

A Preventive Herd Health Program:

Checklist for Beef Producers



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Note: Each farm and ranch is urged to establish a specific preventive herd health program (PHHP) for their herds in consultation with a veterinarian.

Consulting with a veterinarian can give realistic expectations and recommendations for disease control and vaccine usage. Each cow-calf operation is different and therefore has unique considerations to achieve herd health.

Factors unique to an operation include nutritional resources, genetics, management style, facilities, disease history, length of ownership, neighboring herds, environmental conditions and marketing strategies.

A. Breeding considerations

Females should be in moderate body condition. Bulls must be sound and should have a breeding soundness exam and match the goals of the breeding program.

- Determine a defined breeding season length for females to create a consistent calf crop and match marketing opportunities.
 - The length of the breeding season is determined by each operation's objectives and culling criteria.
 - The length of the calving season can be established by a pregnancy exam.
- A high percentage of the females should be pregnant by the end of the first cycle.
- Heifer age and weight for the onset of puberty are dependent on genetic selection and available nutrients, and they will vary among breeds.
- Consider breeding heifers before the cows to provide for additional postpartum recovery time and more attention to potential calving difficulties.
- Review expected progeny differences (EPDs) for the selection of bulls to match farm and ranch objectives and resources.
- Correlate the age of bulls and breeding area with the number of cows to be serviced.
- Evaluate bulls for physical attributes, and have breeding soundness examinations performed 30 to 60 days prior to the breeding season to allow time for selection of replacement bulls if needed. See NDSU Extension publication AS1755 "[Bull Breeding Soundness Examinations.](#)"

- Estrous synchronization with heat detection and artificial insemination (AI), or timed AI, may be implemented. See NDSU Extension publication S1712, “Estrus Synchronization for Natural-service breeding in Beef Cattle.”
- Ensure breeding herd has daily access to minerals and vitamins.

B. Immune system management

Remember: Making sure animals are healthy and unstressed at the time of immunization is imperative.

■ Neonatal period: This is the most critical period in the life of the animal.

- Ingestion of colostrum within the first six hours after birth is necessary for maximum absorption. Colostrum at birth provides immunity developed by the dam that is critical to the lifelong immune status of the animal. Insufficient ingestion may lead to failure of passive transfer (FPT), which results in greater risk of disease, death or reduced productivity.
- If maternal colostrum is not consumed or available, colostrum replacement products should be administered to calves during that six-hour period.
- Lactogenic (colostral) immunity to the calf can be improved via timely vaccination of the dam, but this colostral antibody protection will decrease as the calf ages.
- Dehorning and castration may be performed at this time.
- Tag or tattoo in conjunction with cow’s identification for records and pairing.

■ Branding time: This is a less stressful time in the life of the calf that provides an opportunity for the administration of primary (initial) vaccinations. (six weeks of age or around this time)

- Castrate and dehorn if not done at birth. Breeding to polled animals should be considered.
- Implant steer calves if they’re not in a natural or organic program. Implants should not be used in replacement females.
- Administer clostridial vaccine given as bacterin/toxoid 7- or 8-way vaccine.

- Intranasal vaccines containing IBR, BRSV and PI₃ can be used here as a priming dose. Alternatively, a 5-way viral IBR-PI₃-BVD(type 1 and 2)-BRSV vaccine recommended for suckling calves may be used (a second injection will be given at preweaning or weaning).
- *Mannheimia hemolytica* vaccine – These products may be used at this time if there is a history of “summer pneumonia” or if preweaning vaccinations are not given.
- Fly control and dewormers can be applied, but their use should be timed appropriately for best effectiveness.

■ Preweaning three to six weeks prior to weaning provides an opportunity to increase specific immunity prior to the stressors of weaning.

This period is critical in your vaccination program due to elevated stress levels at weaning, which can leave calves more susceptible to infection.

- 5-way viral IBR-PI₃-BVD(type 1 and 2)-BRSV vaccine
- Clostridial coverage given as bacterin/toxoid 7- or 8-way vaccine
- *Mannheimia hemolytica* vaccine to protect against this common bacterial agent of bovine respiratory disease.
 - Combination vaccines with 5-way viral or Clostridial species are available.

Weaning is a stressful time for calves, so limit the number of products given at this time, and practice low-stress handling and weaning.

- 5-way viral IBR-PI₃-BVD(type 1 and 2)-BRSV given as a modified live virus (second injection if given at preweaning)
- Clostridial species given as bacterin/toxoid 7- or 8-way vaccine (not necessary if given at branding and preweaning)
- Deworm
- Implant calves if not in natural or organic program; implants should not be used in replacement females
- Age and source verify

■ Replacement heifers less than 12 months old (preferably 6 to 11 months of age)

- Consult with your veterinarian regarding the necessity and timing of Brucellosis (Bang’s) vaccination.
 - Follow state and federal regulations.

■ Pregnancy examination (45-90 days post-bull exposure or at a convenient time such as weaning)

- Identify the pregnancy status (pregnant/open) and approximate fetal age of each pregnant female.
- Evaluate females for culling; age; unsoundness of udders, feet and limbs; and disposition.
- Inventory all females according to age, breed, ID and body condition score.
 - Consider identifying cows by calving management groups and cull cows to meet marketing objectives.
- Deworm with an appropriate anthelmintic product based on pasture and weather conditions. Lice control may be implemented here, but if it is administered before lice become active, the animals will require repeat treatment. Lice control has become more difficult with single treatments, so consider treatment when actual clinical signs of lice appear.
- Some vaccinations, including leptospirosis and vibrio bacterins (if an extended duration of immunity product is used for vibriosis), can be given at this time. Viral reproductive vaccines can be used here if not given prior to breeding. Make sure to consult with your veterinarian before using these products.
 - Read and follow label directions regarding safe vaccine use in pregnant animals, especially if considering use of modified live (MLV) vaccines.
 - Observe timing, dosing and withdrawal directions on all vaccines, dewormers, and lice control products.
- Calf scours: The initial dose of *E.coli* + *Clostridium perfringens* type C and D is given as a bacterin/toxoid, and Rota+Coronavirus vaccines are available if the herd has a history of a calf diarrhea problem. See NDSU Extension publication V1630, “Calf Diarrhea (aka Scours).”

Minimum of three weeks prior to calving

- Calf scours: *E.coli* + *Clostridium perfringens* type C and D given as a bacterin/toxoid vaccine, and Rota+Coronavirus if herd has history of a calf diarrhea problem
 - Some scours vaccine products require initial vaccination earlier, with booster vaccination closer to calving. Read vaccine labels closely, and follow directions on timing of administration(s).

Scours is often a result of environmental and management factors and cannot be corrected with vaccination alone.

- Calves must receive enough colostrum from scours-vaccinated cows within the first 24 hours to reduce the risk of calf scours.
- Lice control (if there is a problem in your herd)

■ Cow and replacement heifer vaccinations (30 to 60 days prior to breeding)

- Vibriosis given as a bacterin vaccine (this is the preferred time of administration)
- Leptospirosis given as a 5-way bacterin vaccine
- IBR-PI₃-BVD(type 1 and 2)-BRSV viral vaccine
 - Consult with your veterinarian on the appropriate product.
- These products are available in combination and have been shown to be effective

■ Bulls (30 days prior to breeding)

- Vibriosis given as a bacterin vaccine
- Leptospirosis given as a 5-way bacterin vaccine
- IBR- PI₃-BVD(type 1 and 2)-BRSV virus vaccine
 - Consult with your veterinarian on the appropriate product.
- These products are available in combination and have been shown to be effective.

C. Nutritional considerations

- Have a nutrient analysis performed on harvested forages. See NDSU Extension publication AS1251, [“Interpreting Composition and Determining Market Value.”](#)
- Balance the diet for protein and then energy to maintain a body score desirable for the stage of production.
- High-magnesium salt should be provided 60 days before calving to the start of the breeding in grass tetany problem areas. See NDSU Extension publication V1703, “Grass Tetany.”
- Balance the diet for vitamins, macro- and micro-minerals and to compensate for trace minerals such as copper in deficient geographical areas.
- Consider the gain required to reach a target breeding weight when formulating heifer diets.
- Ensure adequate, clean water is available at all times. Water troughs and tanks should be clean and easily accessible. Water quality of wells, streams and stock ponds should be tested regularly and any time there is cause for concern. See NDSU Extension publications AS1763 [“Livestock Water Requirements”](#) and AS1764 [“Livestock Water Quality.”](#)

D. General management

- All incoming animals should be vaccinated in coordination with the existing herd program and should be separated from the herd for a minimum of 30 days in a bio-secure (quarantine) area to help identify diseased animals not yet showing clinical disease.
- Know the history of incoming breeding stock or test for Bovine leucosis (BLV), Johne's and persistent BVDV infection.
- Work cattle in the morning hours when possible during the summer to reduce heat stress.
- Fly control and shade are strongly recommended.
- Use the neck area for IM and SubQ injections following Beef Quality Assurance guidelines.
- Use good sanitation, and remember that vaccines can be inactivated by heat (sunlight) and chemical disinfectants.
- Label syringes for use with the same vaccine each time.
- Change needles often (every 10 to 15 animals).
- For reconstituted vaccines, only prepare an amount to be used in the next hour.

References

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Veterinarians are a valuable resource to aid farms and ranches in recordkeeping and management decisions related to health, and can provide input into nutrition and genetic selection areas.

Use a consistent, annual vaccination program developed by your veterinarian for your specific operation.
More isn't always better, and vaccination does not always mean your animals are protected.

This publication was authored by Gerald Stokka, former Extension Veterinarian and Livestock Stewardship Specialist and Zac Carlson, former Extension Beef Cattle Specialist, 2014.

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