify management practices that have been associated with BRD and, as a result, lead to a reduction in losses caused by clinical and subclinical respiratory disease in calves.