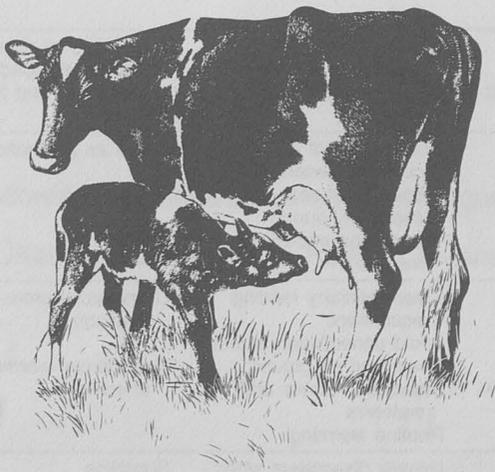
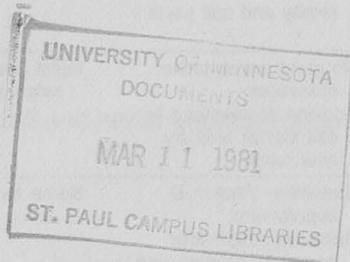


Unit 5—Calf and Young Stock Health

Purposes

- Identify the many diseases of calves and situations under which they can occur.
- Understand why colostrum and vaccination programs are needed.
- Outline some health and management programs for young stock.



Prevention rather than cure should be the goal for calf and young stock health. Antibiotics and vaccines are good tools, but their effectiveness is much greater when used with good management practices for disease prevention rather than cure. To raise healthy calves, you must minimize exposure to disease organisms and reduce stress on calves through good management, nutrition, housing, and sanitation. The old saying, *An ounce of prevention is worth a pound of cure*, couldn't be truer for the producer concerned with raising healthy calves.

A good calf health care program begins with the dry cow. Proper care and management of the dry cow (Unit 1) reduces the chances for difficult births and production of poor quality colostrum. Good quality colostrum high in antibodies needs to be fed to the calf as soon after birth as possible, since this is the only source of disease protection for the calf (Unit 2). Even with careful attention to dry cow management and feeding of colostrum, a mild calf disease can become a killer if stresses are not eliminated. Poor housing, unsanitary conditions, inadequate nutrition, and contaminated feeding equipment are stresses that can be eliminated. Review Units 3 and 4 for good nutrition and housing practices.

COMMON CALF AND HEIFER DISEASES

Table 1 provides details on common diseases including symptoms, causes, prevention, and treatment. Treatment of any of these diseases is always more successful when diagnosed and treated early rather than after the calf has developed all the symptoms and is in an acute stage of the disease. Frequent observation of calves will help in early disease diagnosis. Pay attention to these details:

- Is the calf aggressive and alert?
- Does the calf eat?
- Does the calf act slow or depressed?
- Are the ears droopy?
- What is the manure like?
- Is the calf breathing normally or coughing?

General rule: **Observe calves a minimum of twice each day.** Daily recording of a calf's rectal temperature is one good method of detecting diseases early. Normal temperature of calves is approximately 101°F. Be sure to attach a long enough string to the thermometer before inserting it in a calf's rectum, or you may lose a good thermometer.

Vitamin and mineral deficiencies can occur in calves, but such incidences are few. Colostrum, milk, and milk replacers usually contain adequate quantities of most vitamins and minerals for young calves. Injections of vitamins, iron, and other minerals are sometimes used for supportive therapy, though, in treating other diseases.

DISEASE IMMUNITY

Calves can acquire protection against diseases in two ways. The first way is from absorption of antibodies found in first-milk colostrum. This method is known as **passive immunity** and is the calf's first and only protection against diseases for the first two weeks of life. The antibodies accumulate in a cow's udder during the dry period and then are secreted as a part of the first-milk colostrum. Antibod-

Table 1. Major Calf and Young Stock Diseases

Disease	Symptoms	Causes	Prevention	Treatment
Pneumonia (viral and/or bacterial)	Rapid and difficult breathing Cough Runny nose and eyes Fever 103°-106° F.	Poor ventilation, high humidity Wet, dirty pens Drastic variations in temperature Poor nutrition Wide age range of calves grouped in one pen Overcrowding	Good ventilation pulling air away from small calves Isolate young calves in individual stalls or pens and carefully group to avoid wide range in age Keep pens or stalls clean and well bedded Vaccination program may be helpful	Isolate sick calves Antibiotic therapy for 3-5 days Supportive fluids, electrolytes may speed recovery Correct environmental conditions causing pneumonia
Diarrhea (scours) <u>Nutritional</u> <u>Viral</u> BVD Reovirus Corona IBR Adeno <u>Bacterial</u> E. coli Salmonella	Temperature Watery feces May be cold to the touch Sunken eyes Skin slowly returns to normal after being pinched up	Wet, dirty pens Poor ventilation, high humidity Overcrowding Wide age range of calves Rapid change in feed and overfeeding (nutritional diarrhea)	Feed colostrum at birth Individual stalls or pens for calves less than 2 months old Do not overfeed Do not overcrowd Vaccination of dams in 3rd trimester with specific agent to build colostrum antibodies Vaccinate calves immediately at birth (Reo-corona virus)	Antibiotics Remove from milk or milk replacer and feed electrolyte solution for 3-6 feedings until feces become firm Homemade electrolyte: 1 pkg. fruit pectin 1 tsp. salt 2 tsp. baking soda 1 can beef consumme 2 qts. warm water Good commercial formulations also are available
Navel Ill (Coliforms, Streps, etc.)	Listless, poor appetite High fever Thickened, hot navel cord Swollen joints	Colostrum not fed at birth or colostrum was low in antibodies Wet, dirty maternity facilities and calf pens Calves nursing each other's navel	Use navel clips, and dip navel in iodine at birth Sufficient colostrum to provide passive immunity to calf Clean and sanitize maternity and calf pens	Oral fluids and electrolytes Intensive antibiotic therapy
White Muscle Disease (Muscular Dystrophy)	Stiff, weak calves Paralysis Breathing difficulties Muscles appear white on autopsy	Selenium deficiency accompanied by other stresses	No good preventative measures Addition of selenium to calf starter and dry cow ration	Inject animals with selenium
Rickets	Stiffness, lameness Enlarged joints Deformed legs, primarily front	Deficiency of vitamin D, phosphorus, and/or calcium	Sunshine, Vitamin D supplement Balanced ration with adequate calcium and phosphorus	Same as prevention
Blackleg	Sudden death in older calves and heifers	Unknown	Vaccination where problem has been identified	None are very effective
BVD	Diarrhea, foul smelling High temperature (105° -106° F.) Dry, harsh cough	Stress Poor sanitation and contaminated feed and water	Vaccination where the disease is in herd or is a problem in your area	Supportive treatment with broad spectrum antibiotics and fluids
External Parasites lice	Rough coats Hair loss with lots of rubbing and itching May become anemic if infested with the sucking louse	Seasonal problem, greatest in winter	Routine use of lice control powders or liquid pour-ons, especially during early and mid-winter months	Same as prevention
Internal Parasites coccidia	Bloody diarrhea (usually older calves)	Stress	Clean, sanitary feeding equipment Avoid unnecessary stress	Commercial products available
roundworms	Rough hair coat, thin pot-bellied calves Sometimes no noticeable symptoms	Contact with contaminated feces	Keep feed off ground Clean feed bunks and waterers Routine worming	Commercial wormers are effective
Ringworm	Gray, crusty patches on skin, most often on head		Usually disappears when animals are let out in spring Sunshine	Sunshine Good nutrition Commercial treatments available
Warts	Gray, crusty bumps			Commercial preparation

ies are built up only against diseases to which a cow has been exposed. Cows in your neighbor's herd probably do not have the same antibodies as cows in your herd. Cows recently (within three months) moved into your herd may not have antibodies against diseases on your farm. Therefore, calves fed colostrum from these cows will not receive protection against diseases on your farm.

The second way calves get disease protection is from manufacturing their own antibodies. This method is known as **active immunity**; however, this system does not begin to function in calves until approximately the second week of life. Vaccination programs are designed to help calves build their own antibodies against specific diseases through active immunity.

VACCINATION PROGRAMS

Many people ask why they can't vaccinate calves against diseases right away. The reason is that the antibodies from colostrum (passive immunity) interfere with the development of antibodies from the calf's own system (active immunity). This is especially true when calves have received adequate amounts of colostrum at birth. This is not bad, though, because it allows the calf's own antibody producing system to become fully developed before the calf becomes dependent on it.

Figure 1 shows the antibody level of a calf that has received adequate amounts of colostrum. Notice that vaccinating this calf before two months of age had no effect on increasing the calf's antibody level. However, after two months, the calf's antibody level from colostrum declines greatly. Vaccinating after this time results in the calf producing enough of its own antibodies to return to previous levels.

Calves that have received inadequate amounts of colostrum will respond to vaccinations at an earlier age (figure 2). Passive immunity of these calves decreases earlier, allowing for a response to the vaccination. It must be remembered, however, that the calf's ability to produce antibodies doesn't start until the second week of life. Therefore, the amount and quality of antibodies produced in response to vaccinations at an early age are not as good as those from colostrum. Higher death rates of these calves can be expected when they are exposed to diseases. Calves vaccinated at an early age should always be given a second vaccination at the recommended age to boost their protection levels. The most effective disease protection plan consists of feeding adequate amounts of colostrum to calves at birth, then vaccinating calves at an older age when they will respond more effectively to vaccines.

continued on page 4

Figure 1.

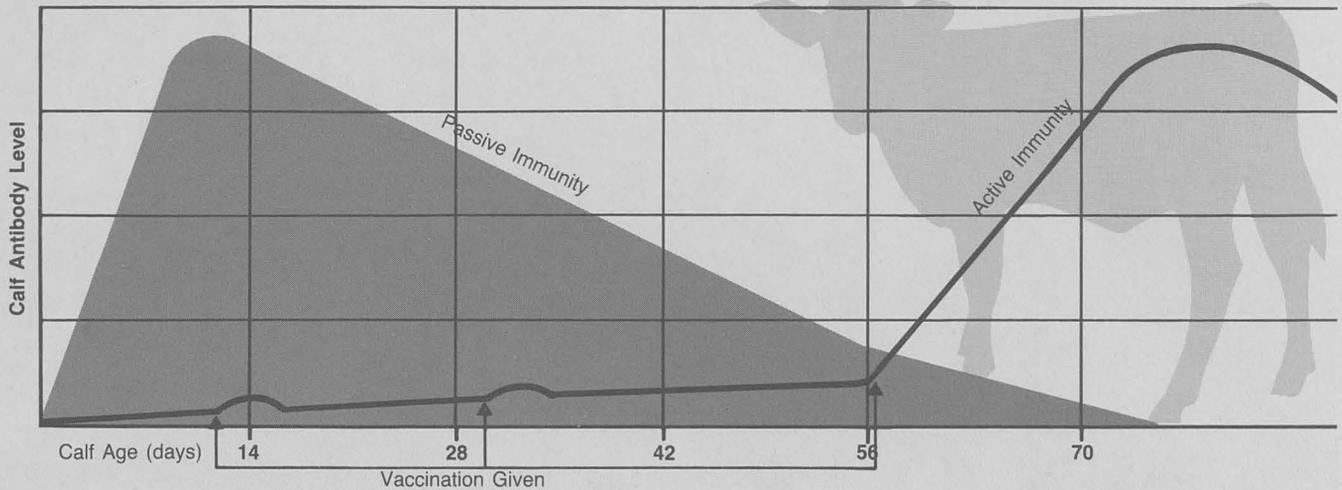
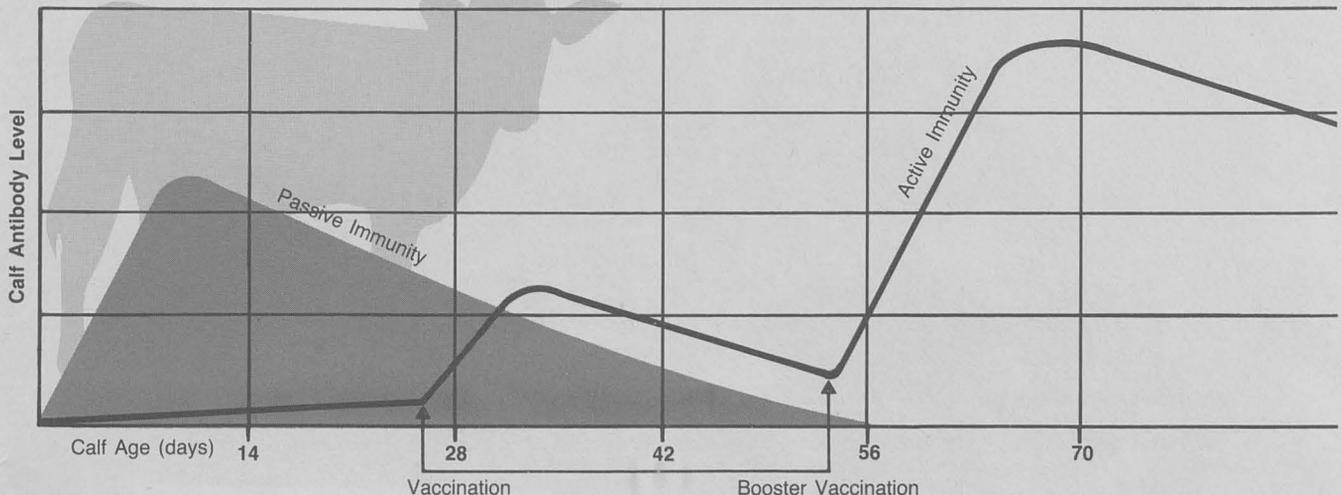


Figure 2.



Calf and Young Stock Health

Please Fill Out and Return

Name _____

Address _____ County _____

1. Describe how your calves (those less than 30 days old) looked this morning.

Calf identification

Observation

2. Did you take temperatures of any of the calves?

What were they?

Are they normal?

3. Who fed your calves yesterday?

What time were they fed yesterday?

Who fed the calves today?

What time were they fed?

Are your calves generally fed by the same person and at the same time each day?

4. a. How many of your calves have died within the past six months?

List the disease(s) you think they died from.

Calf

Disease

b. Are the diseases similar?

Are more than 1 percent of your live-born calves dying from a particular disease?

- c. Review the lesson and identify the probable causes of the disease. (e.g., 1 percent died from pneumonia, but several are coughing and have breathing difficulty. Causes: poor ventilation, wet and dirty pens, and drastic temperature changes.)

Causes:

- d. Now check the barn and see if any of these causes exist. (e.g., fan pulling air from cows across calves, water dripping from ceiling, etc.) List the problem areas you have identified.

5. List your calf and heifer vaccination and management program. How does it compare to the one in table 2?

The following material is also available on request. Please check the box if you would like to receive it.

Keeping Dairy Calves Healthy, Extension Folder 313

Table 2 illustrates a suggested calftod vaccination schedule and specifies conditions that dictate such vaccination programs. Remember that exposure to disease on each farm varies; therefore, vaccination programs may vary from farm to farm, county to county, and between states. Follow your veterinarian's advice since he is the most knowledgeable on diseases in your area. If you administer vaccines yourself, follow directions carefully as to site of vaccination and care of the vaccine.

Also included in table 2 are other calf and young stock practices that should be included in your overall program. The table is only a guide. With the help of your veterinarian, you should design a program specific to your needs.

MINIMIZING STRESSES

You should plan your program carefully so that you minimize stress to the calves. Trying to dehorn, vaccinate for brucellosis and IBR-PI₃, wean, and move a calf to a different pen all at the same time would perhaps be the most efficient use of your time but very stressful to a calf's health. You must decide which you would rather do, save time or save calves. The spacing of vaccinations and other routine herd health procedures will minimize calf stress and help assure good calf health.

Regularity is important in calf feeding. Irregular feeding times with different people feeding different amounts can cause scours in calves. Be consistent in feeding time and amounts fed to minimize stress.

Table 2. Suggested Vaccination and Management Practice Schedule for Dairy Calves and Heifers

<u>Birth or Shortly After</u>	<u>Conditions</u>
Feed colostrum	1-2 quarts first half hour
Dip and clip navel	
Administer vaccines	These will be of little value unless your veterinarian has identified the problem on your farm Where conditions warrant their use
Reo-corona (oral)	
IBR-PI ₃ (intranasal)	
Vitamin A, D, E, and possibly selenium	
<u>2-6 months</u>	
Dehorn	Earlier if paste or electric dehorner used Be sure you remove <i>only</i> the extra ones Must be done between 2-6 months
Remove extra teats	
Brucellosis vaccination	
Pneumonia vaccinations	
IBR-PI ₃	4 months of age Optional, upon occurrence of problem and advice by your veterinarian If problem in your area (4-6 months) Winter months
Pasteurella hemolytica	
Hemophilus sominus	
Blackleg	
Delouse	
<u>6-8 months</u>	
BVD	Do not vaccinate with IBR, allow 2 weeks between Worm calves at 6-8 months of age Winter months
Internal parasites	
Delouse	
<u>12-14 months</u>	
IBR-PI ₃ (intranasal)	1-2 months prior to breeding
or	
IBR (intramuscular)	
BVD	1-2 months prior to breeding, allow two weeks between IBR and BVD
Leptospirosis	1-2 months prior to breeding
Vibriosis	1-2 months prior to breeding naturally
Intestinal parasites	Worm heifers in spring and fall
Delouse	Winter months

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