Trouble-Shooting Problems of Low Colostrum Production
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Background:
Colostrum production begins several weeks before calving and ends abruptly at calving when labor starts. Colostrum production, which includes the pre-partum transfer of immunoglobulins from the cow’s circulation into the mammary gland, is a discrete and finite process under hormonal control and responding to changes in circulating estrogen, corticosteroids, growth hormone, prolactin and progesterone. Of note is the periparturient rise in glucocorticoids, which may play an important role in terminating colostrogenesis.

Colostrum production factors that cannot be controlled:
- Breed
- Parity
- Season of calving

Colostrum production factors that can be controlled:
- Nutrition
- Health
- Vaccination
- Stress
- Dry period length

Nutrition for colostrum producing cows
- Energy (Mcal)
  - High straw, low energy diets should be carefully scrutinized to assure that energy requirements are met at the DM intakes of the close up cows. Typical minimum energy requirements are 14 to 17 Mcal NEL/cow/day.
- Protein
  - Make sure that the metabolizable protein (MP) requirement of approximately 1200 gm per cow per day is being met by all cows that are in the colostrum production phase of the dry period. MP is converted to glucose that is needed for colostrum production.
- Calcium, phosphorus
- DCAD
- Feed quality – molds, spoilage
- Bunk space and issues affecting access to feed
- Consistency of delivery
- Measurable weigh backs/no empty feed bunk
Health problems in colostrum producing cows

- Mastitis
- Fever
- Diarrhea
- Other

Vaccination – an adequate vaccination program is necessary for the health of the colostrum-producing cow, the immune quality of the colostrum that is made and the health of the calf that consumes the colostrum. Vaccination protocols are best when completed prior to colostrum production. Frequent vaccinations during the dry period, and especially during the close-up dry period using vaccines containing gram negative bacterial components could have a negative effect on colostrum production.

- Vaccination timing and frequency during the dry period
- Vaccines with more than 2 gram-negative bacterial components
- Avoid vaccinating cows in the last 3 weeks of gestation

Stress – look for evidence of stress, for example the herd’s average previous days carrying calf (PDCC) has decreased by more than 4 days or more than 50% of the cows are at less than 278 DCC.

- Multiple housing changes, new cow introductions or routine processing
- Pen moves/Group changes
- Noisy environments/multiple disturbances in daily routines
- Stressful cow handling

Dry period length

- If the dry period is less than 30 days, colostrum production may be reduced.