EXTENSION
VIEWS
A Product of Extension Clark County

In this issue: .....March/April 2023

Extension
UNIVERSITY OF WISCONSIN-MADISON
CLARK COUNTY

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Questions from My Desk

What is the Value of Reducing Erosion?

Richard Halopka, CCA
Senior Outreach Specialist
UW-Madison Division of Extension Clark County

University of Wisconsin Soil Scientist Francisco Arriaga has determined it will require a minimum of 180 years for nature to reproduce 1 inch of topsoil. Topsoil that encompasses the area of one acre (43,560 square feet) at a depth of 1 inch weighs 164 tons. Arriaga determined the value of soil lost from erosion at current fertilizer prices equals $8.80 per ton. An acceptable soil loss is 5 tons per acre. Visualize the thickness of a dime across one acre, that depth equals 5 tons per acre and a $44 per acre loss. If soil eroded at the depth of 1 inch across one acre the value of nutrients lost would be $1400 per acre and require 180 years to be restored. This is just the loss of nutrients and doesn't consider the loss of soil structure or soil biology.

The basics for improving soil health are providing food, shelter, and an environment that will allow the soil critters to multiple and flourish. Diverse rotations that include annual and perennial crops, plus the addition of cover crops will provide live roots in soil for a greater period. This will help stabilize soils preventing erosion and provide food for your soil critters. Reducing tillage will improve soil structure and prevent reductions in your soil critter population. Residues will feed soil critters, protect the soil surface from rainfall impact, and improve water infiltration, slow water runoff, and moderate soil temperatures. Integrated pest management will reduce the use of pesticides. Pesticides may be used when an economical threshold is attained, protecting natural predators and your soil critters. Nutrient management will account for available on farm nutrient credits (manure and legume), potentially reducing purchased fertilizer.

Improving soil health is a journey not a destination and will require the due diligence of farmers for many years. The goal is to leave the farm (soil) in a better condition than the day you began.

If you have questions on improving soil health or crop production please contact richard.halopka@wisc.edu or 715-743-5121.

This newsletter is mailed to approximately 1,400 farmers and agriculture businesses in Central Wisconsin at a cost of .70 per newsletter. County budgets are tight and each department has been asked to reduce expenses. If you would like to view the Extension Views newsletter online versus receiving a paper copy please contact the UW-Extension Office at 715-743-5121 / mariah.stange@co.clark.wi.us. You can view the newsletter on our webpage at: https://clark.extension.wisc.edu/extension-views/ Thank you for considering this option!

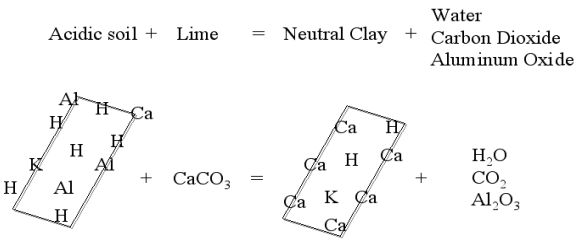
Should I use Pell Lime or Liquid Lime?

Richard Halopka, CCA, Senior Outreach Specialist
UW-Madison Division of Extension / Clark County Crops & Soils

I have rented land and some owned cropland and the pH is questionable, with high prices for inputs I was thinking of applying 200 pounds of pell lime or a liquid lime product on some fields. Is this a good idea?

Before answering the question, we need to review a few things related to your crop fields. First, when did you last take a soil sample? If it has been more than 4 or 5 years, you need new samples taken to talk about making management changes. Second, what is the current pH of your fields? How much lime is required to correct the pH in these crop fields? The third point is you need to understand how lime corrects pH, please see figure 1.

Figure 1. How lime neutralizes acidic soil



January 1999, Noble News & Views

When testing soils pH, stands for parts of Hydrogen (H). Therefore, the amount of H present in your soil sample will determine the acidity or neutrality of your soil. If you want to correct pH to plant a crop like alfalfa, which will require a pH of 6.8, agriculture lime will provide the best economical choice to correct pH. From figure 1, it is the carbonate fraction of the lime component that will chemically release H from the soil profile, not the calcium or magnesium fraction of lime. From research and science, we know carbonate is required to neutralize soil solution and calcium or magnesium then replaces H on our soil profile (see figure 1).

Soil acidity or neutrality is not a one point to the next point, the difference between a 6.2 and 6.3 pH is tenfold. Therefore, at the end of the day, it will take many carbonates and time to correct pH.

Now we can talk about products. Pell lime will cost around $250.00 per ton or more, Dolomitic lime with 80-89 fineness will be around $50.00 per ton. High calcium lime may be a little higher if you choose that product. Dolomitic lime, high cal lime, or pell lime will reduce acidity of soil.

To reduce acidity or to attain a neutral soil pH, generally requires a ton or more of lime per acre to neutralize an acid soil. If we use one ton of dolomitic lime per acre with an 80-89 mesh (fineness), 880 pounds of carbonates are supplied to the soil profile along with 440 pounds of calcium and 440 pounds of magnesium. If you choose, to use high calcium lime then 760 pounds of carbonates were supplied to the soil profile along with 760 pounds of calcium.

Now, how many carbonates does 200 pounds of pell lime add to the soil profile? High cal is pelletize to be easily mixed with fertilizer. Thus, the reason for the higher cost. As products are refined to make it easier to use, cost will generally be greater. Therefore, 200 pounds of pell lime will add 76 carbonates and 76 pounds of calcium. Does pell lime work quicker than agriculture lime? No. It requires about the same amount of time working with soil biology and the reaction will remove a few H from the soil profile.

Bottom line, plants may respond to the application, depending on the current pH of your soil, however the cost of the product may not capture an economic return compared to an agricultural lime application.

Cost of 200 pounds of pell lime is $25.00 per acre and you will remove H at the rate of the 76 carbonates applied to the soil. Lime applied at one ton per acre will cost $50.00 per acre and 880 carbonates are supplied into the soil profile, removing H from soil profile. In addition, the benefit is correcting the soil for a longer period. Lime is a long-term investment in crop production and it will require a larger outlay of cash for the application, but once pH is corrected, in our clay/loam soils the pH may be maintained for a number of years.

My agronomist is marketing a liquid lime product and claims it is more efficient than Ag lime for correcting pH. Is this true?

After reviewing the information you provided, along with a request for a detailed label, the company has not responded. Let us review A2809 and to answer the question, why do we use Ag lime to correct pH? See figure 1.

Reviewing the limited label provided, this product contains 20% calcium, 24% calcium carbonate, with a 14% calcium equivalent. From research and science, we know carbonate is required to neutralize soil solution and calcium or magnesium then replaces H on our soil profile (see figure 1). The literature on the label repeatedly mentions adding calcium to your soil and does refer to basic cation ration saturation of calcium on 60-75% of the sites in the soil profile. Therefore, the focus is adding calcium, not correcting pH.

The label of this product recommends 3-5 gallons per acre, no weight of the product is listed on label, so let us estimate it weighs 12 pounds per gallon, we apply 5 gallons per acre, the product is 24% calcium carbonate, so let us do the math.

12 pounds per gallon x 5 gallons per acre x 0.24 per cent of carbonate = 14.4 pounds of carbonate were added with one application, an extremely small amount of carbonate and very little pH correction.

Continued on page 3

(Lime… continued from page 2)

The label provides a focus of added calcium. Yes, I have used products like this over the years. Not to improve pH, but in specialty crops grown in low pH environment, and the crop has a high calcium requirement. Will the product work? Yes, it will. Is it economical? Probably not in a conventional cropping system. Will it improve pH in your soil? Very little. Will the crop benefit from the application? Yes, it will. Is it economical? No, unless it is a specialty crop situation as mentioned earlier.

If neutralizing soil is the goal, use an aglime of your choice. Pell lime and liquid lime will provide some correction at a much higher cost per acre and then will there be an economical return on investment. OK, if you sleep better at night using pell lime or liquid lime, then buy the product. However, when managing your farm the old methods may be the soundest and provide the best economical return, even though it will require time. Remember Rome wasn't built in a day and you will not change soil pH in a day.

If you have questions on correcting soil pH or other agronomy questions please contact our office at 715-743-5121 or email richard.halopka@wisc.edu.

ARTIFICIAL INSEMINATION COURSE

This will be a hybrid course with both online sessions and in-person sessions. Attending all sessions is required to complete this course.

Evening classroom sessions will occur via Zoom on April 18th and 19th from 7 - 9 pm.

In-person sessions will occur on April 27th from 4 - 6:30 pm and on April 28th from 9am to noon.

If needed, attendees are responsible for their overnight accommodations in the Dorchester area (not included in the registration fee for this program.)

Fee: $95.00 per person

Location for April 27th and April 28th in-person session:
Bach Farms
W861 Co Rd A
Dorchester, WI 54425

Registration:
https://go.wisc.edu/ai

Beef Cow-Calf Workshop and Bull Test Open House scheduled for March 11 at UW-River Falls

Written by WILLIAM HALFMAN

Genetic selection and the development of replacement heifers are building blocks to the foundation of a cow-calf herd's ability to produce uniform, quality calf crops year after year. The St. Croix Valley Bull Test, UW-Madison Division of Extension and UW- River Falls are teaming up to host a workshop for cow-calf producers on **March 11th at the UW River Falls Mann Valley Farm.**

The Mann Valley Farm is located at: 129 S Glover Rd, River Falls, WI 54022

Discussions on understanding EPDs and genomics, and management for developing replacement beef heifers will be led by Extension Livestock Educators and Outreach Specialists. Attendees will also have an opportunity to view the bulls in this year's St. Croix Valley bull test, pedigree and EPD information about them will be available. The bull sale will be held April 15th at the same location.

The presentations will begin at **10 am**, with lunch at noon and an opportunity to see the bulls on this year's test following lunch. **Pre-registration is encouraged to help with meal planning and can be accomplished by emailng david.james@uwrf.edu or leave a message at 715-425-4838 by March 5th.**

Improving Soil Health on Your Farm

Richard Halopka, CCA
Clark County UW-Extension Crops & Soils Agent

Many articles have covered presentations on how farmers have improved soil health on their farm. The speaker provides the results of many management changes on their farm, but very little is mentioned as, where did they started? So, how can a farmer improve soil health?

First and foremost forget buying a product or a piece of equipment. Neither of these will improve soil health. Improving soil health begins with an attitude and a management change from the farmer.

Soil health is a buzz word today, but really it has been around for many years and the new name has rekindled an interest with farmers. So what are the key management components these farmers implemented to improve soil health on their farm? Here is a list of the mentioned management changes.

- Diversity; farmers reviewed their operation and diversified their operation from 1 to 2 crops to multiple crops and most added a perennial crop with livestock.
- Reduce tillage; all have decreased tillage activity, some became no-tillers. Understand, to improve soil health you must increase stored carbon in the soil profile. Each tillage pass releases stored carbon and no-till is tillage; however, it disturbs a very small area in a field compared to multiple tillage passes per season.
- Live roots; to improve soil health you must have live roots in the soil for a greater part of the growing season. Live roots feed the soil microbiology (soil critters) and improved living conditions benefits your soil critters. Cover crops will contribute to this concept along with perennial crops. Live roots in the ground share some sugars to feed your soil critters.
- Residue on the surface; residue on the soil surface will feed your large soil critters. Residues will feed worms and improve soil structure as they till your soil and digest residue. Worms thrive when residue and live roots are present. Residue will also protect the soil surface from rain splash impacts and extreme temperature changes from cool mornings to very warm afternoons. Why is this important? Remember your worms and the conditions they work best. Moderate temperatures in the soil profile will increase their activity.
- Long term investment; this will be long term process. It is hard to set a timeline, but each year you implement these management practices you will see an improvement in soil health.
- Feed your crops; improving soil health will require some investment. If pH is low, lime will be required as soil critters prefer a neutral soil. Plants require 17 essential nutrients to grow, improving soil health doesn't make nutrients magically present, and you may have to add some nutrients (fertilizer) required for your crop.

Soils are alive, dynamic, resilient, and in some state of flux (never in balance). So what are some noticeable results when soil health improves on your farm?

- Reduced soil erosion. With improved soil health, your management will reduce potential soil loss from wind and water erosion. The farmer leaves residues on the surface and/or a live crop growing in the field for a greater period of time during the growing season. Stabilizing both, the soil surface and sub-surface.
- It will take years, but as stored carbon level increases in the soil profile, the physical, chemical, and biological components of your soil will improve.
  - The **physical** component is comprised of four areas. **Texture** is the relative amount of clay, sand, and silt present in a soil. Soil health has little influence on soil texture. **Structure** is the general appearance of the soil related to shape, size, and pore space. Soil health will improve your soil structure and stability. **Bulk density** is the weight for a known volume of soil; as weight per volume decreases soil health has improved. **Color** is related to parent material and organic matter (OM) present. With improved health, OM will increase.
  - The **chemical** component is pH and plant available nutrients in the soil. This chemical component is determined from a soil test. Improving soil health will allow a greater number of cations to be present in a soil volume.
  - The **biological** component is the interaction between the living, the dead, and the very dead in soil. A teaspoon of soil has more life (living critters present) than the human population of the world. Soil critters require decaying residues (including other dead critters) and live roots to survive. Providing food and shelter will allow the biological component of soil to multiple and flourish. If you build a house for the soil critters they will come and flourish.

First and foremost, remember there are no silver bullets to improve soil health. Purchasing a product (biologicals) or piece of equipment will not cure years of soil abuse. The farmer must be comfortable making management changes, or there will be very little improvement in your soil.

Soil health is a combination of good structure, availability of essential nutrients, and a diverse group of living critters. Currently there is no system in place to measure soil health, although a soil test can measure organic matter (OM), pH, and the present level of plant available nutrients. There are many tests promoted to measure soil health, however, research needs to be completed to really answer "did soil health improve?". Improving soil health increases the nutrient holding capacity of your soil and, with adequate environment during the growing season, may increase yields.

Improving soil health is a journey on your farm, not a destination, and will require the due diligence from you the farmer for a number of years. The goal is to leave the farm (soil) in better condition than the day you began farming.

If you have questions on improving soil health or crop production please contact richard.halopka@wisc.edu or 715-743-5121.

CWFC MEETING

Central WI Forage Council Educational Meeting

Where: Loyal City Hall
When: April 18, 2023
Time: 10:30-2:30

Lunch provided with free will offering

Topics:
Selecting the right corn hybrid for silage
Feeding Different Corn Silage Hybrids
Matt Lippert's South America Ag Travel Slides
Update From Midwest Forage Association

CCA CEU's will be applied for the meeting

Did You Know?

Wisconsin is **one of the top states in the production of the major processing vegetables**. In 2022, Wisconsin grew 6.26 million cwt of snap beans, 1.60 million cwt of carrots, and 1.09 million cwt of green peas. The state ranks third in the nation in potato production, harvesting potatoes on 66,500 acres in 2022.

Extension Agriculture virtual education offerings

Your farm-ready research! Webinars available.

https://extension.wisc.edu/agriculture/farm-ready-research/

COW-CALF WORKSHOP

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SATURDAY, MARCH 18, 2023 10:00 - 12:30 PM
CONCLUDES WITH LUNCH

Location:

KNUTSON FAMILY FARMS
E5166 1370TH AVENUE
RIDGELAND, WI 54763
WITH OVER 30 YEARS OF GENETIC IMPROVEMENT, WE RAISE REGISTERED ANGUS THAT ARE PROFITABLE AND PREDICTABLE.

RSVP Required by 3/13:

SUE GLASER
715-491-3904 (TEXT OR VOICEMAIL)
RSVP BY MARCH 13

(Program may cancel due to low enrollment or bad weather. Those registered will be called if canceled.)

Topics Include:

BIOSECURITY BASICS - WORKING FACILITY CONSIDERATIONS
THE SELF-ASSESSMENT GUIDE - HERD HEALTH

Speakers:

University of Wisconsin-Madison Division of Extension Educators:

BILL HALFMAN
BEEF OUTREACH SPECIALIST

SANDRA STUTTGEN, DVM
TAYLOR COUNTY

Sponsors:

NORTHERN WISCONSIN BEEF PRODUCERS
DONATIONS TO COVER LUNCH COSTS APPRECIATED

EARN ONE BQA CREDIT FOR ATTENDING.

Nutrient Management Planning

This course is designed to develop a nutrient management plan that will meet the NRCS 590 Standard requirements. Participants will enter soil test information into the software program, SNAP Plus, and will develop a plan using the data. Subjects include conservation plans, field mapping, soil test analysis, manure management and crop selection and requirements.

It is highly recommended that you have current soil tests no more than four years old, sampled on a one sample per five acre basis and analyzed by a DATCP approved lab.

Soil Testing Payments: Participants will receive reimbursement for up to $750 of eligible soil testing costs. (Please contact your local County's Conservation Dept. with questions.)

These courses are in partnership with the Marathon, Clark, Lincoln, Taylor and Wood county UW-Extension offices and the county conservation departments from Marathon, Clark, Lincoln, Taylor and Wood counties.

COURSE ENROLLMENT INFORMATION
Please register for the Full Course if you are new to Nutrient Management Planning. If you have already taken the Full Course in the past, please register for the Refresher Course.

Additional family members and/or farm employees may attend with a registered attendee at no additional charge.

Students planning to bring their own computer to complete work on Snap Plus must meet the following minimum computer requirements:

- Windows 7 or later, 10 is recommended
- Memory: 250 MB for software
- Browser: Google Chrome, Mozilla Firefox or Microsoft Edge

FULL COURSE - 12 HOURS TOTAL
3—4-HOUR SECTIONS

Tuesdays, 3/7, 3/14, 3/21
Time: 10am – 3pm
River Block Building (Wisc. Rapids)
$260.00

REFRESHER COURSES
8 HOURS TOTAL

Tuesdays, 3/7 & 3/14
Time: 10am – 3pm
River Block Building (Wisc. Rapids)
$130.00

**Participants will receive a $130 reimbursement upon completion of a nutrient management plan. Reimbursements are provided by a DATCP Nutrient Management Farmer Education Grant and administered by the county conservation departments.*

***Participants will receive a $260 reimbursement upon completion of a nutrient management plan. Reimbursements are provided by a DATCP Nutrient Management Farmer Education Grant and administered by the county conservation departments.*

GET STARTED TODAY
To register call
715.675.3331 and press "1"
or visit
www.ntc.edu/ce

Questions?
Contact Continuing Education at (715) 803-1034 or email ce@ntc.edu

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WI LAND + WATER

2023 PAT—Private Pesticide Applicator Training In-Person Training/Testing in Clark County

March 1, 2023
Abbotsford City Hall
203 N 1st St.
Abbotsford, WI 54405

March 3, 2023
Clark County Courthouse Auditorium
517 Court Street, Room 101
Neillsville, WI 54456

March 8, 2023
Thorp Fire Hall
101 N Wilson St.
Thorp, WI 54771

The self-study option will be available as well. However, you still must submit the order form for a training manual. There will not be any training manuals available to purchase from the Extension office this year.

If you are interested in attending one of the in-person trainings or doing self-study, please contact the Extension office at 715-743-5121 to get registered or to set up a date and time for self-study.

PAIN MANAGEMENT SURVEY

University of Wisconsin – Madison Division of Extension seeks participants in a Pain management survey. This survey aims to collect information from farmers about their use of nonsteroidal anti-inflammatory drugs for various conditions/ procedures in cattle. Data collected will focus on the use of pain management drugs and the perceived pain rating for different conditions/ procedures in cattle.

This study is confidential and should take 5 - 7 minutes to complete. Neither your name or any other identifiable information will be published. Information collected will be accessed only by approved personnel from the University of Wisconsin – Madison. The information collected will be confidential and aggregated when presented to the general public.

WE WANT YOU!

The survey link is:

https://go.wisc.edu/pain

Corn Oil is not Just in the Kitchen

Matt Lippert, Clark Co. Dairy Agent

Cows continue to milk more than ever. Also butterfat content of the milk has been going up steadily. Federal order statistics (Federal Order 30- Upper Midwest- shows average butterfat in milk is up over .3 from about 3.67 to 4.03 in the last ten years.) These more productive cows require carefully formulated diets. We rely on the corn plant to feed dairy cows more than ever as well. For many farms the main forage is corn silage, nearly all farms rely on ground corn as the main grain for the herd. Additionally, we rely on corn byproducts, (distillers' grain, corn gluten feed and corn gluten meal) to supplement the diet.

We rely on corn so heavily because, although it is expensive to grow per acre, its high yield makes corn products generally the most economical alternative. Dry matter yield of corn silage is often double what we obtain from alfalfa and other hay or haylage crops. One cutting instead of 3-4 also causes savings.

Unlike soybeans which are about 20% fatty acid (oil) corn is under 3% oil, but due to how much we feed, as silage, byproduct and grain, corn is one of the main fat sources in the diet.

Results from 3 trials from Penn State and South Dakota State.

	Penn 2013	Penn 2014	SD 2014
Total Fatty Acid % of Dry Matter	**2.5**	**2.6**	**2.5**
C18:2 (Linoleic Acid) % of Dry Matter	**1.2**	**1.2**	**1.2**
C18:2 % of Total Fatty Acid	**48.7**	**48.0**	**45.4**

Whole plant at harvest or fermented silage.

Linoleic Acid is nearly half of the oil from the corn plant, and it can reduce butterfat test if too much is fed, or if the rumen bacteria are unable to bio-hydrogenate it. (detoxify) (change its form)

Vegetable oils in general are known to be toxic to rumen bacteria. We need flourishing rumen microbial populations to have high producing cows. Additives such as prilled fat, encapsulated fats, fats bound with calcium, palm fats are quite expensive, but the demand is there as animal performance has been found to benefit from fats in the diet if in the right form. Fats and oils are the same class of nutrients, only separated by their flow-ability at room temperature. Together they are called lipids. Lipids are very energy dense, 2.25 times more calories per pound than starch or sugar. This is beneficial to the cow, but only if we can maintain a healthy rumen.

Good butterfat test is the result of many factors: genetics, season of year, stage of lactation, diet (enough but not too much starch and sugar, not too much fat, or the wrong form of fat, good NDF digestibility) It is possible to have the majority of these factors in your favor but if one is causing a problem, milk butterfat will crash. Typically, after butterfat test drops it takes a while to rebuild the right combination of rumen bacteria to get back to where you want to be.

Many producers are successfully utilizing high corn and corn by-product rations, but beware of the need to consider the amount of oil, specifically unsaturated, 18:2 linoleic acid in the ration. Corn byproducts may be some of the most economical feeds to purchase to feed your herd, but they may not be a good fit, even if a good buy, if the rations oil level and type begins to limit production.

NSAID use around Calving

Heather Schlesser | UW–Madison Extension Marathon County Dairy Educator

Peer Reviewed By:
Jackie McCarville, Extension Grant, Green, Iowa, and Lafayette Counties
Sandra Stuttgen, Extension Taylor County

What are NSAIDs?

Nonsteroidal anti-inflammatory drugs, or NSAIDs, are a class of drugs that inhibit the enzyme cyclooxygenase (COX), which causes a decrease in the amount of prostaglandin produced. Two primary forms of COX have been reported. COX-1 activity is mainly responsible for day-to-day physiological functions, such as maintaining gut and kidney function. COX-2 activity is generally induced under specific conditions, such as inflammation (Fitzpatrick et al., 2004; Vane & Botting, 1996). Therefore, inhibition of COX-2 is thought to account for most of the therapeutic effects of NSAIDs, while the inhibition of COX-1 likely accounts for most of the undesirable side effects such as gastrointestinal irritation, renal toxicity, and inhibition of blood clotting (Lees et al., 2004).

Why would we want to use NSAIDs?

The three–week period before and after calving is one of the most challenging times for dairy cattle because they must cope with physiological challenges such as decreased dry matter intake, impaired immune system function, and increased metabolic and systemic inflammation (Drackley, 1999; LeBlanc, 2010). After calving, inflammation has been documented in cattle (Bionaz et al., 2007; Huzzy et al., 2009). This suggests that cattle experience some degree of inflammation due to tissue damage associated with birthing and the immense metabolic demand associated with the onset of lactation (Bradford et al., 2015). Stress and inflammation related to calving can increase the incidence of diseases such as mastitis and clinical metritis (Gill, 2020). It is believed that using an NSAID will help to reduce the inflammation associated with calving and thus decrease the incidence of disease.

Do they work?

That answer depends on the NSAID you are using. Most NSAIDs available for animal use inhibit both COX enzymes with varying selectivity. This means the results vary depending on the NSAID you are giving. In this article, we will review the research findings of three NSAIDs, flunixin meglumine, meloxicam, and acetylsalicylic acid, for you to determine if they work.

Flunixin meglumine:

Flunixin meglumine is currently the only FDA-approved NSAID for use in beef and dairy cattle and requires a prescription from your veterinarian. Flunixin meglumine (ex. Banamine ®) is approved to control fever due to bovine respiratory tract disease, mastitis, and the control of inflammation associated with endotoxemia (Smith et al., 2008). Flunixin meglumine is a COX-1 and COX-2 inhibitor but is more selective for COX-1 (Beretta et al., 2005).

Newby et al. (2016) looked into the efficacy of using flunixin meglumine to decrease inflammation and, thus, associated diseases after calving. In their study, they administered two treatments of flunixin meglumine (50 mg/ ml) intravenously. The first 72 animals enrolled in the study were randomly divided between the treatment group (n = 34) and the placebo group (n = 38). Treated animals received an injection of flunixin meglumine when they were moved into the calving pen immediately pre-calving and again 18 to 36 hours later during the morning lockup. Animals receiving the placebo treatment received an injection of saline when they were moved into the calving pen immediately pre-calving and again 18 to 36 hours later during the morning lockup. Shortly after beginning the study, it was determined that the animals treated so far with flunixin meglumine had an increased stillbirth rate.

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This outcome forced the researchers to change the study design. Therefore, the treatment protocol was modified, so the remaining animals enrolled in the study received an injection of flunixin meglumine about an hour after calving and a second injection about 24 hours after calving. Those animals receiving the placebo treatment received their first saline injection about an hour after calving and about 24 hours after calving.

Newby et al. found that animals treated with flunixin meglumine had greater odds of having a fever, which was generally associated with mastitis or metritis. 49% of the animals with a fever were in the mastitis or metritis group. Of the 51% of animals with a fever not in the mastitis or metritis groups, 48% had a fever within the first two days following calving. Flunixin meglumine also increased both the odds of retained placenta and the odds of metritis. The researchers also analyzed the milk production records of the 1,265 animals enrolled in the study for the first 14 days in milk and found that the flunixin meglumine-treated animals produced 1.6 kg/day less milk compared to the animals that received the placebo. Given these results and that flunixin meglumine administration before calving resulted in a five-fold increase in the number of stillborn calves, these researchers do not recommend using flunixin meglumine in cattle around the time of calving.

Meloxicam:

Meloxicam has been approved for use in cattle in many European countries and Canada but not in the United States. However, if you have a valid veterinary client-patient relationship, Meloxicam can be prescribed by a licensed veterinarian for extra-label drug use in cattle. Meloxicam is known to be a preferential COX-2 inhibitor, thus targeting inflammatory processes rather than physiological functions (Newby et al., 2013, 2014). Swartz et al. (2018) were the first researchers to examine the effects of meloxicam administration pre- and post-calving. In their study, they gave 1 mg/ kg of meloxicam by mouth either 48 to 6 hours before calving or within 12 hours after calving. Those receiving meloxicam before calving also received a placebo within 12 hours after calving. The group of animals that received the bolus of meloxicam after calving also received a placebo bolus 48 to 6 hours before calving. The control animals received a placebo bolus both before and after calving. These researchers found that treatment either before or after calving with meloxicam did not affect the incidence of retained placenta, metritis, or rectal temperature. However, these researchers saw an increase in milk production in those animals receiving meloxicam that did not have difficulty calving. Animals that received meloxicam before calving and did not have a hard birthing produced 4.3 kg/d more milk than the animals that had no issue calving and received meloxicam after calving. When meloxicam was administered before calving, there was no increase in the number of stillborn calves compared to controls. It is important to note that it is illegal to use extra-label drug usage to enhance animal performance (including milk production). Since there appears to be no therapeutic benefit of using meloxicam before or after calving, increased milk production would be the only benefit (Swartz et al., 2018).

Acetylsalicylic Acid:

Acetylsalicylic acid (ex., Aspirin) is not approved by the FDA for use in lactating dairy cattle in the United States; dairy producers must consult with a licensed veterinarian before implementing treatments utilizing these products even though they are available over the counter. Use of these products without the consent of a

(NSAID… continued from page 8)

licensed veterinarian is illegal. Acetylsalicylic acid is a weak inhibitor of both COX isoforms. Its beneficial effects are attributed to its ability to block the function of COX-2. Barragan et al. (2020) looked at the effects of treating cattle with acetylsalicylic acid after calving; cattle received 100 mg/ kg of acetylsalicylic acid in two boluses by mouth. Those animals in the treatment group received their first treatment in the maternity facility within 12 hours of delivery. Three additional treatments were provided at 12-hour intervals. Animals treated with the placebo were given gelatin capsules filled with water within 12 hours of calving and at three additional treatment times provided at 12-hour intervals.

These researchers found that a lower proportion of cows treated with acetylsalicylic acid developed clinical metritis at 7 ± 3 days in milk, and fewer tended to develop clinical endometritis at 50 ± 10 days in milk compared to untreated cows. These researchers also looked at milk production differences between treated and untreated animals. Overall, cows that received acetylsalicylic acid produced 1.82 kg/ day more milk than those receiving the placebo during the first 30 days in milk. When these researchers looked at the differences between the animals having calving difficulty (dystocia), they discovered that cows that had experienced dystocia and received acetylsalicylic acid produced 4.48 kg/ day more milk than cows with dystocia and did not receive acetylsalicylic acid. The effect of acetylsalicylic acid usage was not as pronounced in cows that had a normal calving indicating that treatment may be more beneficial for animals experiencing dystocia (Barragan et al., 2020). To date, no study has been conducted that provides acetylsalicylic acid before calving, so we do not know its effects on stillbirth.

Conclusions:

Before using any of the discussed NSAIDs, it is essential to work with your veterinarian and determine the best protocol and drug for your farm. In addition, it is essential to note that all NSAID treatments have milk and meat withdrawal times that should be considered. Discarding milk when using these drugs is required to prevent the sale of milk contaminated by drug residues.

Drug	Route of administration	Milk withdrawal (d)	Meat withdrawal (d)
Flunixin meglumine	IV	2	4
Meloxicam	Oral	5	21
Meloxicam	IV or Sub-Q	5	15
Aspirin	Oral	1	1

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Developed by UW–Madison Extension Marathon County Dairy Educator Heather Schlesser for the 2023 Badger Dairy Insight Webinar Series: Factors impacting fertility from genomics to aspirin, January 24, 2023.

CONSERVATION CORNER

Jim Arch, CCA
Clark County Land Conservationist

Hello from the Clark County Land Conservation Department I hope your winter hasn't been to harsh for you, I know for me by the end of February I am ready for a season change.

Nutrient Management Plans: I want to take some time to remind you that April 1st, as in years past, is the deadline for submitting to the department your updated nutrient management plan (NMP). Most plan writers working in Clark County are already aware of that deadline, but it wouldn't hurt to remind them if you are having someone update your NMP. If you are doing your own NMP update, make sure your certification for self-planning is up to date. If you are not sure, call Fred or Tiffanee in our office and they will let you know if you need to attend the March trainings. There will be two opportunities in March to learn how to write your own NMP without a computer or to re-certify to write your own NMP, March 15th at the Hixon town hall and March 29th at the Green Grove town hall. The trainings will be begin at 10:00 am and end at 3:00 pm at both locations. Pre-registration is required! Call Tiffanee or Fred in office at 715-743-5102. If you can't make either of those trainings then you are out of luck until next year.

Pre-Ordinance Manure Storage Inspections: Again we will be doing pre-ordinance manure pit inspections, this year we are concentrating on the townships of Colby and Mayville. If you have received a letter from us, don't get alarmed and assume that we will be coming to make you close up your manure storage. The vast majority of pre-ordinance manure storages we inspect are fine to keep using as is, but there have been a few that were not being used and it was obvious that they weren't going to be used again, those are the ones that we would like to see closed up. There is cost sharing available from my department and NRCS to help cover the cost of closing up a manure storage, but you need to get a permit from the Land Conservation Department before closing up your manure storage. The permit and engineering plan to close up a manure storage is free.

New Cover Crop Demo Plot Project: I'm happy to announce that we will be starting up a new cover crop demo plot project. Clark Turner has agreed to lease the County 16.8 acres on another parcel of land that Clark and his family own. The location of the new plots will be two miles south of the intersection of Hwy N and CTY O on the west side of O. The old demo plot project ended in 2022 with the closing out of the DNR grant we had received for the project. I'm looking forward to keeping a demo cover plot project going and feel there was valuable information that was gleaned from our first project. Clark and I have discussed maybe using a small grain in the rotation so that different cover crops could be tried. Stay tuned for more information on a Field Day at the new location.

Engineering Projects: Hunter Lemler, the new engineer technician in the department has almost completed his first year with us. Hunter has learned a lot over the last year and he is anxious to work on surveying and designing waterways, well closing, manure storage closings, etc… Give Hunter or myself a call if you have an ideas that you would like to bounce off us. We have some extra cost share money available this year that was carried over from last year that needs to be spent in 2023!

Stay warm!

On the Road NMP 2023

Dates & Locations: March 15th at Hixon Town Hall (French Town Ave, Withee)
March 29th at Green Grove Town Hall (Sparrow Ave, Owen)

Time: 9:30 am—3:00 pm
Cost: There is no cost for this training.
Purpose: To educate farmers to become qualified to write DATCP NMP for their farm.

Refresher course is required every 4 years to submit your own plan.

This training will be hand written, but you can attend to become requalified for SNAP program.

Bring your soil samples and current plan (if you have one, either written or e-version).

Please bring your own lunch and drinks—we generally do a working lunch for time efficiency.

If interested in attending, please call Clark County Extension at 715-743-5121 or Clark County Land Conservation at 715-743-5102 to register.

The Clark County Dairy Promotion Committee

Clark County Quality Milk Award (SCC)

Greetings Clark County Dairy Farmers

The Clark Dairy Promotion is inviting your farm to the 2023 Annual Meeting

Place: IGYS Bar & Grill Corners of Cty T & X, Withee (522 W. Mill St, Withee, WI)

Date: March 18th 2023 NOON

Limited to the first 45 Attendees

*Award winners Meal is Free / Other Attendees $10 per plate payable Clark County Dairy Promotion

Milk Quality Award SCC under 125,000 for 2022

To apply submit all sheets from milk plant from 2022

Sara Fischer W3286 Bridge Road Owen WI 54460

Questions and **RSVP By March 8th @ 715 654 5223 or email purplebirdy@live.com**

To be eligible for this award, your farm must maintain under a 125,000 Somatic Cell Count for the whole year. To apply, the farm must submit all test sheets from the milk plant from the 2022 Calendar year. Please fill out this form and send it with your lab sheets. This information can be mailed to Sara Fischer

---

Farm Name: _____

Owners Names: _____

Mailing Address: _____

City: _____

State: _____

Zip Code: _____

Cell Phone Number: _____

Landline Phone Number: _____

Email Address: _____

Herd Size: _____

Milk Plant: _____

Premise ID: _____

If you have Questions, Contact Sara Fischer at 715-465-0245 or email at purplebirdy@live.com

Dairy farmers of Wisconsin exists to be a tireless advocate, marketer and promoter for Wisconsin dairy farmers. We help build markets and trust in our farmers, dairy farming, and our dairy products.

Upcoming Meetings/Events

Make sure to listen to WCCN and WAXX for any cancellations

DATE	EVENT	LOCATION	TIME
March 7— March 21, 2023	**NMP Training Courses**	NTC locations. See page 10 for more details	See page 6
March 1st March 3th March 8th	**PAT Training**	Abbotsford City Hall—Abbotsford, WI Courthouse Auditorium—Neillsville, WI Thorp Fire Hall—Thorp, WI	9:00 am—3:00 pm
March 11th	**St. Croix Valley Bull Test Open House / Beef Cow-Calf Workshop**	UW– River Falls—Mann Valley Farm 129 S Glover Rd., River Falls, WI 54022	10:00 am—12:30 pm
March 18th	**Cow—Calf Workshop**	Knutson Family Farm E5166 1370th Ave Ridgeland, WI 54763	10:00 am—12:30 pm
March 18th	**Clark County Dairy Promotions Annual Meeting**	IGYS Bar and Grill 522 W. Mill St, Withee, WI	Noon
March 25th	**Master Gardeners—Over the Garden Gate Spring Garden Conference**	Clark County Courthouse Auditorium 517 Court St. Room 104, Neillsville, WI	9:30 am—noon
April 18th	**CWFC Meeting**	Loyal City Hall—Loyal, WI	10:30 am—2:30 pm
April 18, 19, & 28th	**Artificial Insemination Courses**	April 18 & 19 via ZOOM April 27 & 28 In Person: Bach Farms W861 Co Rd A, Dorchester, WI	4/18-19 @7:00—9:00 pm 4/27 @ 4:00—6:30 pm 4/28 @ 9:00 am—noon

Are you looking for a way to advertise your business?
Do you want to support Clark County 4-H?

2024 Clark County Plat Books
Are in the planning stages
To advertise or donate,
contact Seth Harrmann, 4-H Educator
(contact information below)

Demographic change? No longer wish to receive your copy of Extension Views? Want to view the newsletter online instead or have it sent to your email?

Please contact the Extension office at 715-743-5122 or email valerie.wood@co.clark.wi.us to update your preference.

Thank you!

Extension
UNIVERSITY OF WISCONSIN-MADISON

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Fax: 715-743-5129
https://clark.extension.wisc.edu/

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