Extension
UNIVERSITY OF WISCONSIN–MADISON

Beef Producers Newsletter

Crawford & Richland Counties

Volume 1 Issue 1

Greeting Producers,

It was hoped that UW-Madison Extension Agriculture Educators would participate in local fall Cow-Calf events. However, due to current COVID-19 restrictions, an alternative way to provide information was needed. As a result, UW-Madison Ag Educators of the Livestock Program Area and Extension Specialist created a collection of articles. These articles were written to provide unbiased research-based information to assist with beef operation decisions until we can continue our regular in-person programming.

The Livestock Program Educators are developing a winter webinar series in place of winter workshops. This series will begin in December 2020 and run through March 2021. Virtual webinars will also deliver the Driftless Region Beef Conference (DRBC). The details of both programs are in the process of being finalized; please watch for information and registration instructions on the County Extension websites, in the mail, local newspapers, or feel free to contact me at either county office.

Another change to be aware of is the reorganization of our beef webpages. The new beef website will be housed at: https://livestock.extension.wisc.edu. We are in the process of moving all your favorite and new resources to this site. The webpage will include information about different types of livestock species produced in Wisconsin. Nevertheless, all beef information and tools will be easily accessed by selecting “Beef” under the “Topics” tab. Please be patient with our renovation.

As the fall harvest season continues, please remember to be safe when harvesting and during all other farm operations. I look forward to meeting you to discuss your beef enterprise needs. I am also here to discuss ideas, concerns or answer questions about your farming operation.

Sincerely,

Carolyn Ihde
UW-Madison Extension
Agriculture Educator
carolyn.ihde@wisc.edu

Crawford County
225 N. Beaumont St., Suite 240
Prairie du Chien, WI 53821
Phone: 608.326.0223
http://Crawford.uwex.edu

Richland County
1000 Hwy 14 West
Richland Center, WI 53581
Phone: 608.647.6148
http://Richland.uwex.edu

Extension
UNIVERSITY OF WISCONSIN-MADISON

Crawford and Richland Counties, Agriculture Educator

Carolyn Ihde

Carolyn Ihde is the University of Wisconsin Extension Agricultural Educator for Crawford and Richland Counties working in the Livestock Program Area. Carolyn has a Bachelor of Science Degree in Horticulture and a Master's Degree in Agricultural Education from Iowa State University. Before beginning her role in Extension May 2020, she was the Agricultural Instructor and FFA Advisor at Clayton Ridge High School in Guttenberg, Iowa.

Carolyn and her husband live in Clayton County, Iowa with their two teenage sons. Carolyn grew up in southcentral Iowa on a diversified family farm. She has experience with dairy, beef, swine, sheep, poultry, and horses. She currently raises sheep for both meat and fiber and enjoys growing fruits and vegetables in her home garden.

During the recent COVID-19 pandemic, Carolyn has been working from home with Agriculture Educators across the state to continue program outreach and planning educational opportunities for farmers. Please visit the Crawford and Richland County Extension websites to stay current with educational opportunities and updates. (crawford.extension.wisc.edu or richland.extenstion.wisc.edu)

Please feel free to call Carolyn at 608.326.0223 or email at carolyn.ihde@wisc.edu if you have any questions or need Information about farming in Wisconsin.

Division of Extension
University of Wisconsin-Madison
Agriculture Educator

Crawford County
225 N. Beaumont Rd. #240
Prairie du Chien, WI 52381
608.326.0223

Richland County
1000 US-14
Richland Center, WI 53581
608.647.6148

Working with What You Have

When it comes to working cattle, focus nearly always turns to the corrals. This happens whether the corrals are considered good, bad or just something we can use until we change them to make them work better.

It's a lament we often encounter. If cattle will not work easily through a part of the system, we sometimes hear things like, "they would work better if we could redesign that." While that may be true, once they're built corrals or processing areas are rarely torn out and redesigned.

However, the options are to live with poor flow through the system and with increased stress on the cattle, or to get it to work better and easier with less stress on cattle and people. Make no mistake, though: WE move cattle through the system. Regardless of existing design of facilities, paying attention to how we can change our approach and position will usually improve cattle movement through any system.

There are several key things that can usually make any system work better. First and probably most important is to bring less cattle into the problem area at any given time. Working smaller groups with more room to maneuver is nearly always easier than working in cramped conditions.

Second, work on timing and direction of pressure. We often try to force cattle through a "bad" part of the system while pressuring from behind. All that does is make the cattle want to go the opposite direction than what is needed or desired. Think about drawing cattle through a set of pens, alleys or processing area rather than pushing them through.

There is a simple concept in applying pressure to cattle, and that is their desire to take pressure off. Many people express this is by saying cattle want to go back where they came from, but that isn't really it. They just want to take pressure off.

A prime example of this is pushing cattle down an alleyway. The focus is usually on the cattle right in front of us or those in the back of the group. If you put too much pressure on the ones in the back without having room for them to move forward, though, their only option is to come back at the pressure -- in an attempt to take pressure off. That's why so many people get run over in an alleyway while moving cattle from point A to point B.

Another place that same principle applies is pushing cattle into a processing area. Pushing cattle into a sweep system that takes the cattle past a pivot point so they can come back around the pivot can create a "come back over the top of you" situation. If you want good flow, cattle need to be able to go past where you want them to end up. Unfortunately, corrals and processing areas were rarely designed that way.

Examples of designs that work the proper way are sweep systems designed by Dr. Temple Grandin, which are 270-degree sweeps and Bud Boxes. Both work off the same principles of taking cattle past where you want them to go and letting them flow back to "where they come from" as they look to remove pressure.

The other design that does this is the 135-degree sweeps on the market, as well as to some extent the new sweep system designed to mimic a Bud Box. By the way, these only work as designed if the people working them use them correctly. They shouldn't bring too many cattle and should position themselves in the correct location to establish flow and maintain enough pressure to get the cattle to move into the more confined space of a crowd alley.

If you don't have one of these designs, things are more reliant on position and correct application of pressure. Ask yourself, where do you need to be positioned to get cattle to go out of your poorly designed system? Look for ways to draw cattle out of a sweep or V-shaped forcing pen. Look at creating a daylight situation where cattle can see out of a sweep if the crowd alley starts the curve too quickly. For instance, by removing a portion of the metal sheeting up in the crowd alley you give something for the cattle to see and let them perceive an opening ahead.

The key to nearly all of this is to stop pressuring from behind. Remember, draw cattle forward.

Author: Ron Gill, PhD, Professor & Extension Livestock Specialist and Associate Department Head for Extension at Texas A&M University, Stockmanship & Stewardship Clinician

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NCBA.org

Do You Have Enough Forage?
Four Steps to Figure Forage Inventory

Now is the time, before the snow flies, to take inventory of your farm's forage supply and determine how well it meets the herd's needs. Knowing your feed inventory and needs early allows you to purchase now, rather than wait to purchase during the winter when forages are usually priced higher. Or worse yet, trying to find feed when you are down to the last day's worth of feed.

The process we outline in this article is intended to best allocate forage inventory to differing animal nutritional requirements based on animal age groups and their changing nutritional needs over the winter-feeding season. This process should help keep feed costs as economical as possible. This can be accomplished by figuring with a pencil and paper, or to make this process easier, the UW Madison Division of Extension Livestock Program has a new spreadsheet tool available. The Forage Inventory and Needs Calculator is a new free spreadsheet that does many of the calculations for the user based on their inputs. It is available at UW Madison Division of Extension Livestock Program website https://livestock.extension.wisc.edu/ in the Decision Tools and Software Section. This tool is designed to help determine both the total harvested forage inventory and herd forage needs. It is not designed to balance rations. If you are not comfortable balancing rations, we strongly recommend working with a reputable nutritionist to formulate balanced ration(s) for your herd's needs.

Step One: Inventory all forages available.

This should include quantity and quality measurements. Separate the baled forage inventory into groups with similar quality (i.e. 1st cutting vs. 2nd, rained on vs. not, alfalfa grass vs. road ditch hay) rather than lumping everything together. The goal is to match your forage resources to your herd's differing nutritional needs, while reducing the need to purchase feed. Use reasonable accuracy when determining weight of forages. The estimates and end results are only as accurate as the information you use.

For baled inventory quantity, do not base bale weights on book values, bale dimensions or manufacturers' baler settings. Real world variations exist depending on the baler, baler operator and type of hay. Weigh a few bales (dry hay or wrapped baleage) to get a reasonable bale weight for each specific batch and cutting. There are a number of ways this can be done with on farm scales or taking a load to a scale at a feed mill or gravel pit. If weighing a truck or trailer load make sure you have an accurate empty weight too. Then multiply this average weight by the number of bales in the batch to get a total weight for each baled forage type.

For ensiled feeds stored in bags, various silo types or piles, weighing some typical chopper box loads will provide a reasonable average weight. This means two trips over the scale: full – empty = weight of as-fed forage. Count loads placed into the storage structures to get a reasonable total weight estimate. It will be necessary to take into account fermentation and storage shrink if tracking weights of silage being put into storage to get a reasonable estimate of available feed. If it is not possible to weigh and count loads, dimensions of the storage structures (bags, tower silos, piles etc.) and either charts with weight estimates, or calculators included in the Forage Inventory and Needs Calculator can be used to estimate amount of forage in silage structures. Using the calculators with your actual measured density and moisture content will increase accuracy of the weight estimate in storage.

Forage test every forage source so balanced rations can be formulated. Prioritize forages for the production stages where they best fit.

Step Two: Determine daily forage requirements of each group of animals in the herd.

In addition to prioritizing your various quality forage resources to the different nutritional needs of the herd during the winter-feeding season, this step also determines daily forage needs for animals throughout the winter-feeding season. When working with rations, it is important to keep in mind the cows' changing needs during gestation and after calving, and the growing animals' needs increasing as they get larger.

Each animal group (mature cows, young cows, replacement heifers, bulls, weaned calves, etc.) should have balanced rations formulated for them. Some groups may need more than one ration, for example, as the cow herd enters different stages of gestation, their nutritional requirements change. In some cases, rations may be as simple as determining which forage inventory group meets their needs, for a given period, along with what mineral supplement may be needed.

When determining daily forage requirements, it is also important to account for the types of feeders being used. On some farms, the bale size, feeders and herd size, will likely result in cattle being able to eat somewhat more than they need, but it might cost more to change feeding equipment or limit the amount delivered than let them eat a little extra. Limiting the time they have access to the feeder may an option to manage their intake to help stretch forage supplies as long as they are able to consume what they need. Research at the University of Illinois observed that allowing cows access between 6 and 9 hours per day was adequate time for cattle to eat all they wanted, as long as all cattle could access the feed at the same time (Miller et.al. 2007). Some producers allow animals to have access to all the forages they can eat 24 hours a day. This still may not meet cattle needs, or it could greatly exceed them depending on forage quality and animal nutritional needs. Free-choice feeding may not be the most efficient use of feed resources.

Step Three: Determine total forage needs.

Once the daily forage requirements per head for the various rations have been determined, multiply that by the number of head being fed the ration and number of days the ration is fed to get a total demand for each forage source. It is also important to factor in storage and feeding losses, referred to as shrink. The spreadsheet tool calculates shrink based on user input information. Some forage storage and feeding methods losses can be very high and there may be opportunities for producers to improve forage efficiency by improving storage and feeding losses.

Following are some tables with examples of dry matter losses from storage and feeding.

Table 1. Effect of Storage Method on Dry Matter Loss of Big Round Bales (Saxe)

Storage Method	Range of Dry Matter Loss (%)
Under roof	2 - 10
Plastic wrap, on ground	4 - 7
Bale sleeve, on ground	4 - 8
Covered, rock pad or elevated	2 - 17
Uncovered, rock pad or elevated	3 - 46
Uncovered, on ground, net wrap	6 - 25
Covered, on ground	4 - 46
Uncovered, on ground	5 - 61

Table 2. Effect of Hay Feeding Loss by Feeder Type (Buskirk et.al.)

Type of Feeder	Percent Hay Loss (%)
Ring without panel	20
Cradle feeder	15
Feeder wagon	11.5
Ring with panel	6
Cone feeder with panel	3

Table 3. Effect of Storage Method on Silage Dry Matter Loss at Recommended Moistures (Holmes and Muck)

Storage Type	Dry Matter Loss (%)
Top unloading tower	11 - 19
Oxygen limiting tower	6 - 13
Pile or bunker, covered	18 - 34
Bags	9 - 14

Step 4: Compare inventory to needs to identify surpluses, shortages, or the need to change rations

Once forage inventory and needs have been determined, the next step is to determine if supplies are adequate, or if additional forages need to be harvested or purchased to make it through the winter. Adjust the rations to account for shortages of certain forages and surplus of others, or trade surplus forages for needed forages depending on prices and availability in each situation. Completing this task early will provide more options and greater flexibility for producers than waiting to compete with others who are feeding the last of their inventories.

It is time well spent to inventory your forages, plan rations and allocate your forage inventory to most efficiently and economically meet your herd's needs. Download the calculator and take steps to meet the forage needs of your herd.

Authors: Bill Halfman, Sandy Stuttgen, Ryan Sterry, Carolyn Ihde, Amanda Cauffman, Agriculture Educators, UW Madison Division of Extension

Reviewers: Michael Baker, Beef Cattle Extension Specialist, Cornell University, and W. Travis Meteer, Extension Educator, Commercial Agriculture- Beef, University of Illinois

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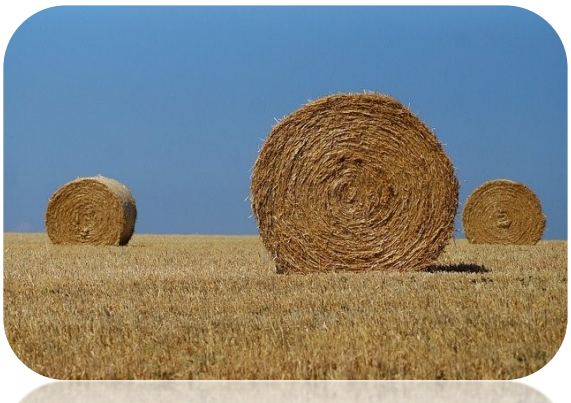

Culling Considerations for Beef Cow-Calf Herd

Culling decisions are a routine part of beef cow-calf herd management. Producers should make culling decisions based on what is best for their farm's profitability, and what is best for animal well-being. This can be summed up as marketing cattle while they are in a condition that processors prefer, before they become a transportation risk, and their value declines.

Adequately conditioned cows have greater carcass and economic value and are increasingly being referred to as market cows instead of cull cows. The following suggestions are general considerations for you to factor in when developing your farm's culling strategies.

Decisions specific to an individual animal

Declining health and/or weight loss: Scrutiny is greater than ever to evaluate livestock fitness for transport, specifically cattle at risk for becoming non-ambulatory. Cows must be in adequate health to make the haul when leaving the farm for market and from market to the processing plant. Farmers need to make the decision to market cows before declining health or low Body Condition Scores (BCS) makes them less desirable to processors and sales revenue is lost.

Reproduction: Reproductive efficiency is one of the greatest factors impacting beef cow-calf enterprise profitability. Open cows and heifers consume feed without providing income from calf sales. Late calving cows produce lighter weight calves and have fewer chances to breed back. Economic modeling show's that 6 calvings are needed to recover the initial investment of rearing a replacement heifer. In Boyer's analysis it took 8 calvings if one calving season is lost due to failure to conceive, and over 9 calves if two calving seasons were lost (Boyer et. al. 2020).

Udder conformation: Cows with weakening udder attachments and median suspensory ligaments can have low, pendulous udders. Extremely low udders can be difficult for calves to reach to suckle and are a risk for injury and mastitis infections. Large teats can also be difficult for calves to nurse.

Feet and legs: Lameness is an animal well-being concern and can lead to rapid weight loss. In less extreme cases, undesirable foot and leg composition can lead to chronic mobility issues. Extremely straight ("posty") or set ("sickle hocked") rear leg set and poor rump structure are examples of structural faults that negatively affect mobility. In addition, the prevalence of foot diseases causing lameness, such as digital dermatitis (a.k.a. hairy heal warts), are likely underestimated in beef herds, especially in confinement beef operations (Kulow 2017).

Poor calf performance: Complete, accurate, multi-year production records should be leveraged into your decisions for removing inferior dams by factoring in calf performance. Cows that consistently wean light weight calves indicate a poorer ability to produce milk, nurture a calf, or simply have inferior genetics. Care needs to be taken to use production records properly. Calves of first and second calf heifers shouldn't be expected to perform the same as calves from mature cows, and records need to be kept in a fashion that can sort this out. Additionally, a one-time event, such as calf sickness, may occur that has nothing to do with mothering ability, emphasizing the importance of multi-year records.

Disease: In addition to disease conditions that result in rapidly declining health, there may be profit robbing chronic diseases to manage, or eliminate, from your herd. This may include cows testing positive for Johne's disease, Bovine Viral Diarrhea (BVD), and Bovine Leukosis (BLV).

Disposition: Vigorous calves and protective mothers are a good thing, to a point, but extremely aggressive behavior has negative consequences. Cows with overly aggressive dispositions are a danger to handlers. The heritability of disposition is moderate to high in cattle. Feedlot cattle with more excitable disposition scores have been shown to have decreased body weights, poorer average daily gains, and poorer carcass yield, grade, and marbling scores (Reinhardt et. al. 2009)

Herd level decisions

In addition, you may be faced with considerations above and beyond a specific cow in the herd:

- What is your current cow inventory in relation to desired herd size?
- Have you retained a sufficient number of replacement heifers, or have the means to purchase replacement heifers?

- What is the price spread between market cow values and replacement heifer prices?
- Do pasture conditions and feed inventories support your current herd size?

Optimizing Value

According to the National Beef Quality Audit, market (cull) breeding animals contribute up to 20 percent of gross revenue for beef operations (National Cattlemen's Beef Association, 2016). Despite their contribution to gross revenue, many farms market cows without a plan to optimize their revenue.

Seasonal price patterns have been well documented for market cows (Amadou et. al. 2014; Blevins 2009; Peel & Doye, 2017). While exceptions can occur due to market volatility, price lows typically occur in November. Peak prices occur in late spring through mid-summer. With the majority of beef herds practicing spring calving and fall weaning, market cow volume increases in the fall as calves are weaned, cows are typically pregnancy checked, and decisions on who remains in the herd are made.

Holding onto market cows until spring has promise for higher prices, but the cost and risk of doing so must be factored in. Having a plan to add weight to thin cows and increase their quality grade can tip the scales in your favor. Body Condition Scores can be used to approximate market cow class and the amount of BCS improvement needed to move up in classification. Breakers are approximately BCS 7 and above, Boning utility (Boner) are approximately BCS 5-7, and Lean's and Lights are BCS less than 5. Lights have approximate hot carcass weights less than 500 pounds (Peel and Doye 2017, Selk).

On average it takes about 75 pounds of weight gain to increase one point in BCS. On the other extreme, overly fleshy cows (BCS over 7) may not receive as much of a market premium and are less feed efficient.

There are risks to prolonging ownership of market cows. Not all cows are good candidates to add condition to. Cows with rapidly declining BCS, poor teeth, advanced age, or health problems should be marketed in a timely fashion, or risk becoming non-marketable and losing all value. Feed inventory and prices must be considered. Yardage expenses and added labor costs need to be accounted for as well.

A strategy sometimes overlooked is pregnancy checking cows in early Fall, and marketing open cows in September and early October. In a typical year market cow prices will be declining, but not have reached seasonal lows. An added benefit to this strategy is it also reduces feed costs associated with retaining market cows.

Authors: Ryan Sterry and Bill Halfman, UW Madison Division of Extension Agriculture Educators

Reviewers: Ashley Olson, Amanda Cauffman and Sandy Stuttgen, DVM, UW Madison Division of Extension Agriculture Educators, Dr. Megan Nelson UW Madison Division of Extension Livestock Outreach Program Manager

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Preconditioning Calves: Establishing Your Reputation

Preconditioning calves is not a new or groundbreaking concept within the cow-calf industry and is a management practice that many producers implement to increase buyer interest and add value to their feeder calves. Preconditioning is the practice of building the health status of calves and training them to feed bunks and waterers post weaning. Preconditioning is a relatively loose term, because there is no one standardized program. True preconditioning should include a combination of weaning, vaccination, castration, dehorning, and feed bunk and water training. Specific vaccinations administered and time period may vary. Feeder calves weaned for a minimum of 45 days have been shown to experience less morbidity and lower health care costs per steer than calves weaned and immediately shipped regardless of vaccination protocol on the ranch (Step et al, 2008). Just "giving them their shots" is not preconditioning.

Cattle buyers value knowing a group of calves is at lower risk for disease (morbidity) and death (mortality) because they have been through a quality preconditioning program (Schumacher, Schroeder, and Tonsor, 2012).

A well-planned preconditioning program includes the calves' nutritional and health needs and the operation's marketing goals (see article titled "*Western Wisconsin Beef Producers Purple Tag Program*" in this newsletter on Page 3 and "*What is Included in a Preconditioning Program?*" on Page 10). Branded preconditioning programs have specific required procedures (including timing relative to time of sale). Several programs include the number 45 in the name indicating that the calves have all been weaned at least 45 days prior to sale. Schumacher, Schroeder, and Tonsor (2012) analyzed data from a feedlot producer survey that expressed feedlot producers willingness to pay $4.84/cwt more for a calf under the same health program weaned 45 days as compared to 30 days, and $10.22/cwt for calves with the same health program that were not weaned at the point of sale.

Forty-five day preconditioning programs often result in producers selling heavier calves (more pounds of calf per cow). Increased weight per calf may come from owning the calves longer, and more closely meeting their nutritional needs when looking at the potential quality of late season pasture and reduced milk production of the dam compared to eating a balanced ration to meet a target rate of gain during the weaning and preconditioning period. We do not want to make the calves over conditioned during preconditioning. The goal is to add frame and muscle, not fat.

Thinking beyond the health benefits, preconditioning is also a more humane way of operating. Anyone who has walked the alleys of a sale barn during the fall weaning season can spot the groups of calves missing their mothers and those that are probably hungry and thirsty due to the lack of feed bunk and water access training. In this day and age, consumers are becoming more and more concerned with animal welfare, and this begins well before the calves step foot into a feedlot.

Cattle buyers and feedlot operators are looking for specific types of cattle that best fits their needs. These needs include properly vaccinated, dehorned, castrated (and healed), weaned, bunk and waterer trained and backgrounded cattle at a particular weight and body condition. Buyers may still bid on calves falling outside of these needs, but at lower prices to mitigate the risk non pre-conditioned calves face.

Obtaining a favorable price requires the producer to move from just 'showing up at the sale' with calves to helping your marketing partner promote your calves. It is up to the producer to both: provide a favorable product and help proactively market it as such. Correctly preconditioning is one part of the equation to increase interest in your calves, but only if the preconditioning program is shared with potential buyers. This is done by providing the sale barn with documentation of how the calves have been prepared to perform for the next owner. Some markets have forms for feeder cattle consigners to use. It is important to provide this information to the sale barn before sale day, as many sale barn locations will advertise the calves, including precondition status, in the early listings, further helping to promote and market the cattle. Another reason to let sale barns know ahead of time what you are bringing is they are often asked by buyers how many head they expect at sales, and the more head, the more likely buyers are to attend because they know they have a greater chance of filling loads.

Preconditioning every year helps establish your reputation. Many feeders track the source and performance of cattle they buy from year-to-year. If your cattle consistently do well for their next owners, you build a reputation of producing a high-quality product and become a sought after source for feeder calves.

The health and productivity of the calves your operation produces influences your reputation at the sale barn. By marketing properly preconditioning calves, a producer is not only setting their feeder calves up for success on sale day this year but also helping build demand for their calves in the years to come. Building and maintaining a positive reputation for the farm, themselves, and their cattle, allows cattle producers to be preferred sources of feeder calves and help build and maintain consumer confidence.

Authors: Amanda Cauffman and Carolyn Ihde, UW Madison Division of Extension Agricultural Educators

Reviewers: Bill Halfman, Sandy Stuttgen and Ryan Sterry, UW Madison Division of Extension Agricultural Educators, Dr. Megan Nelson UW Madison Division of Extension Livestock Outreach Program Manager

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What is Included in a Preconditioning Program?

Respectable preconditioning programs focus on health AND nutrition. The goal of these programs is to help calves succeed during their next phase of production at the feedlot, stocker, or heifer development facility. Typical preconditioning periods involve 45 days. (1,2,5) For more, see the article *Preconditioning Calves: Establishing Your Reputation* in this newsletter on Page 9.

Nutritional details

Calves should be weaned and fed to gain 1.8 to 2.4 lbs. per day, depending on the type of calves. During the weaning and preconditioning period, the goal is to have moderate gain with a growing ration, not to work calves onto a finishing ration. Gains much higher than this may result in overly fleshy calves at sale time and research has shown that fleshy calves are often discounted. **(3)** Feeding a balanced ration is critical to the overall health and performance of the calf. Calves respond better to vaccinations and other health treatments when fed rations balanced for energy, protein, macro- and micro-minerals, and vitamins.

Calves learn to graze and drink water by watching their mothers. Prior to weaning day, introduce the calves to hay and grain by rolling out the bunk wagon or allowing cows and calves into the dry lot and let cows teach the calves that good things come in bunks. Provide adequate bunk space at an appropriate height so that cows and calves can eat at the same time. Creep feeding is another technique that teaches this valuable skill. The trick is to provide familiarity with feed stuffs before the cows are removed on weaning day.

Weaning is easier for the calf when the cows are removed, and the calf is allowed to stay in their familiar surroundings, especially if pasture weaning, and calves are left in a fairly fresh pasture. Research has found that the cow is more stressed out by weaning than the calf is. Fence line contact, or at least being in sight of each other can help reduce stress on both the cow and calf. Placing water tanks, nutritional stress tubs and feed bunks along the fence line can help distract the calves from calling for momma. Some producers have found nose-flap weaners to be an effective, low-stress weaning tool to use while keeping calves with the dams.

Health Details

Calves should be properly castrated, dehorned and vaccinated for the most common respiratory agents and *Clostridia*, and treated for internal and external parasites. Work with your veterinarian to approach the health

program backwards from your expected sale or transfer dates to determine when and how the vaccines and procedures need to be completed. The goal is to accomplish all health events with minimal stress to the calves.

What exactly is a 'stressor'? Castration, dehorning, each vaccine and animal health product, and restraint are all stressors. Plan to never stack more than three stressors on top of restraint on one day. Administering vaccines to animals under stress increases the likelihood of the animal not responding to the vaccine. Dehorning is perhaps the most stressful event due its associated pain and release of stress hormone, cortisol, which suppresses immune function. Dehorning should be performed with calves less than three months of age (per Beef Quality Assurance, BQA, guidelines) and in combination with at most only one other stressor.

For the overall health of the calf, divide the health tasks between those that should be done before weaning day and those that are done after weaning. The first pre-weaning tasks occur shortly after birth as neonatal calves are ear-tagged, navels are disinfected, bulls are castrated, and intranasal vaccinations for viral respiratory agents are given. The second set of tasks occurs one month prior to weaning. The third occurs at or after weaning.

Keep in mind, animal restraint is needed for these tasks to be accomplished. Plan for how you can restrain a neonatal calf without being challenged by the dam. Sorting pens, and a squeeze chute and head gate are the preferred facilities to have when working older calves.

Neonatal Tasks

Knife cut (open or surgical) castration is preferred, and this can be accomplished shortly after the calf is born. The risk of tetanus is minimized with open castration of small calves, making vaccination for tetanus often unnecessary. The stress from being castrated and his ability to heal the incision are supported by the nutrients and comfort he receives while nursing.

Administer an intranasal vaccine to IBR-PI3-BRSV to calves at or within 48 hours of birth. Injectable (IM or SQ) vaccines given at this young age are often blocked by maternal immunity; intranasal vaccines are not, and they are safe to use in suckling calves**. (6)** Our current understanding of neonatal immunity indicates that some adverse reactions may occur between three to eight days of age, so administer viral vaccines before or after this window. Depending on the product used, the duration of immunity from the intranasal vaccine will help protect the calf until the IBR-PI3-BRSV is boostered using an injectable product that also contains BVD.

Respiratory Agents Included in Preconditioning Vaccination Programs

The most common respiratory agents to vaccinate for include those involved with 'shipping fever' or bovine respiratory disease (BRD) including

Viruses: IBR-PI3-BRSV-BVD:

- Infectious Bovine Rhinotracheitis
- Parainfluenza 3
- Bovine Respiratory Syncytial Virus
- Bovine Viral Diarrhea

Bacteria: Mannheimia haemolytica, Pasteurella multocida, and Histophilus somni.

Viral infection usually precedes the bacterial infection. (**4**) It is for this reason that viral vaccines are of paramount importance. Good nutrition, body condition, vaccination and viral vaccination does the most to prevent secondary bacterial pneumonia.

Preweaning Tasks

One month prior to weaning is a good time for the calf's first catch in a headgate. This may be completed while cows are checked for pregnancy. Calves may be dewormed for both external and internal parasites at this time. Intranasal

respiratory vaccines may be boostered with an injectable viral product containing BVD and the first round of *Mannheimia, Pasteurella and Histophilus* may be given. When not using polled genetics, check for horns and remove them using pain management. **(2,8)** The calves are turned back with their dams with either the placement of 'weaners' or creep feeders or given access to bunks.

Following BQA guidelines, all injections should be given in the neck region injection zone, with low volume, subcutaneous (SQ) products preferred. Non-ivermectin products (due to their high rate of resistance) should be administered to treat internal parasites. **(7)** It is important to use a product that kills inhibited *Ostertagia*. Also treat for lice and grubs (grub control is subject to time of year requirements).

Weaning/Postweaning Tasks

The final respiratory boosters and *Clostridia* product are administered during the calf's second and last hold in the headgate. This may be accomplished as the calf is sorted for weaning, provided that the calf is accustomed to the feedstuffs and drinking from a waterer; if not, wait until a few weeks after weaning for final vaccine administration.

In Summary

Work with your nutritionist and veterinarian to develop the preconditioning program that works on your farm and meets the expectations of the buyer of your calves. Maintain a facility that provides safety for both you and your cattle.

Authors: Sandy Stuttgen, Bill Halfman and Ryan Sterry, UW Madison Division of Extension Agriculture Educators

Peer Reviewers: Darrin Zimmerman, DVM, Sunrise Veterinary Services, Reedsburg, WI
Amanda Cauffman and Carolyn Ihde, UW Madison Division of Extension

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Photo courtesy of Josh Kamps

Fall Pasture Weed Control

If your pastures have an abundance of biennial or perennial weeds like spotted knapweed, wild parsnip, thistles, Canada thistle, and horsenettle, then fall is a good time to get a handle on these tough to control weeds.

During fall, these plants are translocating sugars into the root system to prepare for next spring's re-growth. Fall application of systemic herbicides results in abundant translocation of the herbicide to the perennial parts of the plant (roots/rhizomes), which results in excellent weed control. Systemic herbicides enter the plant through its foliage and kill the plant by disrupting normal plant functions. Some common examples of systemic herbicides include 2,4-D, dicamba, glyphosate, and aminopyralid. While these herbicides can be effective at other times of the year, reduced control is often observed as products are applied when the plant is rapidly growing (e.g. spring) due to poor translocation of the herbicide to the roots/rhizomes below ground.

When targeting biennial plants, like wild parsnip and the biennial thistle species, it is important to focus efforts in their first-year growth stage during the fall. First-year growth habits of biennial plants are low growing rosettes. There is no point in wasting time and herbicide on the second-year growth stages (the tall upright flowering growth habit) of the biennial weeds in the fall, as they have already gone to seed and are dead or dying.

Fall control of perennial weeds uses the same approach as discussed above for biennials. Focus on the growing parts and leaves of the plants when applying herbicides.

There are several online resources for pasture owners to help correctly identify the different weeds in pastures and their growth stages. One example is the UW Weed Science Programs WeedID Tool https://weedid.wisc.edu/weedid.php. Pasture owners can also contact their local Extension Office for help in identifying weeds.

Spot applications of herbicide rather than broadcast spraying may save some money while controlling weeds if the infestations are isolated to certain areas of the fields. Take into consideration time and labor costs for spot versus broadcast spraying.

Several herbicides are labeled for controlling biennial and perennial weeds in the fall. For information to match herbicide options to the target weed species, pasture owners can take a look at the Forages Weed Control Section in UW Extension Publication A3546 Pest Management in Wisconsin Field Crops https://learningstore.extension.wisc.edu/products/pest-management-in-wisconsin-field-crops.

Some additional considerations, in addition to weed control efficacy, are grazing and harvest restrictions, and planting intervals if you plan on seeding legumes into the pasture. Pasture owners should always follow the label directions for rates and safety procedures for handling and applying herbicides.

All herbicides currently labeled for controlling broadleaf weeds in pastures will also effect desirable broadleaf plants like alfalfa, clovers, and legumes. This is where spot spraying can help maintain legumes in the pasture where weeds are only in localized areas. Legumes may need to be re-established after satisfactory weed control has been obtained.

At the time of herbicide application, it is important to make sure there is adequate above-ground foliage on the target weeds. Do not apply herbicide immediately after clipping the pasture and leave the weeds' top growth for at least two weeks after application to allow good translocation of the herbicide through the plant. Systemic herbicides may be applied after a frost if the plant is still actively growing.

In summary, consider fall herbicide applications to reduce biennial and perennial pasture weeds. Identify the weeds to be targeted, understand their growth stage and timely apply the applicable herbicide at the correct rate. Read the labels of all products used and take measures to protect the environment and yourself from undesirable herbicide side-effects.

Author: Bill Halfman, UW Madison Division of Extension Agriculture Educator

Reviewers: Mark Renz, UW Madison Weed Scientist, Sandy Stuttgen and Ryan Sterry, UW-Madison Division of Extension Agriculture Educators

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