

Calf vaccination is an important part of every herd health program. An effective vaccination protocol can be developed to fit most operation and management approaches. This guide describes three calf vaccination approaches that have been successfully implemented in cow-calf operations in New Mexico. However, producers should consult with their local veterinarian to design a vaccination program that fits their particular operation.

The foundation for each vaccination approach discussed below is the administration a 7- or 8-way clostridial vaccine at 2 to 3 months of age (branding), plus a modified-live virus (MLV) vaccine given at the same time for viruses commonly associated with bovine respiratory disease (BRD) complex. The viruses included in most MLV-BRD vaccines are infectious bovine rhinotracheitis (IBR), bovine viral diarrhea (BVD), parainfluenza-3 virus (PI3), and bovine respiratory syncytial virus (BRSV). Vaccinations given at 2 to 3 months of age produce initial immunity. However, additional “booster” vaccinations should be administered at or near weaning so the immune systems of the calves become even better prepared to fend off actual disease challenges. Additional vaccinations required to help prevent pneumonia caused by Mannheimia/Pasteurella will be needed, especially during the weaning period. The difference in the three options described below is the timing of booster vaccinations at or near weaning. Producers should consult their veterinarian to determine which MLV vaccine to use at branding. Their input will be valuable in developing your vaccination and deworming protocols. Deworming calves at weaning is beneficial and should be included in a weaning program.

These are suggested guidelines to induce immunity in calves. Producers should be aware that many of the value-added calf marketing programs have more specific guidelines that must be followed for enrolled calves to be eligible to receive price premiums (for more informa-



tion see NMSU Extension Circular 637, *Preconditioning Beef Calves* [http://aces.nmsu.edu/pubs/_circulars/CR-637.pdf] and NMSU Extension Guide B-220, *Value Added Calf Programs for New Mexico Livestock Producers* [http://aces.nmsu.edu/pubs/_b/B-220.pdf]).

OPTION A

Option A describes the most effective protocol for developing immunity, but it may not be compatible with all ranch management systems. This option is for calves that will remain on the ranch at least 45 days after weaning. Research from New Mexico State University using data from over 800 calves from 48 sources showed that separating weaning and feedlot entry by 41 days or more produced greater net return in the feedlot than when calves were shipped to the feedlot less than 40 days after weaning. Weaned calves perform better throughout the feeding process, and weaned, immunized calves perform the best.

¹Extension Veterinarian, Department of Extension Animal Sciences and Natural Resources, New Mexico State University.

Vaccination Timeline—Option A

2 to 3 MONTHS OLD:

- Clostridial 7-way (or 8-way if needed)
- Parenteral MLV—IBR, BVD, PI3, BRSV **or**
- Intranasal MLV—IBR, PI3, BRSV
- +/- Mannheimia/Pasteurella (only if using intranasal MLV)

WEANING: Let calves sit overnight before processing; this gives time for their cortisol levels to drop before vaccination, enabling a better immune response.

- Booster MLV—IBR, BVD, PI3, BRSV
- Mannheimia/Pasteurella

POST-WEANING: (3–4 weeks)

- Booster MLV—IBR, BVD, PI3, BRSV
- Clostridial 7-way (+/- *Histophilus somni*)
- +/- Mannheimia/Pasteurella (a Mannheimia/Pasteurella booster may be required by some marketing venues)

OPTION B

Option B is designed for calves processed 3 to 4 weeks before weaning, then shipped the day of weaning. This option is preferable to Option C because it allows time for the calves to maximize immunity in response to the booster vaccinations they received 3 to 4 weeks before weaning. With this approach, calves are more capable of handling the stress from weaning and shipping combined with the stress and disease challenge inherent to commingling.

Vaccination Timeline—Option B

2 to 3 MONTHS OLD:

- Clostridial 7-way (or 8-way if needed)
- Parenteral MLV—IBR, BVD, PI3, BRSV **or**
- Intranasal MLV—IBR, PI3, BRSV

PRE-WEANING: (3–4 weeks before weaning)

- Booster MLV—IBR, BVD, PI3, BRSV
- Clostridial 7-way (+/- *H. somni*)
- Mannheimia/Pasteurella

OPTION C

Using Option C, calves are processed at weaning. This protocol is a good approach to calf vaccination when it is not practical to gather calves before weaning. When employing Option C, calves should not be shipped until 3 to 5 days after weaning because it is not as effective to vaccinate calves if they are weaned and shipped on the same day. If it is not manageable to hold calves for 3–5 days and you must ship the same day as weaning, give the branding vaccinations as outlined below and ship as soon as possible after stripping off of the cow. An intranasal vaccination for the viral agents may be used if shipping will be delayed, and the calves can be intranasally booster vaccinated 24 hours before shipping.

Vaccination Timeline—Option C

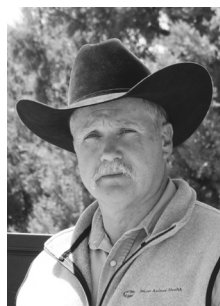
2 to 3 MONTHS OLD (Branding):

- Clostridial 7-way (or 8-way if needed)
- Intranasal MLV—IBR, PI3, BRSV
- Mannheimia/Pasteurella

WEANING: (If calves will be on ranch for several days)

- Booster MLV—IBR, BVD, PI3, BRSV (intranasal if shipping 24 hours later)
- Mannheimia/Pasteurella

Original authors: John Wenzel, Extension Veterinarian; Clay P. Mathis, Extension Livestock Specialist; and Boone Carter, Extension Associate.



John C. Wenzel is the Extension veterinarian in the Department of Extension Animal Sciences and Natural Resources at NMSU. He earned his B.S. from NMSU and his DVM from Kansas State University College of Veterinary Medicine. His work focuses on cow/calf medicine and preventive health programs for livestock producers in southwestern New Mexico.

NOTE: Consult your veterinarian for specific health program recommendations and for guidance on choosing pharmaceutical products, especially when using modified-live products. Always follow label directions and Beef Quality Assurance guidelines when processing calves.

Contents of publications may be freely reproduced for educational purposes. All other rights reserved. For permission to use publications for other purposes, contact pubs@nmsu.edu or the authors listed on the publication.

New Mexico State University is an equal opportunity/affirmative action employer and educator. NMSU and the U.S. Department of Agriculture cooperating.