

Value Added Calf (VAC) - Vaccination Programs

Produced by the TAMU Department of Animal Science Extension Beef Cattle Specialists

Most calves are healthy when they leave the ranch, but stress caused by weaning, marketing, transportation, changes in environment, and other factors lower the level of disease resistance at a time when exposure to disease challenges is increased. Identity of the ranch of origin is often lost once calves leave the ranch and move through various marketing channels. Loss of identity often prevents most commercial cow-calf producers from receiving feedback about the health and performance of their calves beyond the farm or ranch. Over the past 10 to 15 years, the beef industry has become more aware of the value of pre- and post-weaning calf health management prior to leaving the ranch of origin.

The purpose of a vaccination program is to raise the level of resistance to viruses and other pathogens before a disease challenge occurs. For optimal response, the proper vaccines must be administered and adequate time must be allowed to develop immunity in an environment where stress is minimized.

The following vaccination regimens were designed to produce protection against the major viral pathogens involved in the initial stages of the bovine respiratory disease complex. These programs are based upon results observed in the Texas A&M Ranch to Rail program. Calves managed with these regimens had more consistent, predictable, and favorable health results. These programs are designed to get the calves ready to enter the various marketing and production channels after they leave the ranch. Other problems that exist at the ranch level are unique to each operation. Consult with your local veterinarian to assess what other health assurance measures are indicated for your specific production environment.

These regimens have been widely adopted across the United States since their introduction in the mid-1990's. Several venues now use these or similar regimens in calf marketing and purchasing programs. Recent market studies document the price differentials among calves managed under these different health programs (King and Seeger, 2004a,b,c). Wide acceptance of these

programs in addition to buyers' willingness to pay more for these calves is evidence of the added value as calves move through the segments of the beef industry.

The four programs are:

- Value Added Calf-45 (VAC-45)
- Value Added Calf PreWean Plus (VAC-Prewean Plus)
- Value Added Calf-PreWean (VAC Prewean)
- Value Added Calf-PreCon (VAC PreCon)

Value Added Calf-45 (VAC-45)

This program is designed for producers with the resources to background calves after weaning for at least 45 days prior to shipment. This program has been shown to maximize the calf's preparedness to enter various marketing and production channels.

Two vaccination options are included in the VAC-45 program. One option is based upon a pre-weaning vaccination followed by revaccination at weaning. The other is based upon vaccination at weaning followed by revaccination 14-21 days later. The vaccines used depends upon whether the calves are nursing or weaned at the time of vaccination. In both options, the cattle are backgrounded at least 45 days after weaning.

PRE-WEANING OPTION:

Vaccine options for pre-weaning are listed in Table A. Administer one of these vaccines four to six weeks prior to weaning. At weaning, revaccinate with one of the Modified Live Virus (MLV) vaccines listed in Table B. Do not revaccinate with CattleMaster 4.

CattleMaster 4 is labeled for use in calves nursing pregnant cows regardless of the cow's vaccination history. The Bovi-Shield and Bovi-Shield Gold vaccines listed in Table A are now labeled for administration to nursing calves *if their dams have been vaccinated according to label directions*. The dams must have been vaccinated within the last 12 months with specified vaccines. Under the conditions specified on the labels, these products may be used in place of CattleMaster 4. *Consult your bovine veterinarian for guidance on the use of these vaccines in nursing calves.*

WEANING OPTION:

If the calves did not receive a pre-weaning vaccination, administer one of the MLV vaccines in Table B at weaning and revaccinate 14 to 21 days later.

Value Added Calf-PreWean Plus (VAC-PreWean Plus)

Some producers may not have the resources to background weaned calves for 45 days but they are able to gather their calves prior to weaning, vaccinate them, and place them back with the cows for a period of time prior to weaning. This process allows time to develop immunity in an environment that is generally less stressful with minimal exposure to pathogens. Better immunity is generally established in older calves because of less interference from maternal antibodies and a more functional immune system.

VAC-PreWean Plus is based upon administration of one of the vaccines in Table A and one of the intranasal vaccines in Table C at four to six weeks prior to weaning. The calves are shipped at weaning.

CattleMaster 4 is labeled for use in calves nursing pregnant cows regardless of the cow's vaccination history. The Bovi-Shield and Bovi-Shield Gold vaccines listed in Table A are now labeled for administration to nursing calves *if their dams have been vaccinated according to label directions*. The dams must have been vaccinated within the last 12 months with specified vaccines. Under the conditions specified on the labels, these products may be used in place of CattleMaster 4. *Consult your bovine veterinarian for guidance on the use of these vaccines in nursing calves.*

Value Added Calf-PreWean (VAC-PreWean)

Some producers do not have the resources to background calves or gather and vaccinate their calves four to six weeks prior to weaning. VAC-PreWean is a vaccination management program designed to increase the level of resistance prior to weaning so that calves have more immunity as they enter various market channels.

This program is based upon a pre-weaning vaccination at branding with the calves being shipped at weaning. Vaccinate with one of the vaccines listed in Table A when the calves are worked at two to four months of age. Also, administer one of the intranasal vaccines shown in Table C.

The Bovi-Shield and Bovi-Shield Gold vaccines listed in Table A are labeled for administration to nursing calves if their dams have been vaccinated according to label directions. Under the conditions specified on the labels, these products may be used in place of CattleMaster 4.

Consult your bovine veterinarian for guidance on the use of these vaccines in nursing calves.

Value Added Calf-PreCon (VAC-PreCon)

Producers that purchase weaned calves and background them on pasture or in a drylot are a major source of stocker/feeder cattle. VAC-PreCon is management program designed to help ensure healthy stocker/feeder cattle. VAC-PreCon is similar to the VAC-45 Weaning Option except this program pertains to purchased calves rather than calves that are weaned and backgrounded on the ranch.

This program is for cattle from various sources that will be preconditioned or backgrounded for at least 45 days. Upon arrival, administer one of the intranasal vaccines listed in Table C and one of the injectable vaccines shown in Table B. Revaccinate with the injectable vaccine 14 to 21 days later.

Table A: Injectable vaccines for pre-weaning vaccinations

| <u>Trade Name</u> | <u>Manufacturer</u> |
|-----------------------------------|---------------------|
| ¹ Bovi-Shield® 4 | Pfizer |
| ¹ Bovi-Shield® GOLD™ 5 | Pfizer |
| Cattle Master ® 4 | Pfizer |

¹ Do not use in calves nursing pregnant cows unless their dams were vaccinated in the last 12 months according to label directions for Pfizer Bovi-shield and Bovi-shield Gold vaccines.

Table B: Injectable vaccines for weaning and post-weaning vaccinations

| <u>Trade Name</u> | <u>Manufacturer</u> |
|----------------------------------|----------------------|
| ¹ Arsenal® 4.1 | Novartis |
| ² Bovi-Shield® 4 | Pfizer |
| ² Bovi-Shield®GOLD™ 5 | Pfizer |
| ¹ Express™ 5 | Boehringer Ingelheim |
| ¹ Jencine® 4 | Schering-Plough |
| ¹ Pyramid® MLV-4 | Fort Dodge |
| ¹ Reliant® 4 | Merial |
| ¹ Reliant® PLUS | Merial |
| ¹ Titanium® 5 | AgriLabs |
| ¹ Titanium® 5 | Intervet |

¹ Do not use in calves nursing pregnant cows.

² Do not use in calves nursing pregnant cows unless their dams were vaccinated in the last 12 months according to label directions for Pfizer Bovi-shield and Bovi-shield Gold vaccines.

Table C: Intranasal Vaccines¹

| Trade Name | Manufacturer |
|-------------------|---------------------|
| Nasalgen® IP | Schering-Plough |
| Quick Shield | Novartis |
| TSV-2® | Pfizer |

¹Labeled for use in calves nursing pregnant cows.

In addition to the specific recommendations for each program, producers should also:

- Provide adequate nutrition (including minerals and trace minerals) to facilitate adequate growth and enhance the immune process.
- Control parasites to facilitate adequate growth and enhance the immune process.
- Vaccinate against the Clostridial organisms (Blackleg, etc.) when the calves are two to four months of age and booster at weaning. Vaccinate calves in the VAC-PreCon option upon arrival if vaccination history is unknown.
- Include other vaccines and management practices that are unique to your operation or are of value to the purchaser of your cattle.
- Always read and follow label directions.
- Administer all injections in front of the shoulder.
- Do not administer over 10cc of product in a single site.
- When possible, use vaccines and antibiotics with label clearance for subcutaneous injection to reduce muscle tissue injection site blemishes. Use the “tenting” technique and proper needle size and length.
- If products must be given intramuscularly, use low dose products with evidence of minimal tissue irritation.
- Use proper vaccine storage and handling methods.
- Use clean needles to enter the vaccine/medicine bottle.
- Change needles frequently (after 10-20 uses).
- Inject only into clean areas. Use a disinfectant to clean needles EXCEPT when administering modified live or chemically altered modified live vaccines. Change needles more often when using modified live virus vaccines.

Cited Information

- King, Michael E., and Jon T. Seeger. 2004a. Nine-year trends at Superior Livestock Auction confirm higher prices go to calves in value-added health programs. Pfizer Animal Health Technical Bulletin SV-2004-02, Pfizer Inc.
- King, Michael E., and Jon T. Seeger. 2004b. Superior Livestock video auction study: Buyers continue to pay more for calves on value-added health programs. Pfizer Animal Health Technical Bulletin SV-2004-01, Pfizer Inc.
- King, Michael E., and Jon T. Seeger. 2004c. Value-added health calves (regardless of region of origin) received significant premiums in Superior Livestock video auctions during 2003. Pfizer Animal Health Technical Bulletin SV-2004-03, Pfizer Inc.

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