Introduction

Herd health is and will always be an important topic for livestock producers. With constant mutations of pathogens and the introduction to new vaccines, wormers, and antibiotics, there is always new information available for livestock producers to access and learn. There continues to be new ways to modify or enhance your current herd health plan. However, one piece of information that is not imprinted in every producer’s head is when to give vaccinations or de-worm, or when is the best time of year to vaccinate or de-worm. Keep in mind, it is not easy to remember what vaccinations to give, when to worm, and what supplemental vitamins to give, much less when to give them. This herd health question is often most asked among livestock producers across the U.S. Understanding the proper vaccines and wormers to administer is half of the battle to developing an effective herd health plan. The other half is knowing when to give them. This lesson will talk about developing a herd health plan to reduce the incidence of sickness and diseases in your herd, as well as developing a herd health program that includes all management plans and procedures to be used to produce healthy cattle.

Disease Impacts on Production

Due to the U.S. transportation system that is in place and the lack of vertical integration in the beef cattle industry, livestock movement is increasing. This constant movement increases stress loads on cattle and provides more opportunities for diseases to spread. Diseases have a major impact on reproduction, growth, and performance. Negative impacts on any of these traits will affect the profitability of any cow/calf beef operations. When diseases occur and treatment is required, sometimes effectiveness of the treatment may be poor and production losses have often already occurred. Depending on the disease or condition, other animals could become affected or infected before you have time to prevent it. Some diseases exist at “subclinical levels,” where observable signs are not present, so losses continue undetected.

Not only will treatment of cattle have an effect on herd health cost, there are negative impacts on feedlot performance and carcass quality in calves that have been previously treated for sickness. Roeber et al. (2001) documented that cattle treated two or more times had 12% lower average daily gains, lower hot carcass weights and dressing percentages. With the high cost of fuel, feed, and fertilizer, one can’t afford to compromise their herd health plan.
Benefits of Pre-Planning

The most economical way to keep disease and production losses low is prevention rather than treatment. Keep in mind there are several steps to implementing a complete herd health plan, other than vaccinations. These steps not only reduce the risk of disease in cattle on the ranch, but also cattle coming into the ranch. These steps include:

**Prevent Expose to Disease.** Health status of purchased animals are often times unknown, thus quarantine procedures should be employed to decrease the likelihood of disease introduction into the herd. In operations that manage animals in confinement where increased exposure to disease-causing organisms can occur, a more intensive prevention programs should be employed.

**Prevent Environment from Becoming Disease Host.** Moist, damp areas can become host environments for disease-causing organisms. The risk becomes greater in these moist, damp areas where high cattle concentrations occur. These include calving areas, fall and spring time on winter feeding areas, watering areas, low-lying shady areas. Frequent rotation of these areas can reduce the incidence of these organisms from developing.

**Keep Disease Resistance High.** Nutrition, vaccination, management, and housing programs should be properly managed to keep disease resistance high at all times. All of these programs, if managed properly will minimize stress which is critical for building good immunity.

**Observe, Observe, Observe.** Never assume your cattle will take care of themselves and that sick cattle will get over it, as some of us that think were tough and don't go to the doctor when feeling bad. Constantly keep an eye on your livestock so that you can pick up on those sick animals immediately. This will increase your chances of preventing the spread of a bad organism.

**If Disease Occurs, Prevent its Spread.** When animals are sick, segregate, diagnose, and treat accordingly.

A lot of times we get caught up in the health of our own cattle and don’t realize that when we sell cattle, there is a risk of health problems on the other end of the cattle trade. If you have a herd health plan in place, then the incidence of sickness in the cattle you sold will be low for that buyer. However, if you don’t then there will likely be health problems that the buyer will deal with after he purchases and transports your cattle home. The person buying your animals should have the same preventative herd health plan in place in order to reduce the incidence of sickness in his herd.

If you currently do not have a herd health plan in place, consult with your local veterinarian and get one implemented. Herd health plans provide a routine, planned procedure for minimizing or preventing diseases. When scheduling your herd health plan...
plan, you have to look at it in terms of an animal’s production cycle, because there are certain stages of the production cycle when an animal becomes more vulnerable to diseases. Figure 1 illustrates the timing of a herd health plan for replacement heifers, cows, calves, and bulls based on a herd’s production cycle. This figure is based on a producer calving in March, breeding in June, and weaning in October. Keep in mind, if calving season is earlier or later, then the seasons will change and the schedule will likely change.

There is no single plan that works for every producer/ herd. Some ranches, due to their operations, may require different vaccinations and wormers than others. Others may only need to vaccinate for diseases of higher risk in their areas. Production cycles are different for each operation, so timing of vaccinations, worming, etc. will be different. This is where consultation with your local veterinarian can assist you in putting together the right herd health plan for you.

Figure 1. Herd health plan schedule for replacement heifers, cows, calves and bulls during one complete production cycle.

The following is a basic herd health plan for replacement heifers, cows, calves and bulls at different stages of production.

The following is a Herd-Health Plan for Adult Animals:

1. Pre-breeding – vaccinate 30 days before the breeding season begins
   a. Replacement heifers
      - Reproductive vaccines
         1. Leptospirosis
         2. Vibriosis if needed
3. IBR, BVDV, BRSV, PI3 virus vaccine (if a modified live vaccine is used, be sure animal is open, otherwise abortion may occur)
   - Vaccinate for 7- or 8-way Clostridium (Blackleg)
   - Internal parasite control
   - External parasite control (lice and grub control in fall, fly control in summer)

b. Cows
   - Reproductive vaccines
     1. Leptospirosis
     2. Vibriosis if needed
     3. IBR, BVDV, BRSV, PI3 virus vaccines (if a modified live vaccine is used, be sure the animal is open, otherwise abortion may occur)
     - Internal parasite control
     - External parasite control (lice and grub control in fall, fly control in summer)
     - Check for soundness (eyes, teeth, feet and legs, udders)

c. Bulls
   - Breeding Soundness Examination
   - Reproductive vaccines
     1. Leptospirosis
     2. Vibriosis and/or Trichomoniasis if needed
     3. 7- or 8-way Clostridium (Blackleg)
     4. IBR, BVDV, BRSV, PI3 virus vaccines
     - Internal parasite control
     - External parasite control (lice and grub control in fall, fly control in summer)
     - Check for soundness (eyes, teeth, feet and legs, udders)

2. Pre-weaning
   a. Cows
      - Pregnancy diagnosis
      - Leptospirosis booster vaccine
      - Check for soundness (eyes, teeth, feet and legs, udders)
      - Internal parasite control – if detect presence of protozoans (flukes, roundworms, tapeworms, coccidians, and neospora)
      - External parasite control (lice and grub control in fall, fly control in summer)
The following is a Herd Health Plan for Calves:

1. Newborn calf: 24 hours of age
   - Identify and weigh, collect data
   - Disinfect navel – 7% tincture of iodine
   - Vitamin A & D injection
   - Vitamin E/Selenium injection, if needed
   - Implant growth promotant (implant heifer calves only if they will not be used as replacements)
   - Castrate bull calves if terminal
   - Dehorn if needed

2. Mid-nursing period (2-6 months of age)
   - Vaccinate for respiratory diseases (IBR, BVDV, BRSV, PI3 virus, and consider pasteurella, especially if killed products are used; booster dose given at pre-weaning)
   - Vaccinate for 7-way clostridial (calves should receive an initial dose and a booster. Ideally these are given at 3 months of age and again 2-4 weeks later)
   - Vaccinate for Haemophilus somnus, Pasteurella, and Mannheimia
   - Deworm for internal and external parasites: timing is important. Should be given in early to mid-July for spring-born calves, at beginning of grazing for fall-born calves
   - Dehorn if needed

3. Pre-weaning – These procedures should be done 3-4 weeks prior to weaning to allow time for immunity to develop before the high-risk event of weaning.
   - Vaccinate for respiratory diseases (IBR, BVDV, BRSV, PI3 virus, and consider pasteurella, especially if killed products are used; booster dose given at pre-weaning)
   - Vaccinate for 7-way clostridial
   - Vaccinate for Haemophilus somnus, Pasteurella, and Mannheimia
   - External parasite control
   - Internal parasite control
   - Implant growth promotant
   - Dehorn if needed

As you can see, disease prevention is not simple. Developing a herd health plan will not only reduce treatment and production cost in your herd, but it will make it easier to implement and manage a health cattle operation.

**Develop a Herd Health Calendar**

One tool that you should consider that can assist livestock producers in planning is developing a herd health calendar. A herd health calendar will allow you to visualize your strategies for developing, implementing, and evaluating a herd health program.
utilizing a calendar format. A herd health program is different from a herd health plan in that a program includes several plans, including the herd health plan. It also includes calving, breeding, nutrition, and general management plans.

Now before I get any further, one can design a herd health calendar just by making notes on a sheet of paper, just as long as one has a plan of action for implementing this herd health plan. But for convenience, developing a calendar that reminds you when you need to work (process) your animals and what to do at that working will make your life easier. Utilizing a calendar format, you can also plan other cattle workings the same time as your herd health plan (vaccinating, worming, etc.). Developing a herd health calendar has many benefits that include:

- Visualization of the number of times you will work your animals
- Less stress on the producer, employees, and family by having events planned out
- Prevents inaccuracies of program implementation and product purchasing
- Reduces health problems in the herd, thus increasing net profit

Developing a herd health calendar can efficiently assist you in knowing when to work your cattle, and what to give them. Keep in mind, one should not develop a herd health calendar based on calendar dates or calendar season, rather develop a herd health calendar based on time of the production cycle: when calving season starts, when the breeding season starts, and when you plan to wean your calves. This allows you to easily change your herd health program if your calving season changes from year to year.

Obviously, doing anything to cows and calves requires handling, so the idea is to plan your herd health program around other animal working or processing days to minimize the number of times those animals are handled. We will use the magic number two as that should be, on average, how many times both cows and calves should be handled in a year’s time.

You can find different forms of planning a calendar in the list of supplemental readings at the very end of this lesson. However, the University of Minnesota Extension Beef Team has developed a Cow/Calf Management Calendar that offers timely information and suggestions on managing your herd utilizing five different management categories: calving, breeding, management, nutrition, and health. This planner is offered in two formats on the U of M Beef Team website: an Interactive Cow/Calf Planner Excel Worksheet (Appendix 1) that provides you topics under each category relevant to the time of year and gives you pertinent information for each topic by touching the cell for that topic where a window will appear. The Cow/Calf Planner Print Sheet (examples on Appendix 2) allows you to print each calendar month with all the pertinent information for each topic. Both formats contain the exact same information.

In this Cow/Calf Management Calendar, it keeps you reminded of the events that need to be considered or implemented based on the production cycle. This calendar is set up on a calendar year, but the information on this calendar is based on a spring calving
herd with the mature cow herd calving the first of March, with breeding season starting the first of June, and weaning the first of October. Again, if you have a fall calving season or your spring calving season is earlier or later than March, you can change the months on the calendar by moving them up or down to fit your program.

Summary

Before calving season, consider using some of these ideas to plan your herd health program. If you don’t have a herd health program, consult with your local veterinarian to develop a herd health program and calendar. Also, build a strong, trusting relationship with your local veterinarian to ensure that your job and his job become much easier. If you do not have a local veterinarian, contact your state extension livestock specialists and have them assist you in finding a veterinarian that can help. I hope you learn from this lesson, and all other lessons, the importance of herd health and developing a herd health program. In the long run, it will either save you money, or prevent any future unexpected expenses.
Appendix 1. Cover page of the Cow/Calf Planner describing contents of the calendar. The following four pages are management considerations planned in a calendar year for a producer that calves in March, breeds in June, and

### The Cow/Calf Planner

**Author:**
Dr. Ryon Walker, University of Minnesota

**Co-Authors:**
- Dr. Cliff Lamb, University of Minnesota
- Dr. Bethany Lovas, University of Minnesota
- Lori Weddle-Schott, University of Minnesota

**Extension Service**

The Cow/Calf Planner is a Cow/Calf Management Calendar that offers timely information and suggestions on managing your herd utilizing five different management categories.

**CALVING** - Calving is a critical time of year that requires equipment, supplies, labor and facility preparations. This calendar prepares you for the calving season and offers suggestions to manage your calf crop.

**BREEDING** - Reproduction is one of the most important economical traits in the beef industry. Breeding season success is a reflection of your herd management practices of the previous year. This calendar helps you prepare and manage for the breeding season and offers tips on breeding season success.

**MANAGEMENT** - Management plays a large role in all aspects of an operation and greatly impacts economics. This calendar provides strategies for managing areas of an operation that can easily be overlooked and have major impacts on your economic returns and production goals.

**NUTRITION** - Nutrition impacts reproduction, lactation and performance in a herd. Nutrition is an area of management that should be monitored year round. This calendar includes suggestions to ensure that your cows, replacement heifers, bulls and calves are conditioned to exceed your management expectations.

**HEALTH** - Health, along with nutrition, can have a major impact on reproduction, lactation and performance in a herd and greatly affect carcass quality. This calendar provides a monthly schedule for vaccinating your herd and suggestions for monitoring herd health.

This program offers two work-sheets: Cow/Calf Planner Worksheet provides you topics under each category relevant to the time of year and gives you pertinent information for each topic by touching the cell for that topic where a window will appear. The Cow/Calf Planner Print Sheet allows you to print each calendar month with all the pertinent information for each topic.
## Developing a Herd Health Program

### University of Minnesota Beef Team

#### The Cow/Calf Planner

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<td>Begin calving area preparation</td>
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<td>Begin lining up calving season help</td>
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<td>Schedule calving help</td>
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<td>Monitor your replacement heifers</td>
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<td>Sort &amp; monitor heifers close to calving</td>
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<td>Record-keeping and production data mgmt</td>
<td>Monitor herd bull body conditions</td>
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<td>Sort springing heifers to calving area</td>
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<td>Estimate number of bulls needed for breeding season</td>
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<td>Navel dip newborns &amp; aid nursing if necessary</td>
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<td>Begin monitoring cows close to calving</td>
<td>Bull breeding soundness exams</td>
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<td>Rotate calves</td>
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<td>Grazing first-calf heifers</td>
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<td>Continuous recording individual calving data</td>
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| April | Female tract scoring and pelvic measurements | Monitor conditions of cows and first-calf heifers | Monitor health of calves | \n | Monitor your heifer and cow cyclicity status | Second calling on replacement heifers | \n | Wrap up the calving season | Breeding season preparations | Schedule breeding help | Summer grazing strategies | \n | May | Plan help for summer cow/calf working | Monitor bull breeding in heifer pasture | \n | Wrap up the calving season | Begin breeding of your replacement heifers | Inventory cow/calf working supplies | \n | Check status of remaining cows left to calve | Natural service vs AI & estrous synchronization | Monitor for bull injuries | \n | June | Optional breeding on pregnant cows | Monitor performance of breeding bulls w/ cows | \n | Begin the regular breeding season | Evaluate your breeding pastures | \n | Re-evaluate management of leftover pregnant cows | Turning bulls out after AI | Monitor for bull injuries | \n | Breeding | Begin to plan help for the hay season | Summer cow/calf working | \n
*Developing a Herd Health Program*

Lesson 5
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<td>Optional AI pregnancy determination</td>
<td>Monitor calf nutrition and body condition</td>
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<td>Remove bulls from heifer breeding pasture</td>
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<td>Bulls should be pulled from the breeding pastures</td>
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<td>Compare calf markets</td>
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<td>Monitor herd bull conditioning</td>
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Appendix 2. Example pages of three months (March, June, and October) of the Cow/Calf Planner describing in detail recommendations under each management topic, for that month.

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<th>CALVING</th>
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<tr>
<td>The remaining heifers left to calve, continue to keep careful watch in the pasture or move into calving area to monitor.</td>
<td>Sort springing heifers to calving area</td>
<td>Estimate number of bulls needed for the breeding season</td>
<td>Have your local vet conduct a breeding soundness exam (BSE) to evaluate the fertility of your herd bulls. This exam classifies a bull as either satisfactory or unsatisfactory for breeding. In case you have a sterile bull, this gives you time to search for a replacement herd bull before the breeding season begins.</td>
<td>Navel dip all newborns with 7% iodine, clostridial vaccine and assist all calves that do not nurse within the first 2-4 hours of life.</td>
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<tr>
<td>Individually sorting cows close to calving is not necessary, the majority should calve on their own, depending on your comfort level with the birthweight of the bull used. However, continue to carefully monitor cows calving. If you see the calf's feet protruding from the vulva for the first time, wait 30 to 45 minutes and if no change in calf position, then assist the heifer or cow in pulling the calf using sterilized equipment. If problems arise with assisting the calf, contact your local vet.</td>
<td>Begin monitoring cows close to calving</td>
<td>Bull breeding soundness exams</td>
<td>If you have bulls that fail to pass a breeding soundness exam twice in a row or come up lame, this may be a good opportunity to re-evaluate past herd production records, herd genetics and what the genetic needs for your herd should be, by utilizing EPDs and performance records. This will allow you to make accurate decisions on purchasing replacement herd bulls.</td>
<td>Heifers that have calved, ensure that they are in clean pastures or dry-lots and grazing the highest quality forage or being fed the highest quality hay and supplements to overcome their potential postpartum nutritional sink and guarantee a positive condition after calving to promote excellent rebreeding performance.</td>
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<td>Rotate calvers</td>
<td>Replace in fertile bulls</td>
<td>Continue recording individual calving data</td>
<td>Plan for the breeding season</td>
<td>Re-manage poor conditioned cows &amp; heifers after calving</td>
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<td>All cows and heifers that have calved, move them to a clean dry pasture or lot at least 3-4 days after calving. This will help in monitoring cattle left to calve.</td>
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<td>Within 2 to 3 days after birth, management considerations to include are: recording calf's birthdate, birthweight, dam and sire ID, color, polled or horned, sex and calving difficulty score into your database and ear tag with the appropriate tag number. If you wait longer than 2 to 3 days, calves become more difficult to catch.</td>
<td>Begin thinking about what your breeding season will entail. What are your goals for the genetics of your herd. Do you want to only use natural service this year or synchronize all or most of your herd for AI. Do you want to incorporate new genetics into your herd, increase certain production traits or reproduce superior in-herd genetics?</td>
<td>After calving, re-evaluate body conditions of your cows and heifers and sort those in poor body condition to pastures with higher quality forages or supplement higher balanced energy/protein rations to increase body conditions.</td>
<td>Cattle that do not drop their placenta within 3 to 4 hours after calving, monitor to ensure that those cattle expel their placenta within 24 hours. If not, have your local veterinarian evaluate her.</td>
<td>Observe newborns at least once daily for sickness, nursing problems or lameness. Treat according to symptoms of illness.</td>
</tr>
</tbody>
</table>

Developing a Herd Health Program

Lesson 5
June

At this point, if you have cows that have not calved yet and you still want to calve them out and breed them as soon as possible, turn those pregnant cows out with the bulls, even before they calve. Once they calve, research has shown that cows, in the presence of bulls, will come into heat after calving quicker than cows not in the presence of bulls. This will jump start those late calving cows to rebreed earlier than normal and shorten your calving season for the next year, if you decide to keep those cows.

Optional breeding on pregnant cows.

Monitor breeding performance of bulls with cows

Evaluate your breeding pastures

Observe breeding activity of bulls. Make sure they are healthy, mounting, servicing and have an interest in the cows.

Evaluate your breeding pastures. If forage quantity is starting to decrease, plan to graze an alternate pasture to prevent over grazing. Consider using grazing management strategies such as rotational grazing.

Re-evaluate management of leftover pregnant cows

Turning bulls out after AI

Monitor for bull injuries

Begin to plan for the hay season

Summer cow/calf working

If using estrous synchronization and/or AI, delaying bull turn out 10 to 15 days after AI will allow you to trace the sires of those calves by palpating for pregnancy 45 to 60 days after AI.

Multiple bulls in a breeding pasture (depending on age) tend to fight to achieve dominance of the herd. Make sure that the breeding pastures are big enough to accompany the number of bulls that you intend to use. Try to avoid using bulls of various ages within the same breeding pastures.

Most producers will summer work their cows and calves. This includes:
  - VACCINATING
  - DEWORMING
  - FLY CONTROL
  - BRANDING
  - DEHORNING
  - CASTRATING
  - RE-TAURING
  - Bangs vaccinating heifer calves for Brucellosis (calves 6-12 months of age)

If having is a big part of your operation, evaluate potential labor needed and adjust if more feeding resources are needed for the following year. Make sure that the pastures you use for silage or hay do not conflict with what is needed for grazing.
Developing a Herd Health Program

Lesson 5

University of Minnesota Beef Team
The Cow/Calf Planner

October

CALVING

- Whether you wean in September, October or the first part of November, make sure you have adequate help to do the following:
  - Second round of vaccines
  - Left over branding
  - Left over dehorning
  - Left over castrating
  - Left over or re-tagging
  - Calf weaning weights

If you have latitude to cull your poor producing cows, this is a good time to start, just after pregnancy determination. Develop your own cull list that prioritizes problem areas in your cattle, such as:
- Disposition
- Soundness
- Fertility
- Eye problems
- Yearly weaning percent

Weaning time

MANAGEMENT

- Manage your heifer calves

- Selection criteria/heifers

- Pre-weaning creep feeding

- Fall pregnancy determination

- Manage early bred and open cows

- Body condition cows and first-calves heifers

- Manage cull cows

NUTRITION

- Determine if you are going to raise your own replacements, develop replacements to sell as bred heifers, background heifers with your steer calves, retain ownership through the feedlot or sell them after weaning. If you plan to raise your own replacements, typically you want to replace 10% of your herd with first-calves heifers. Keep about 25 - 40% of your heifers to develop for replacements. This allows you to retain 10% for replacement into your herd after some fail to conceive or become pregnant later in the breeding season. Remember, older heifers reach puberty earlier. If you plan to develop heifers to sell as bred and keep replacements for your herd, you will need to retain more heifers for development. Based on your decision, plan accordingly for marketing, feeding, facilities and labor.

- Plan your replacement heifers winter feeding

HEALTH

Prior to weaning, if you have the equipment, labor, feed resources and are interested in creep feeding, start 15 to 25 days prior to weaning. This introduces the calves to eating concentrate feeds instead of an all forage diet and reduces stress that may lead to sickness and decreased post-weaning performance.

Condition score cows and first-calves heifers at fall preg check; this can help you manage your cows to prepare for winter. This allows you to sort cows and first-calves heifers, if need be, based on their plane of nutrition prior to winter. Poor conditioned cattle, prior to weaning, should be supplemented with additional energy/protein. Well-condition cows should be limited to maintain their current body condition during the winter.
References and Supplemental Readings


Cow/Calf Management Calendar. University of Minnesota Extension Beef Team. www.extension.umn.edu/beef/


Lesson 5 Quiz  
Developing a Herd Health Program

1. If calves destined for the feedlot have been treated two or more times since birth, what are two negative impacts on feedlot performance or carcass quality that can occur?

2. **True or False.** The most economical way go keep disease and production losses low is treatment of diseases.

3. There are five steps to reduce the risk of disease in cattle. One of these steps includes preventing the environment from becoming a disease host. What are two areas that are potential host for diseases and how can you reduce the incidence of creating that environment for these organisms to grow?

4. List the four reproductive diseases for replacement heifers, cows, and bulls and the four respiratory diseases for calves that should be vaccinated for.

5. **True or False.** It is OK to give a modified live vaccine to a pregnant cow or heifer.

6. When should you de-worm for internal and external parasites in calves?
7. List four benefits to developing a herd health calendar.

8. **True or False.** One should develop a herd health calendar based on the production cycle of your animals.

9. On average, how many times should replacement heifers, cows, calves, and bulls be handled in a production year, not include the use of estrous synchronization or artificial insemination?

10. List the five plans that should be included in a herd health program and part of a herd health calendar.

**PLEASE SEND QUIZ TO YOUR ASSIGNED GRADER UPON COMPLETION**

Name______________________________________ Phone____________________

Address_______________________________________________________________

Fax (Optional)____________________  Email (Optional)________________________
2008 Minnesota Beef Home Study Course

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