

INCREASING RESISTANCE TO PATHOGENS

An On-Farm Checklist

Has your farm recently evaluated measures to increase resistance to pathogens? Use this checklist to be certain you have not overlooked areas that could be improved.

1. Selecting procedures for excellent colostrum management

- Collecting clean colostrum soon after calving
- Feeding clean colostrum within half an hour of collection
- For colostrum to be stored, chilling below 16°C within half an hour after collection
- Feeding enough high quality colostrum soon after calving
- Goal: High enough passive immunity from the dam's colostrum to reduce infection rate.
- For more information on testing for success of passive transfer of immunity go to www.calffacts.com, select "Metric" version and scroll down to "Testing for Transfer of Passive Immunity."

2. Selecting an good ration for preweaned calves

- Monitoring calves' nutritional requirements for maintenance and growth:
 - * Maintenance needs increase as size increases
 - * Maintenance needs increase especially below 16°C
 - * Growth needs depend on our goals
- Planning how to feed enough energy and protein to meet calves' needs for both maintenance and growth
- For an example on ration requirements to meet maintenance and growth click [HERE](#).
- Goal: As her passively acquired immunity declines, we want the calf's own immune system to provide for immune competence.

Immune system development when calves gain less than 0.45kg/day puts preweaned calves at high health risk.

3. Selecting weaning methods that maintain high resistance to disease

- Monitoring indicators of rumen development (duration and level of concentrate intake)
- If feeding forage other than straw, limiting initial forage intake before feeding ad-lib forages
- Monitoring stress events to avoid stacking of stresses (for example, changes in feed and housing, plus dehorning, and vaccinating).
- Goal: Rumen competent heifers with good papillae growth and enough fibre digesting microbes.
- Goal: Heifers that are not immuno-suppressed due to excessive stress for too long a time.

4. Selecting a farm-specific vaccination program based on the risk of pathogen exposure (selections made with the advice of the herd veterinary surgeon)

- Assessing nearly universal exposure risks to bovine viruses
- Assessing farm-specific exposure risks (for example, salmonella, clostridia)
- Selecting the vaccines that have the highest chance of creating effective resistance at a reasonable expense

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- Selecting the proper protocol for administering the vaccines:
 - *Proper mixing and handling of vaccines
 - *Schedule for initial injection and boosters
 - *Timing when immune response will be strong
 - *Minimizing and treating anaphylactic shock
- Goal: Safe exposure to selected pathogens via vaccination rather than natural exposure. That will mean low morbidity and high resistance.
- Goal: A vaccination schedule and routine that results in every heifer receiving the proper vaccines at the optimum time to maximize disease resistance