

INCREASING RESISTANCE TO PATHOGENS

1. Feeding an adequate ration

- Monitoring calves' nutritional requirements for maintenance and growth
 - * Maintenance needs increase as size increases
 - * Maintenance needs increase as environmental conditions go below and above 65 degrees
 - * Growth needs depend on our goals
- Planning how to feed enough energy and protein to meet calves' needs for both maintenance and growth
- Goal: Rapid enough development of the immune system to depress the sickness rate in young calves

2. Selecting weaning methods that maintain high resistance to disease

- Monitoring indicators of rumen development (duration of grain intake, level of grain intake)
- Monitoring initial limited forage intake prior to feeding free-choice forages
- Goal: Rumen competent heifers with good papillae growth and adequate numbers of fiber digesting microbes

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

- Assessing nearly universal exposure risks
- Assessing farm-specific exposure risks

Increasing Resistance to Pathogens

- Selecting the vaccines that have the highest chance of creating effective resistance at a reasonable expense
- Selecting the proper protocol for administering the vaccines
 - *Proper mixing and handling of vaccines
 - *Schedule for initial and booster injections
 - *Timing when immune response will be strong
 - *Minimizing and treating anaphylactic shock
- Goal: Safe exposure to selected pathogens via vaccination rather than natural exposure resulting in 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

See also the resource, "Managing Calfhood Diseases: HAACP Application," at www.atticacows.com in the Calf Facts section.