EXTENSION
VIEWS
A Product of Extension Clark County

In this issue: ..... May/June 2025

Extension
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CLARK COUNTY

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Evaluating alfalfa stands for profit in spring 2025

Written by Landon Baumgartner

Winter 2024-25 is in the books and can be chalked up as another installment in a string of abnormal winters we've gotten so far this decade. Substantial snowfalls were few and far between, sub -zero cold was relatively common, and winter annuals, fall seeded perennials, alongside established alfalfa stands entered a challenging overwintering situation.

Unsurprisingly, I've heard a lot about farmers around Wisconsin intending to rotate out rough-looking alfalfa stands at least in part due to winterkill. This may not be a bad idea, but it's helpful to know the process of objectively evaluating an alfalfa stand's condition to know if it is good enough to keep. Then we can tackle other subsequent management questions with confidence.

Evaluating alfalfa quality in spring and fall

Alfalfa stand quality can (and should!) be evaluated in both spring and fall. Fall evaluations have the advantage of giving us more time to make management decisions for the following growing season, such as fertilizer application, spring herbicide strategies, and crop sequencing.

However, for winter kill, a spring evaluation is also necessary to truly judge the status of our alfalfa fields. Luckily, the same aspects are evaluated for both seasons. One of the most obvious signs of winter injury in alfalfa is slow green up in the spring. If neighboring fields are starting to grow, and one is still brown, it's time to check for injury or death.

Assessing alfalfa for winter kill

Wisconsin research has supported utilizing stem counts along with root and crown health assessment in place of plant density to properly evaluate a stand.

Stems

To conduct a stem count, select 3 representative areas in a field and mark out a 2-foot square section in each using a 17" x 17" ,

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square comprised of ½" PVC tubing, or a 19" diameter ring.

In these squares, count the number of stems over 2" tall, then divide by two to get stems per square foot.

Add the total number together and divide by 3 to obtain the average across the 3 representative sites. A good rule of thumb is that with any number above 55, stem density is not the limiting factor for yield that year. Less dense stands are worth considering for replacement. This is where plant health qualities come into consideration.

Roots

Now, break out the shovel. Select about 3 representative spots in a field to dig down to at least 6" depth to obtain a good plant sample to evaluate both the crown and root conditions.

Winter killed roots will be soft, stringy, and gray or brown and you may be able to squeeze water out of them.

Crown

Shoots of differing heights indicate some fall-formed buds were killed off during winter and needed to regrow from scratch.

Asymmetrical green growth from the crown may also be a sign that only a portion of the plant has survived. This is another reason stem counts are more reliable than plant density.

Now that you have all this information, you can start to make a more informed decision on stand retention. If you have at least 55 stems per square foot, on average, you can expect a continued return on the investment you made by seeding that field down for at least another year.

Assessing alfalfa stand quality in spring without stem visibility

If you are assessing early enough in spring and stems are not visible, use the following as a guide:

1. *A stand seeded last year should have at least 12-20 plants per square foot. If this stand is thinner than that, you can reseed without autotoxicity concerns, as this would be only a 1-year-old stand.*

2. *Stands older than 1 year that do not have at least 5-6 plants per square foot should be terminated and rotated to a non-alfalfa crop.*

Plant stem with root rot showing brown discoloration.

When you get below any of these thresholds AND if more than 30% of a field is affected by root rot to the point that ½ the diameter of these roots is discolored, it's time to develop alternative plans for that field.

What to do if alfalfa stands are in poor quality

There are several alternatives to manage an alfalfa stand after winterkill damage.

Overseeding with forage grasses

If you do decide to overseed with a grass forage such as orchard grass, Italian ryegrass, or oats, a general prescription of 40-60 pounds of nitrogen per acre should be considered to assist in establishing these grasses.

Rotating out of alfalfa and taking advantage of N credits

If you are rotating into corn, remember that although an alfalfa field was terminated due to winterkill, the legume nitrogen credits provided by that stand are still very significant. Alfalfa stand density and regrowth height in the previous fall and soil texture are used to determine the nitrogen credits provided to a spring planted corn crop.

The one exception to this is if the alfalfa stand was cut for a first crop of hay before corn is planted. In that case, the stand count conducted after the first hay cutting would be the best estimate of credited nitrogen. Using the chart below, if the alfalfa stand was harvested and had less than eight inches of regrowth and a stand density of three plants per square foot on a medium textured (silt loam or clay) soil, the nitrogen credit for the following corn crop would be 120 pounds of nitrogen per acre.

To dive deeper into the methodologies mentioned in this article, see visual references, obtain fertilizer recommendations for your farm's soils, and find related resources, refer to the references see online article at https://cropsandsoils.extension.wisc.edu/articles/evaluating-alfalfa-stands-for-profit-in-spring-2025/

Below:
Nitrogen credits for alfalfa based on soil texture/type and stand density. Source: Laboski, C. & Peters, J., 2012.

	Medium-/fine-textured soils		Sands/loamy sands	
Crop/stand density	> 8" regrowth	< 8" regrowth	> 8" regrowth	< 8" regrowth
First-year credit	lb N/a to credit			
Alfalfa				
Good (70–100% alfalfa, > 4 plants/ft²)	190	150	140	100
Fair (30–70% alfalfa, 1.5–4 plants/ft²)	160	120	110	70
Poor (0–30% alfalfa, < 1.5 plants/ft²)	130	90	80	40

Annual June Dairy Month Recipe Contest

Theme is Mexican Foods

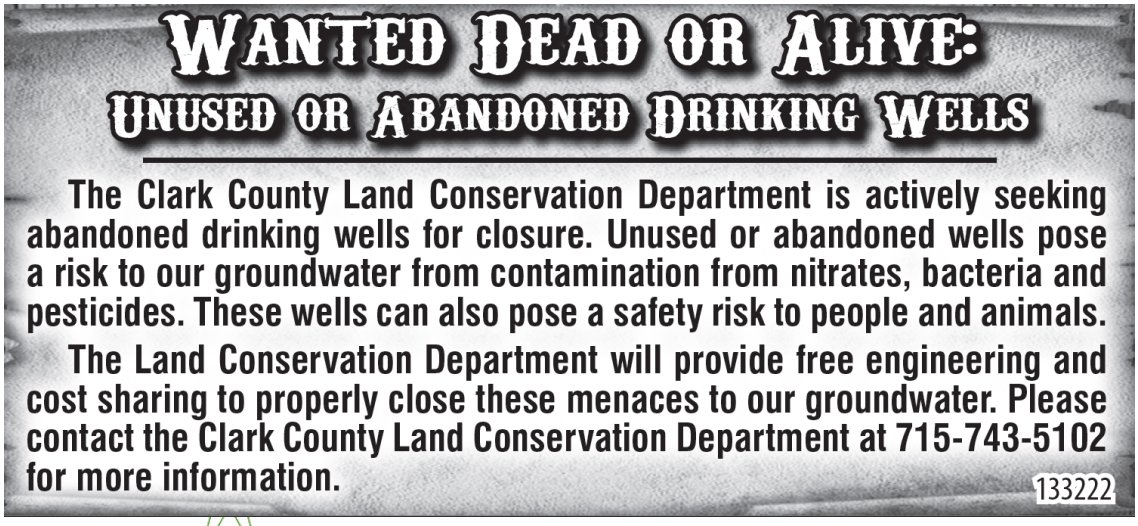
Wednesday, June 25, 2025

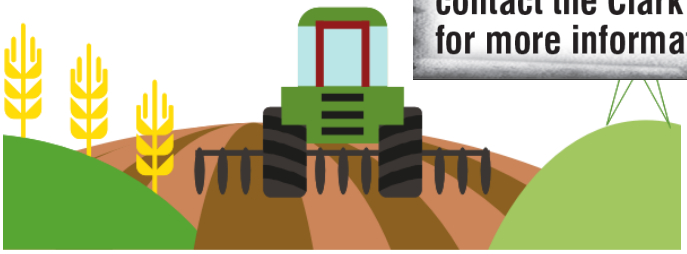
The contest is held at Loyal City Hall with registration running 6:30 – 7:15 p.m. and the program starting at 7:30 p.m. This event is sponsored by the **Clark County Dairy Promotion Committee** and the public is invited to participate and/or attend. The past year's winner is the current year's chairperson.

The top 10 winners will take home over $300 in prizes and all contestants will receive a dairy promotion gift.

Rules and Requirements

1. Any person residing in Clark County may enter.
2. The recipe must include at least two generous portions of dairy products.
3. Entries must be made primarily from scratch. It can have a pre-packaged item as a minor ingredient, but not as the mail component.
4. **Circle** the **dairy products** on your recipe. Remember eggs, cool whip, and margarine are not dairy products.
5. Recipes must be typed or neatly written. Give complete directions, state use of utensils necessary, and include approximate number of servings.
6. The name, address, and telephone number of the contestant should **NOT** be on the recipe. When entries are received at the contest a number will be assigned so the recipe and product are judged without a name.
7. Contestants must enter a dish made by themself and must be present for entire program. No exceptions.
8. All recipes become Clark County Dairy Promotion Committee property and will not be returned. The committee also reserves the right to publicize any recipe entered.
9. The entries will be judged on flavor, use of dairy products, clear directions, appearance, and uniqueness.
10. The top winning person will be the contest chairperson for the following year and will choose the category. The category is a type of food (bars, soup, cake, breakfast bake, etc.). A category is NOT a specific ingredient.

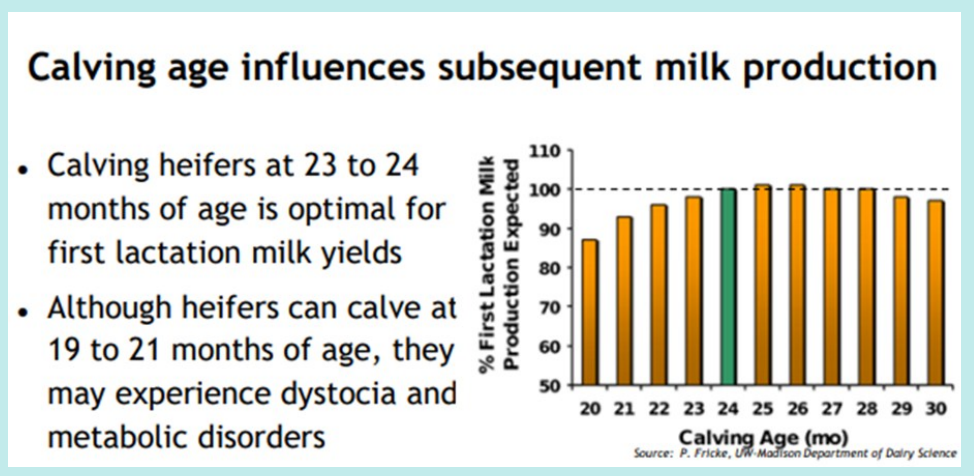




Rethinking Replacement Heifers

Matt Lippert Regional Dairy Educator in Clark, Marathon and Wood Counties

Cows and heifers are worth more today than they used to be. How much more? The USDA National Dairy Comprehensive Report for March of this year put springing heifers at $2,920 per head. Two years before this the price was $1,245. It has long been best practice to look at heifers as the future of the herd and to realize that anything less than the best care can only decrease their productivity and value- but wow! These prices really bring that message home in dollars and cents.

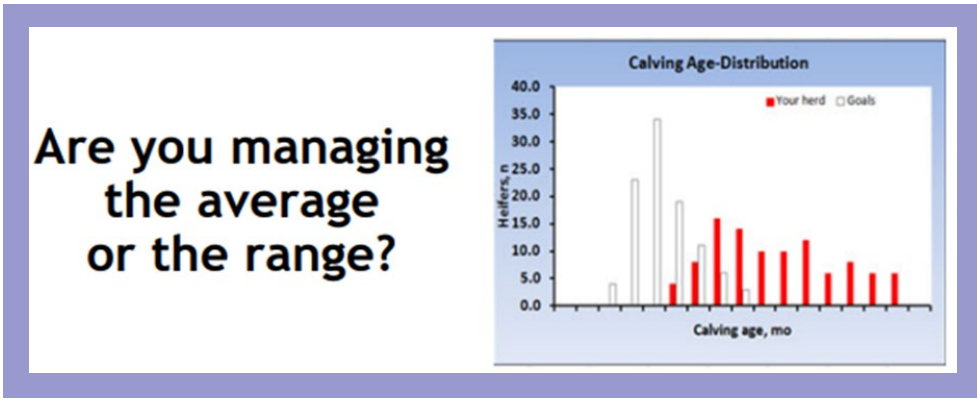


The cost of dairy replacements is generally put at 20% of the expenses on the farm. Looking at the cost side of the equation there has been heavy emphasis on getting heifers in production very young. Heifers freshening sooner decreases the number of heifers on the farm, opening room for housing, decreasing feed needs and manure production. However, heifers calving young at 20-21 months of age only produce about 87% of what heifers calving at around two years of age. (Paul Fricke, UW-Madison Dairy Science) Even as they come into production sooner these losses in first lactation are hard to make up in lifetime production. The rearing costs of heifers over two years of age literally eat up the gains in production, so one answer is to breed early to avoid old heifers. Another answer is to have greater success with higher pregnancy rates when breeding heifers- avoiding the extremely young or the extremely old. An outstanding fertility program can help accomplish this but so can having very healthy heifers. Providing adequate bunk space and lying area, cow comfort, clean bedding, well balanced rations (not too much energy or too little), better ventilation, and intensive care of young calves will get you there. Average daily gain only needs to be about 1.8 pounds per day, but it should be supported with adequate protein (17% at 300 pounds and gradually decreasing to 14% at 900 pounds.

These goals are not that aggressive, what needs to change is the uniformity of the heifers, not the average performance. We need to decrease mortality and poor-doers and simultaneously decrease the range of when heifers conceive and subsequently calve.

Mortality, never a good situation, before beef x dairy crosses became more valuable it was common to protect against death losses by raising a few extra heifers. The current market prices indicate there are no extra heifers. For many producers, the loss of replacement heifers from birth to freshening is not a number focused on. I encourage you to look it up, some dairies find 20% are lost- not all die, but other problems cause too many to be culled.

While we focus on how we can do better with our heifers, realizing how valuable they are today, let's also focus on their genetic merit. Genomic testing their dams and the heifers themselves helps make sure we raise the best out of the best and we get more bang for our buck for our best efforts. Genetic improvement builds in subsequent generations.



Taking good care of your heifers has always been important, but with today's prices it makes more sense, and cents, then ever.

https://dairy.extension.wisc.edu/files/2023/07/Heifer-Reproduction.pdf

Extension
UNIVERSITY OF WISCONSIN-MADISON

May 15
10:00 a.m. – 12:00 p.m.

Marshfield Ag Research Station
208356 Drake Ave N
Stratford, WI 54484

COVER CROP & EQUIPMENT DEMONSTRATION FIELD DAY

UW–Madison Extension is hosting a free cover crop and equipment demonstration field day in Marshfield on May 15.

This field day is designed for farmers, conservation staff, agronomists, crop advisors, and more to:

- See demonstrations of termination of cereal rye cover crop using a roller crimper and planting into rolled cover crops
- Learn how to set up a planter to establish row crops into cover cropping systems
- Learn how cover crops affect the management of nutrients
- Learn how farmers from across the state participating in the Wisconsin Cover Crop Data Network incorporate cover crops into their cropping systems

Agenda

10:00 **Welcome and Introduction**

10:05 - 10:30 **Wisconsin Cover Crop Data Network (5 year overview of the data network results)**
Mrill Ingram, *Michael Fields Agricultural Institute*
Chris Bandura, *Extension Conservation Cropping Systems Outreach Specialist*

Northern Sites Observations
Dan Marzu, *Extension Nutrient & Pest Management Outreach Specialist*

10:30 - 10:45 **Termination Strategies for Cover Crops**
Dan Smith, *Extension Nutrient & Pest Management Outreach Specialist*

10:45 - 11:00 **Nitrogen Management in Rye Cover Crop Systems**
Ashley Waggoner, *USDA Dairy Forage Research Center*

11:00 - 12:00 **Crimping Cover Crops & No-Till Planter Discussion**
Dr. Brian Luck, *UW-Madison Biological Systems Engineering Extension Specialist*

Tips for Helping Cows and Calves Recover After Dystocia

By Sandy Stuttgen, DVM Livestock Educator, UW-Madison Division of Extension
Published by the Wisconsin Agriculturist Magazine

While other articles discuss when and how to deliver calves, this one helps you assist the calf and cow in recovering from a difficult calving (dystocia). Providing post-calving care following dystocia makes a huge difference for the dam and her calf.

Calf Activity and Weak Calf Syndrome

A newborn calf actively shakes its head, snorts, shivers, takes deep breaths and tries to stand. Weak Calf Syndrome occurs after a long labor (over 30 minutes for cows, 60 minutes for heifers) when carbon dioxide builds up in the calf. This leads to poor breathing, slow heart rates, and low internal body temperatures. Weak calves are slow to stand and nurse, often becoming depressed, and many of these calves scour and die within their first week.

Stimulating the Calf

Good mothering stimulates calves. However, exhausted dams may show little interest in their calf. Hydrating the dam reduces her exhaustion and boosts her interest. Offer the dam warm water to drink right after the birth and make it more interesting by mixing in electrolytes or milk replacer. Cows do not like to put their head into deep narrow buckets, so refill a short, shallow bucket until she is satisfied. Pen the dam and calf together until their bond is established.

Sometimes, you need to act as the mom: vigorously towel dry the calf, tickle its nostril with a firm piece of straw, pour cold water in its ear, and turn it from side to side. Salting the calf or sprinkling sweet feed over it will stimulate the dam to lick the calf.

Use Caffeine or a Squeeze to Stimulate the Calf.

Orally giving caffeine perks up dull calves within 15-30 minutes. You can use caffeinated energy drinks – just read the label and give the appropriate dose (100 – 200 mg of caffeine).[1] Use a needleless syringe to gently deliver the dose to the back and left side of the calf's mouth.

A Madigan Squeeze helps a newborn calf anytime in its first two days. This technique involves squeezing the calf's chest for 20 minutes by gently pulling on the trailing end of a soft rope that is looped three times around the calf. A rope halter works well for this. This mimics the squeeze through the birth canal, which helps the calf transition from a sleeplike state in the womb to being active outside. [2] To view a picture of how to place the rope, visit the Iowa Beef Center.[3]

What About Pain Medication?

Consult your veterinarian to determine if pain medication for the cow or calf following dystocia is warranted. UW-Madison Division of Extension research review of flunixin meglumine, meloxicam, and acetylsalicylic acid found only acetylsalicylic acid to have the potential for reducing inflammation and pain following dystocia in dairy cattle.[4]

Provide Colostrum and a Comfortable Environment.

The calf must nurse several times in the first six hours to get colostrum. Hand milk the cow or feed good quality refrigerated or frozen colostrum or colostrum replacer (containing 100-150 IgG per dose) when the nursing quantity or quality is suspect. Milk-based colostrum replacers are preferred over serum-based ones. Mix and feed colostrum replacers exactly as their label indicates. If the calf can't or won't nurse, use a bottle or an esophageal tube.

Whenever possible, and especially after assisted births, soak the newborn's navel in 7% iodine or another disinfectant recommended by your veterinarian. The navel is attached to the liver, and it will wick pathogens from the environment. Keep the calf's environment clean and dry before the navel dries and falls off. Keep stressed calves following a difficult birth dry and warm by providing deep, fluffy bedding that covers their legs and belly when resting.

Give Extra Attention for Recovery.

After dystocia, both cows and calves need hydration, time to bond, and a well-bedded area in which to recover. Talk with your veterinarian about providing caffeine or a Madagan Squeeze to the calf, or pain relief for the cow or calf following a difficult calving.

Citations in order of appearance

[1] University of Minnesota Extension. (n.d.). *Improving calf survival after birth*. Retrieved November 12, 2024, from https://go.wisc.edu/1o31s2
[2]Hanson, M. Weak calves may need a big squeeze. *Bovine Veterinarian*. Retrieved November 11, 2024, from https://go.wisc.edu/7t0k6b
[3] Iowa Beef Center, Iowa State University Extension and Outreach. (n.d.). *Try the Madigan Squeeze*. Retrieved November 11, 2024, from https://www.iowabeefcenter.org/news/MadiganSqueeze.html
[4]Schlesser, H. *NSAID use around calving*. UW-Madison Division of Extension. Retrieved November 25, 2024, from https://go.wisc.edu/641172

Peer reviewed by UW-Madison Division of Extension Agriculture Institute Educators Adam Hartfiel, Ryan Sterry, and Heather Schlesser.

Madigan Squeeze steps.

JUNE DAIRY BREAKFASTS 2025

Friday, May 30 5:30- 9:30 AM	MACCI Dairy Breakfast and Agribusiness Recognitions	Central Wisconsin State Fairgrounds Marshfield, WI 54449	Special Eggs (eggs, hash-browns, mushrooms, onions & ham), cheese, milk, coffee, strawberry sundae and *NEW this year…* pancakes	Adults and youth- $10.00 Ages 6 and under—Free
Sunday June 1 7:00 AM—12:00 PM	Abbotsford Dairy Breakfast	DeJong Dairy 102218 Draper Rd Dorchester, WI 54425	Pancakes, maple syrup, sausages, cheese, butter, applesauce, cookies, juice, coffee, milk, and ice cream	Ages 6 to Adult—$5.00 Ages 5 and under - Free
Sunday June 1 7:00 AM—12:30 PM	Granton Dairy Breakfast	Schilling Farms Luke & Stacy Schilling W3514 Tree Rd Granton, WI 54436	Pancakes, special eggs, sausage, cheese curds, applesauce, ice cream, maple syrup, milk, juice, and coffee	Adults—$8.00 Age 5-12 —$4.00 4 and under—Free
Sunday June 8 7:00 AM—12:00 PM	Neillsville Chamber of Commerce & FFA Dairy Breakfast	Four Star Ag & Four Star Dairy W 4198 Pine Creek Rd Neillsville, WI 54456	Pancakes (plain & blueberry), scrambled eggs, Smith Bros. sausage, cheese curds, applesauce, ice cream, milk, coffee, and juice	Adults—$8.00 Ages 5 to 12—$4.00 Ages 4 and under—Free
Saturday June 14 7:00 AM—11:00 AM	Owen/Withee Days Pancake Feed	Carl Vater Memorial Pavilion 514 Division Street Withee, WI 54498	Pancakes, deluxe scrambled eggs, sausage, cheese, fruit, and beverages. Featuring fresh maple syrup from the FFA school forest!	All 10+ - $10.00 Kids 5-9 - $5.00 4-under - free
Sunday June 15 Father's Day 7:00 AM—12:30 PM	Loyal Dairy Breakfast	Hornland Farm N6952 County Rd K Loyal, WI 54446	Pancakes, Scrambled Eggs, Butter, Maple Syrup, Cheese Curds, Applesauce, Ice Cream, Milk, Orange Juice, Coffee.	Adults—$8.00 Ages 6 to 12—$4.00 Ages 5 and under—Free
Sunday, June 22 7:00 – 12:30 AM	Thorp FFA Dairy Breakfast	Bill and Bridget Ciolkosz Dairy Farm N16329 Koser Ave Thorp, WI 54771	Pancakes, Eggs, Sausage, Cheese Curds and Ice Cream	Free will donation
Sunday June 22 7:00 AM—12:00 PM	Colby Dairy Breakfast	Verhoef Family Farm 225703 Pecan Rd Colby, WI 54421	Pancakes, sausage, applesauce, cheese curds, cookies, milk, coffee, real maple syrup, butter, and Culver's ice cream	$6.00 per plate Kids 5 and under - free
Sunday June 29 7:00 AM—1:00 PM	Greenwood Dairy Breakfast	Phil & Eliza Ruzic Farm N9031 Sidney Ave Greenwood, WI 54437	Pancakes, potato pancakes, eggs, sausage, cheese curds, applesauce, butter, syrup, milk, juice, coffee, water, and soft serve ice cream	Adults—$8.00 Ages 5 to 12—$5.00 Ages 4 and under—Free

Natural Ventilation in Dairy Buildings

Written by: Nesli Akdeniz, Aerica Bjurstrom, and Healther Schlesser

INTRODUCTION

Ventilation is vital in dairy barns for maintaining air quality, removing heat and moisture, and providing a comfortable environment for cows. Ventilation can be achieved through mechanical or natural systems that utilize thermal buoyancy and wind pressure. Natural ventilation has long been the predominant choice in the Upper Midwest, a region known for its hot and humid summers and cold winters. Roughly 85% of free-stall dairy barns in Wisconsin and surrounding states rely on natural ventilation. These barns use sidewall curtains and ridge vents to facilitate airflow without using ventilation fans. When properly designed and managed, natural systems offer energy efficiency across seasons. However, natural ventilation is weather-dependent, and barns need to be carefully designed to function in both summer and winter extremes.

Natural airflow patterns vary with weather conditions. Wind-driven flow tends to dominate in mild and hot weather. On a breezy summer day, a properly oriented barn with open side curtains can achieve 40–60 air changes per hour (ACH)- enough to keep interior conditions near ambient. In contrast, during hot days with little wind, ventilation relies primarily on thermal buoyancy, which is less effective compared to wind pressure.

Research shows that cows benefit greatly from air movement at their level: a minimum of about 1 m/s (200 ft/min) air speed over cow resting areas is recommended for cooling [1]. Many naturally ventilated barns achieve this by running large ceiling fans or basket fans above stalls in summer (Figure 1). On moderately hot days with wind, inside temperatures often run only 1–2 °F higher than outside or can be cooler in shaded areas [2].

Figure 1. A naturally ventilated dairy building equipped with circulation fans and sprinklers (Photo: Nesli Akdeniz)

Moving air alone may not be enough when temperatures rise into the 90s °F. In these conditions, cows benefit greatly from evaporative cooling. Most naturally ventilated barns use low-pressure sprinkler lines along the feed bunk to periodically wet cows.

Large water droplets are sprinkled on cows' backs for 1–3 minutes, followed by a 5–10 minute rest period. The water soaks through to the skin, and as it evaporates- with the help of circulation fans- it draws heat away from the cow's body. This can lower skin temperature by several degrees and help reduce panting. Using low-pressure sprinklers that produce large droplets is important since fine mist in humid conditions can raise barn humidity without effectively cooling cows.

DESIGN CONSIDERATIONS

BARN ORIENTATION AND SITE LAYOUT

Barns should be positioned to take advantage of prevailing winds and minimize direct sunlight exposure. In the Midwest, a common guideline is to orient barns east-west (lengthwise) so the long sides face north and south. This orientation offers two key benefits: (1) Prevailing summer winds from the south or southwest can flow directly across the barn's width, improving cross-ventilation. (2) High midday sun hits the roof instead of shining into the sidewalls, helping to keep the interior cooler. In contrast, a north-south orientation positions one long wall to face west, exposing it to direct afternoon sunlight and raising the barn's temperature.

Site placement is equally important. A naturally ventilated barn needs unobstructed wind access. Tall structures or trees nearby can create wind shadows and reduce airflow. A general rule is to place a barn at least 100 feet or about 10 times the barn's height away from upwind obstructions [3]. For example, if a silo or machine shed is to the south or west, it should be set well back to allow wind to reach the barn. Poor wind access is a common reason natural ventilation fails. Planning layouts with wind in mind, such as aligning multiple barns in parallel with adequate spacing, can improve airflow across the entire site.

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SIDEWALL HEIGHT AND OPENINGS

High sidewalls (14–16 feet) with large adjustable openings provide the inlet area needed for airflow [4]. A typical design is a curtain sidewall: the lower 3–4 feet is a solid knee-wall (for structural strength and winter protection), and above that, a fabric or panel curtain extends up to the eave. In warm weather, the curtain can be rolled up entirely, creating an opening often 10–12 feet high along the entire length of the barn. In cold weather, the curtain is mostly closed to block the wind, but some gap is usually left open at the top to allow continuous fresh air entry. For instance, a common winter practice is to lower curtains but leave a 6-inch slit at the eave on each side. Cold air trickles in through this slot and mixes with warmer barn air, maintaining ventilation without creating a direct draft on cows. A design tip is to provide eave overhangs above sidewall openings (typically 2–4 feet) to shield the opening from rain and snow. These overhangs also shade the opening and can help direct incoming air slightly upward (Figure 2). The idea of automating sidewall curtains is becoming popular as temperature and wind sensors are being developed to adjust the curtain position gradually and maintain target conditions.

Large end-wall openings (doors) also help ventilate dairy buildings by enhancing the tunnel effect. However, end-wall openings alone are insufficient for long barns; continuous side openings are key for cross-ventilation.

Sidewall curtains should extend the full length of the barn, including through the area by the holding pen or parlor exit, so that no section of cows is in a stagnant corner.

Figure 2. Split sidewall curtains help regulate airflow rates without causing a draft for the cows. (Photo: Nesli Akdeniz)

ROOF PITCH AND RIDGE VENT

Roof pitch describes how much the roof rises vertically for every unit of horizontal run. A steeper roof pitch improves natural ventilation by funneling rising air toward the ridge. A roof slope of 4:12 (about 18°) is often recommended for naturally ventilated barns. If the roof pitch is shallower (e.g., 2:12), warm air may spread out and stagnate under the roof instead of flowing upward.

Another benefit of the steep roof pitch is that it is less prone to snow blocking the ridge in winter.

A common design is a continuous open ridge that runs the entire length of the barn, often 12–24 inches wide, depending on the barn's width (Figure 3). For example, a 100-ft-wide barn might have roughly a 15-inch continuous opening at the peak to allow warm air to escape.

If a ridge cap is installed to keep rain out, it should be elevated above the roof. Recommendations state that the gap between the ridge cap and the roof should be approximately 3/4 of the ridge opening width. This ensures that the opening is not blocked by the cap.

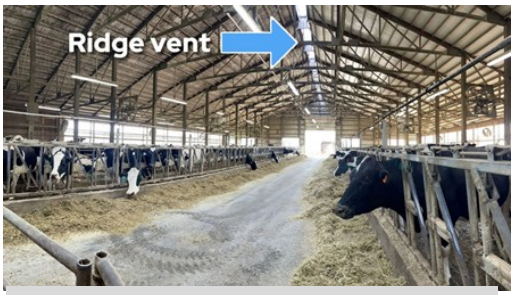

Figure 3. The ridge vent is important for removing heat, moisture, and gases. It is the barn's chimney. (Photo: Nesli Akdeniz)

It is known that an undersized or poorly designed ridge vent leads to condensation in winter. Many older barns had minimal ridge vents (or cupolas were spaced out) and experienced condensation dripping on cows – newer designs correct this by providing a continuous vent.

BARN WIDTH AND INTERIOR LAYOUT

Barn width affects how well natural ventilation can reach the center. Traditional naturally ventilated free-stall barns were designed as 2-row or 4-row structures (40–60 ft wide) that could be easily swept by cross breezes. Modern large dairies often build 6-row barns (~75–100 ft wide) for efficiency, but wider barns inherently get less wind reaching the middle. Studies have quantified that moving from a 4-row to 6-row configuration can reduce natural ventilation effectiveness by around 30%. Strategically placing large fans in the center of the barn helps draw fresh air into areas that might otherwise experience stagnant conditions. In practice, many farms with 8-row or larger (>120 ft) barns have switched to mechanical ventilation (e.g., cross-ventilation). Thus, it is better to keep barn widths moderate or be prepared to supplement with fans for a fully naturally ventilated building.

Inside the barn, the layout should minimize internal obstructions to airflow. Any interior equipment, such

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as milking robots or calf pens, should not block the path between the sidewall inlet and ridge vents. If an object (e.g., a stack of hay bales) needs to be inside the building, it should be aligned parallel to airflow, not across it.

FABRIC BUILDING WITH NATURAL VENTILATION

Fabric buildings are a great example of naturally ventilated buildings. An example is shown in Figure 4. One of the most noticeable features of fabric buildings is how quiet they are compared to mechanically ventilated barns. Without the constant hum of high-capacity ventilation fans, the environment feels calmer. The high ceilings and abundant natural light create a bright, open atmosphere that feels more like a greenhouse than a traditional barn. While circulation fans are still used to maintain even temperature distribution, particularly in areas where cows rest, their operation is less intrusive [5].

Figure 4. Naturally ventilated fabric dairy buildings. Note the steep 6:12 roof pitch. (Photo: Nesli Akdeniz)

LOW ELECTRICITY USE

Naturally ventilated barns offer low electricity use. Mechanical ventilation systems, such as tunnel or cross-ventilation, rely on numerous large fans. A cross-ventilated barn for 1,000 cows might operate 40 or more exhaust fans, each consuming substantial power throughout most of the summer. In contrast a naturally ventilated barn uses only circulation fans with smaller motors. In a climate such as Wisconsin, naturally ventilating a 1,000-cow barn can cost roughly half as much as mechanical ventilation [6, 7]. Relying less on powered equipment reduces vulnerability to power outages and mechanical breakdowns. In that sense, natural ventilation offers safety and resilience.

Acknowledgment

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References

1. Reuscher, K.J., Cook, N.B., da Silva, T.E., Mondaca, M.R., Lutcherhand, K.M., and Van Os, J.M.C. 2023. Effect of different air speeds at cow resting height in free stalls on heat stress responses and resting behavior in lactating cows in Wisconsin. J Dairy Sci 2023, 106 (12): DOI: 10.3168/jds.2023-23364.
Dairyland-Initiative, 2023. Heat Abatement and Ventilation of Adult Cow Facilities. Available online: https://thedairylandinitiative.vetmed.wisc.edu/home/housing-module/adult-cow-housing/ventilation-and-heat-abatement/ (accessed on 5-21-2024).
House, H.K., 2015. Ventilation options for free-stall barns. Available online: https://files.ontario.ca/omafra-ventilation-options-free-stall-barns-15-017-en-aoda-2020-04-27.pdf (accessed on 3-31-2025).
Graves, R., 2023. Natural ventilation for freestall barns. Available online: https://extension.psu.edu/natural-ventilation-for-freestall-barns (accessed on 3-31-2025).
Akdeniz, N., 2025. Naturally ventilated fabric dairy buildings are practical and cost effective. Available online: https://www.wisfarmer.com/story/opinion/columnists/2025/01/21/let-nature-cool-cows-cheaply-in-fabric-dairy-building-this-summer/77836909007/ (accessed on 3-31-2025).

1. Jiang, L., Yi, Y., and Akdeniz, N. 2024. CFD simulations of supplemental cooling techniques in cross-ventilated dairy buildings and associated greenhouse gas emissions. Comp Electron Agr 2024, 216: p. 108480. DOI: 10.1016/j.compag.2023.108480.
Jiang, L., Yi, Y., and Akdeniz, N. 2024. Energy-saving cooling strategies in tunnel-ventilated dairy buildings: Computational fluid dynamics (CFD) simulations and validation. Smart Agric Technol 2024, 9: p. 100576. DOI: 10.1016/j.atech.2024.100576.

Upcoming events will be posted on our website
https://clark.extension.wisc.edu/
and Facebook page
https://www.facebook.com/ExtensionClarkCounty

Watch for news releases in local papers and on the radio promoting events

Clark County Extension Office will be closed

Tuesday, May 20th

Monday, May 26th

Friday, July 4th

CONSERVATION CORNER

Fred Subke, CCA—Land Conservationist

Hunter Lemler, CCA—Engineering Technician

Jesse Susa - Conservation Agronomist

Tiffanee Tesmer - Administrative Assistant

NMP was due April 1

Have you submitted yours to Land Conservation Dept?

Late fees will be assessed on May 15

Cover Crop Cost Sharing

The Clark County Land Conservation Department (LCD) has cost sharing available to the tune of $25 per acre for putting down a cover crop.

Must sign up before planting and need to have nutrient management plan for the fields first.

For more information contact LCD at 715-743-5102.

126399

Clark County Land Conservation Department

Great Plains 10 ft No-Till Drill 7.5" rows

RENTAL RATES

$75 transport / setup fee

PLUS $8 per acre (Minimum $100)

Large and Small seed box, which can be ran at the same time

Minimum horsepower needed: 75 hp with single hydraulics

You or your Crop Advisor may contact us by phone or email:

Clark County Land Conservation Dept.

Ph# 715-743-5102 / FAX# 715-743-5108

Jesse Susa Clark County Land conservation Agronomist

Jesse.susa@co.clark.wi.us / 715-743-5285

INTRODUCTION

Recently, there has been an outbreak of highly pathogenic avian influenza (HPAI) in a commercial poultry flock in eastern Wisconsin. In response to this outbreak, a great deal of time and effort will be spent quarantining and testing adjacent flocks, and flocks testing positive are depopulated. This virus does not discriminate between large or small flocks, or husbandry type. In the past, large commercial flocks were infected, as well as small hobby flocks. In response to confirmed AI outbreaks, many countries refuse to allow poultry and egg shipments from affected states. Because of the public health and economic consequences, it is important for **all** poultry owners to do everything they can to prevent infection in their flocks.

Avian influenza is caused by a virus. It is not uncommon for wild birds (esp. waterfowl and shorebirds) to carry this virus. As these birds migrate, influenza can spread long distances quickly. The wild birds often don't show any signs of sickness, but continue to spread the virus in their feces. Domestic poultry (including chickens, turkeys, pheasants, ducks, geese, quail, and guineafowl), as well as pet birds, can be infected by exposure to wild waterfowl, or their droppings. This exposure could be to the wild birds or their feces directly, or exposure to contaminated shoes, clothing, crates or other equipment.

BIOSECURITY

While biosecurity is always important, bird owners should be especially vigilant at this time. The United States Dept. of Agriculture (USDA) has a web site with a great deal of information about biosecurity for birds: **https://www.aphis.usda.gov/livestock-poultry-disease/avian/defend-the-flock ↗**

Biosecurity means doing everything you can to keep diseases out of your flock.

"Bio" refers to life, and "security" indicates protection. Biosecurity is the key to keeping your poultry healthy. It is what you do to reduce the chances of an infectious disease being carried to your farm, your backyard, your aviary, or your pet birds, by people, animals, equipment, or vehicles, either accidentally or on purpose.

SUGGESTIONS TO IMPROVE BIOSECURITY

Isolate your flock from other birds, both wild and domestic

- Keep feed in covered feeders, preferably inside the house to discourage wild birds from feeding
- If birds are allowed outdoors, eliminate standing water that may attract wild birds
- Screen windows to make them bird-proof
- Eliminate nesting sites for sparrows and other common birds
- Change shoes / have dedicated footwear or disposable boots for use in your facilities
- Clean and disinfect any equipment before it enters your facility

Keep your facilities free of rodents

- Eliminate nesting sites for rodents (excess equipment, covered areas, etc.)
- Store feed in rodent-proof containers
- Keep open feed in hanging feeders
- Keep surrounding areas clean and keep grass mowed short or consider a gravel buffer strip
- Consider traps, baits, etc. as necessary

Don't spread disease to your birds

- Although visiting other flocks, bird shows, etc. can be fun, consider the risk
- If you are around other birds, shower and change clothes before attending to your birds
- Source new birds from clean flocks
- If possible, all-in, all-out management is best, rather than mixing birds of different ages

SIGNS OF AVIAN INFLUENZA

There are numerous strains of AI virus. These are usually classified as LPAI (low pathogenic AI) or HPAI (highly pathogenic AI), depending on the severity of their effects. Similar to human influenza viruses, AI viruses mutate frequently, so pathogenicity can change over time.

LPAI strains may cause very few signs in birds, and may go unnoticed. They usually cause mild to moderate respiratory illness and there is often a decrease in egg production, if the birds are laying. Secondary infections may be a problem in these birds as well. LPAI may be discovered after an infection occurred by blood-testing for antibodies against AI.

HPAI strains are quite severe. Birds die quickly without showing signs. There is often discoloration and swelling of the comb, wattles, and hocks, as well as respiratory illness and diarrhea. Internally, there may be hemorrhages in various organs. Mortality may approach 100%.

AVIAN INFLUENZA IN HUMANS

Although it is rare, humans can get Avian Influenza from birds. For the past decade, a strain in Asia, Europe, and Africa (H5N1) has infected humans and caused a number of deaths. In 2025, H5N1 was detected in dairy cows and poultry in the United States. **The Centers for Disease Control and Prevention maintains a current summary of cases in the U.S ↗**.

DATCP has more information for poultry owners at their web site: **https://datcp.wi.gov/Pages/Programs_Services/AIInformationResources.aspx ↗**

If a large number of your birds are sick or dying, contact the Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) at 608-224-4872 (weekdays); 1-800-943-0003, select option 2 and state that you are reporting a potential animal disease; or via email at **datcpanimalimports@wisconsin.gov**

If you notice dead wild birds, contact the Wisconsin Department of Natural Resources at 608-267-0866 , via Email **DNRWildlifeSwitchboard@wisconsin.gov** , or make a report online with the **Sick or Dead Bird Reporting Form ↗**.

Importance of Forage Growth Stages When Grazing Cattle

Written by **BETH MCILQUHAM**

Introduction

Grazing cattle sounds so simple. The forage grows, the cattle eat the forage, and it all ends with a "happily ever after." Unfortunately, it's not as simple as it sounds. To maximize cattle performance while grazing, producers must pay attention to the forage itself and how it can affect the grazing animals.

Growth Stages of Forage

To begin, let's break down forage growth into three stages. Understanding these is the first step in attaining effective grazing management. The three growth stages of forage are:

- **Stage One:** The plant must have time to rest and regrow. While in this stage, plants use carbohydrates that are stored in the roots to promote growth. This stage occurs right after grazing or clipping and can also occur when coming out of dormancy in the spring or with newly emerging grasses.

- **Stage Two:** The plant's quality maximizes. Effective grazing management extends this phase as long as possible. Here, the plant has enough leaf surface area for photosynthesis, allowing it to grow without using carbohydrate reserves in the root.

Stage Three: The plant begins reproduction and will start to set seed. At this point, the plant's yield will be higher than ever, but the quality is low because of the higher fiber concentrations, lower crude protein, and higher stem-to-leaf ratios.

How Forage Growth Stages Influence Cattle

When cattle nutrition requirements aren't met, performance is hindered, and profits are lost. Grazing cattle may need to be supplemented with additional feed to meet energy and nutrient needs when forage quality is poor or in short supply. When the quality of the forage is adequate, supplementation may not be needed, aside from mineral, and can help reduce production costs. Forage in stage two is ideal because it is more efficiently digested by the rumen. The higher forage quality results in maximum intake, which increases performance in the herd.

Forage in stage three is less ideal for grazing cattle because the fiber content is high and quality is lower, which slows digestion in the rumen and reduces available energy. Therefore, cattle will consume less, and their performance will decrease. Lastly, stage one is not ideal because when the grass is too short, cattle will struggle to consume enough forage to perform. Remember, cattle graze by wrapping their tongue around the grass and ripping it. In grazing situations where the grass is too short, it will be difficult for cattle to consume sufficient forage. Grazing forages too early and too short also stresses the plants and reduces long term productivity of the stand. **Figure 1 provides a visual summary of how forage growth stages can influence cattle**.

Other Benefits of Effective Grazing Management Strategies

Creating resilient plants is one of the largest benefits of effective grazing management. The best way to do this is to maintain energy reserves, often stored in the roots of plants. After cattle graze, the plant must use its stored energy to grow until the surface area of the leaves is large enough to photosynthesize enough energy on its own. If a plant does not have enough energy in the root reserves to grow, it will become stressed, weak, and die. Overgrazing can deplete the root energy reserves to a point where individual forage species struggle to persist, and entire pastures are left vulnerable to environmental stressors, such as extreme weather. Over time, the composition of stressed pastures will shift toward a lower quality forage, further perpetuating the problem. Managing to avoid overgrazing maintains high-quality forage for the long term.

Once you've fostered resilient plants through effective grazing management, some other benefits you will see include:

- Increased forage utilization
- More forage to be harvested for extreme weather months
- Maximized efficiency of pastures
- Better distribution of urine and manure

Summary

In the end, grazing management can help your cattle achieve maximum performance, increase the efficiency of your pastures, and, ideally, improve your bottom line. The best way to begin is to introduce short grazing periods and long periods of rest on your pastures. Utilizing a rotational-type grazing management strategy is one of the most common ways to do this. Although grazing cattle efficiently takes management and preparation, it just may lead to that "happily ever after."

References

Melvin, K. and Mason, K. 2021. Grazing Management Principles for Beef Cattle. University of Tennessee Institute of Agriculture. **https://utbeef.tennessee.edu/wp-content/uploads/sites/127/2021/11/W1030.pdf**

Bates, G. 2022. Forage Management: Smaller Pastures = Better Pastures. University of Tennessee Institute of Agriculture. **https://utbeef.tennessee.edu/forage-management-smaller-pastures-better-pastures/**

National Academies of Sciences, Engineering, and Medicine. 2016. Nutrient Requirements of Beef Cattle: Eighth Revised Edition. Washington, DC: The National Academies Press. **https://doi.org/10.17226/19014**.

Upcoming Meetings/Events

Make sure to listen to WCCN and WAXX for any cancellations

DATE	EVENT	LOCATION	TIME
May 15th	***Cover Crop & Equipment Demo Day***	Marshfield Ag Research Station 208356 Drake Ave N Stratford, WI	10:00 AM—Noon
June 25, 2025	***June Dairy Recipe Contest***	Loyal City Hall Loyal, WI	6:30 PM
August 6-10	***Clark County Fair***	Clark County Fairgrounds Neillsville, WI	Opens at 8:00 AM daily

Volunteers & Superintendents Are Needed For The Clark County Fair

Adult and older youth volunteers are needed for the 2025 Clark County Fair August 5th—10th.

Help is needed to check in projects, scribe, organize projects for display, assist with judging as needed, as so much more!

If you are interested in being a volunteer , please contact Brittney Lowry—Clark County Fairboard or call the Extension office and we will connect you with a Fairboard member.

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