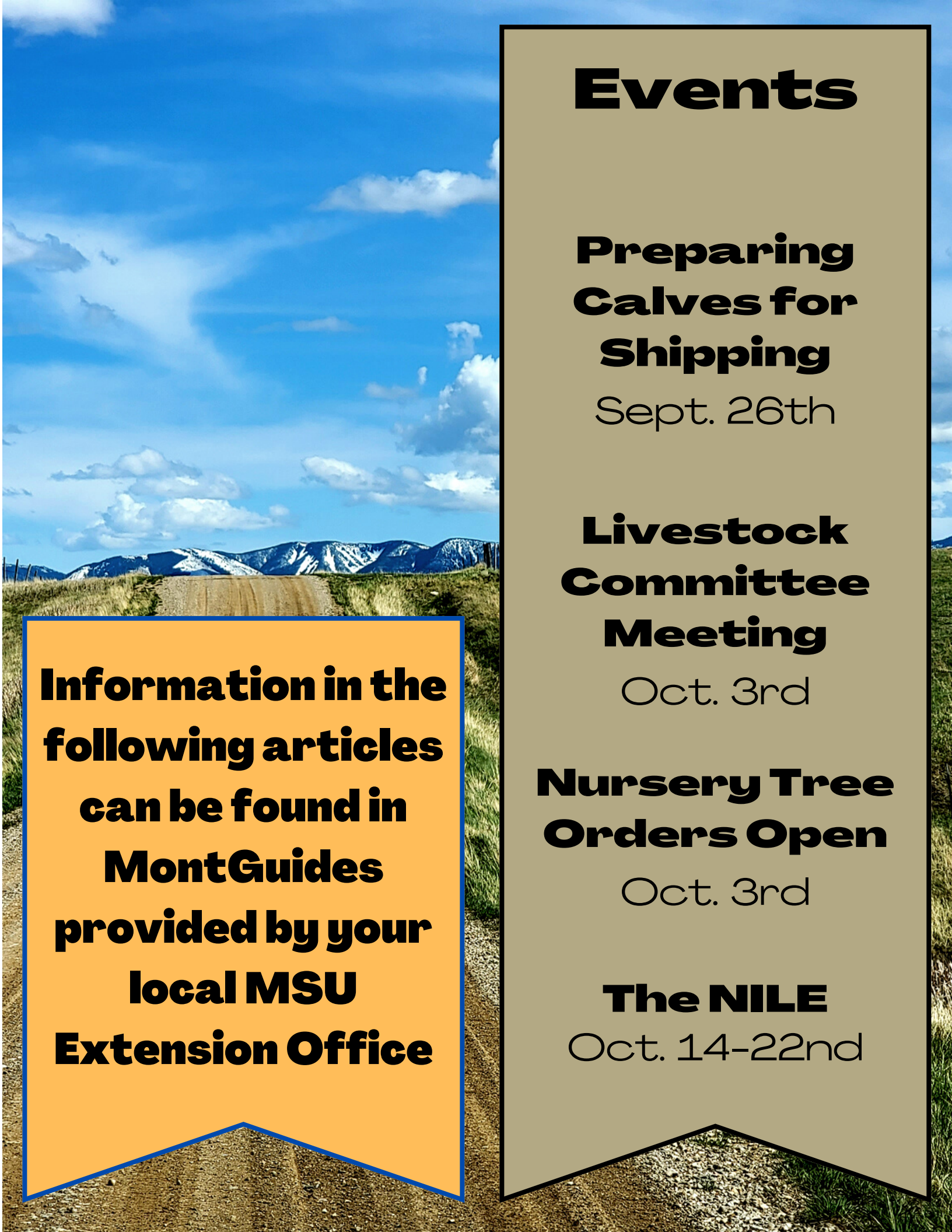
Producers Newsletter

September/October



Events

Preparing Calves for Shipping

Sept. 26th

Livestock Committee Meeting

Oct. 3rd

Nursery Tree Orders Open

Oct. 3rd

The NILE

Oct. 14-22nd

Information in the following articles can be found in MontGuides provided by your local MSU Extension Office

Water Quality for Livestock

Ask many farmers and ranchers about water in Central Montana and they will tell you how important it is. Following that up with how they wish we had more of it in our area. Water requirements are vital for both crop and livestock production and change based off the stage and condition of the land and animals alike. A mature beef cow requires an estimated 10 gallons of water a day when temperatures are more moderate. That requirement increases to around 15 gallons during the summer heat. These requirements can increase more with other production processes such as lactation. Additionally, water intake is a factor in feed intake. Access to water is not only restricted by accessibility, but also by the quality of that water. Water quality can be affected by factors such as location of the water, year, precipitation, soil condition, and season.

Total dissolved solids (TDS), sulfate, and nitrate concentrations are three elements that producers should be aware of before relying on a water source for their livestock. The amount of TDS is the sum of all the dissolved minerals, metals, and nutrients in water. Salinity is another term used to describe TDS. High levels of TDS over 10,000 mg/L are not suitable for livestock as they will dehydrate them instead of hydrating them as it was intended. Concentrations of TDN are more likely to change in surface water and shallow groundwater. High sulfate concentrations can cause reduced water intake, PEM, polio, a neurological disorder that is commonly fatal. Symtoms of PEM include siezures, blindness, ataxia,

Photo by Marley Manoukian

Water Quality for Livestock cont.

and recumbency. Nitrate is another mineral that livestock producers should be aware of in their water sources. Similarly to TDS, surface water and shallow groundwater is more susceptible to high concentrations of nitrates. Elevated nitrate levels cause toxicity in livestock that generally result in death. For more information on water quality for livestock visit with your local MSU Extension Agent/Office.

If you discover your water sources do contain high concentrations of TDS, sulfate, and/or nitrate there are some actions you can take to remedy the problem. For many, hauling water to animals is a common response to water quality issue. mixing 2 different water sources may also be an option. However, this method will still require hauling water and additional testing of water to ensure that acceptable levels have been met. Reverse Osmosis is another method that could be implemented to reduce TDS, sulfate, and nitrate levels. This method does have limitations however as it is expensive and equipment will need to be serviced frequently. Other low-cost options are available, but may not have enough longevity. Rainwater catchment systems have shown some promise when designed correctly.

For more information MSU has produced MontGuide *Water Quality for Livestock MT202209AG*.

Vertebrate Control

For any vertibrate control please contact Stephen M. Vantassel. Stephen is the Vertebrate Pest Specialist for the Montana Department of Agriculture.

Office: (406) 538-3004
E-mail: svantassel@mt.gov

FREE WEBINARS!

National Farm Safety and Health Week 2022

PROTECTING AGRICULTURE'S FUTURE
NATIONAL FARM SAFETY AND HEALTH WEEK
SEPTEMBER 18-24, 2022

	12 PM - 1 PM CT	2 PM - 3 PM CT
 **MONDAY** SEPTEMBER 19	Crashes Involving Agricultural Vehicles in the Southwest Region	ATV/UTV Safety for Farm Women
 **TUESDAY** SEPTEMBER 20	Putting Time and Distance Between Someone at Risk of Suicide and Lethal Means	Heat and Wildfire Smoke Exposure Among Agricultural Workers
 **WEDNESDAY** SEPTEMBER 21	Protecting and Promoting the Health of Young Agricultural Workers	Farm Youth Mental Health: What We Know and How to Help
 **THURSDAY** SEPTEMBER 22	Roundtable Discussion: Grain Bin Safety	Confined Space: Grain Bin Entry
 **FRIDAY** SEPTEMBER 23	More than Milk: Strong Bones and Injury Prevention for Aging Women in Ag	¡Basta! Working Together to Prevent Sexual Harassment in the Ag Workplace

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Avoiding Algae Issues in Stock Ponds

By Tommy Bass

Tommy Bass is an MSU Extension Livestock Environment Associate Specialist

In recent years, the algae that shows up in the ponds and reservoirs people visit and use has caused them to take a closer look. This concern is valid because when blue-green algae are present, harmful algal blooms (HABs) are possible (more information at the DPHHS website: hab.mt.gov). HABs produce toxins that can sicken or kill animals that enter or drink the water. Cattle deaths from HABs have been documented in Montana, making this issue of particular concern to livestock producers who rely on stock ponds to water their animals.

An important strategy for reducing the risk of algae blooms is to reduce nitrogen and phosphorus transport into surface water. While dissolved and particulate nutrients are carried into water by natural processes, excessive nutrients increase algae growth. Nutrients originate from various sources, including lawns and landscaped environments, agricultural lands, and contributions from wildlife, livestock, and even human wastes.

When planning conservation opportunities associated with livestock and water, the following philosophy can be helpful, “Keep clean water clean and avoid direct contact.” The first part is in regard to diverting stormwater away from pens, corrals and heavy use areas to keep them as dry as possible. This has benefits in overall animal health and foot health for all livestock, particularly horses and cattle. For livestock headed to market, clean cattle are often regarded more favorably and may bring better prices. Less mud in corrals and pens also improves the comfort and safety of workers and working horses. From a water quality standpoint, drier livestock environments reduce potential for contaminated runoff from these areas.

Best management practices to, “Keep clean water clean,” include diverting stormwater from corrals, pens and heavy use areas through the use of berms, ditches, or grassy swales. Additionally, gutters can be added to barn and shed roofs to divert rain and snowmelt away from these areas where livestock congregate.

When corrals and pens are due for renovations, consider moving them further uphill. Many old facilities were built in coulees for shelter and access to natural water sources; however, with modern watering technology, corrals and pens can be relocated uphill from these areas and provide cleaner, healthier water in tanks and troughs. Once clean water enters livestock environments, it is then considered wastewater.

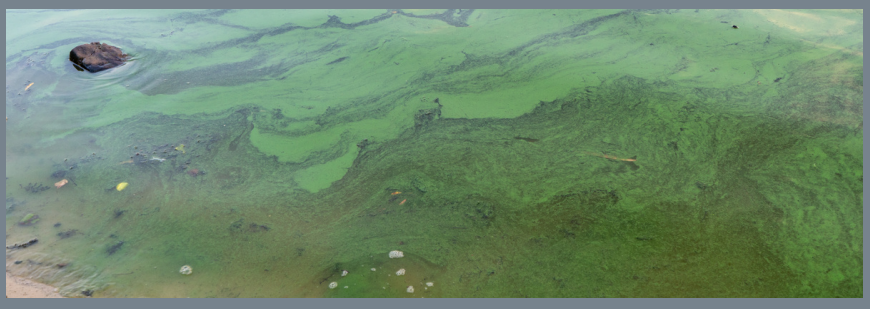
Avoiding Algae Issues in Stock Ponds cont.

The second part of the livestock and clean water philosophy, “avoid direct contact,” refers to the benefits from limiting or excluding manure and confined animal contact with surface water and well heads. In confinement areas, such as seasonal feeding, lambing and calving lots, animals should have no direct contact with surface waters. This is different from pasture and rangeland scenarios where some strategic access to streams as part of a managed riparian grazing plan can be an important part of a sustainable system.

Cattle congregating near an earthen stock pond can rapidly degrade the water quality in the pond to the detriment of the animals’ health and the quality of the resource. Strategies that encourage livestock to enter, drink, and move away from the watering area are good for animal health and water quality. Aside from the point of access, a vegetated or riparian buffer around the rest of the pond or stream will allow nature to filter out nutrients, sediment, and other pollutants. There are several best management practices (BMPs) that encourage cattle to spend less time loafing near water sources. A few strategies include providing minerals and supplements, water tanks, shade, or windbreaks on higher ground away from ponds and streams.

After a harsh winter and spring, winter pastures can look like a bare lot. Compared to natural and vegetated areas, bare and/or compacted soils are more prone to runoff during rain events, causing soil and nutrient loss. There are practices that can alleviate the impact on these areas, improve their utility for the next season, and reduce pollution potential. During the times these pastures or large corrals are occupied, feed bunks or hay feeders should be periodically moved around the pasture. Rotational grazing strategies and pen/pasture rest periods can be implemented for all seasons. Dragging high use areas with a chain harrow can break up and spread manure around the pasture and distribute nutrients, encourage grass regrowth, and improve soil quality.

Simple management steps year-round can result in better water quality, more efficient use of ranch infrastructure, healthier livestock, and improved overall productivity. These investments in conservation can help preserve the water quality and utility of earthen stock ponds and other resources, especially near the end of summer when water and grass resources become more scarce.



Supporting the Next Generation

If you are interested in supporting and fostering the next generation of livestock producers, attending the fair is a great way to do so! By engaging with the youth about raising livestock you might be the impact that creates the next homegrown veterinarian, nutritionist, or producer who will help grow the community.

Private Applicator License

Obtaining a private applicator license allows you do use pesticides that you are not allowed to buy over the counter and apply them to your own land.

How to obtain a private applicator license:

1) Call the Extension Office
2) Pick up Core Applicator book
3)Schedule a testing time
4) Pass test
5) Fill out application and pay fee

MDA Looking for Your help!

The MT Dept of Agriculture is presently revising the Agricultural Plant Pest manual (used for licensing pesticide applicators within the category) and is looking to obtain or take quality photos to help illustrate the manual's chapters. Think of photos that you would find useful for those looking to be licensed in the area of plant pest control.

- **Cover Photo**: Perhaps a person spraying a noxious weed? Permission of the subject being photographed is needed.
- **Chapter I- Introduction** (damaged fields, plants, photos to set context).
- **Chapter II- Integrated Pest Management,** (examples of habitat modification, cultural methods, sanitation, non-chemical control, chemical control, biological control etc.)
- **Chapter III- Agricultural Weed Pests** (examples of weeds, weed control (spraying, burning, pulling, tilling)
- **Chapter IV- Agricultural Insect Pests** (examples of the insects and/or the sign of the damage caused by them, capture techniques)
- **Chapter V- Agricultural Plant Diseases** (examples of the diseases and/or the sign of the damage caused by them)
- **Chapter VI- Application Equipment and Methods** (examples of equipment, methods, used to control plant pests).
- **Chapter VII- Health and Safety** (heat, rollover risks, pesticide exposure risks, safety equipment, PPE, etc.)
- **Chapter VIII- Public Relations** (Landowner relations, press conferences, press releases, phone conversations, websites etc.)

If you are a photographer (yes, cell phones can take excellent photos), please send photos that are at least 1 megabyte in size, clear, crisp and with appropriate contrast. Photos should be sent to svantassel@mt.gov along with the name of the photographer, title, organization, brief description and permission to use. Cell phones take wonderful shots provided the phone is held still (no one hand shots).

Not a photographer? No problem. If you know of areas where weeds, insects, or other agricultural pest control activities are taking place, give me a call and I will take the photos.
If you have any questions contact Stephen M. Vantassel, svantassel@mt.gov or 406-538-3004.

Understanding Nitrates

After the drought conditions everyone seems to be more aware about nitrate toxicity in their forages fed to livestock. High levels of nitrates have been reported in cereal grains such as oats, wheat, barley, and triticale, grasses that have/are experiencing stress, and in some weeds like kochia, quackgrass, and Russian thistle. The accumulation of nitrates is a natural process in plants. Unfortunately, elevated levels of nitrates can cause adverse reactions in animals.

High concentrations can cause noninfectious disease called nitrite poisoning in animals. When nitrate levels are normal it will be broken down by rumen microbes to nitrite, and then further to ammonia that can be converted to protein by the rumen microbes. this protein will then be provided to the host animal. The problem occurs when the amount of nitrate is too great for the rumen microbes to effectively break it down to the usable ammonia. Converted nitrite will then pass through the small intestine and bind to hemoglobin, the oxygen carrying molecule in blood. These hemoglobin will then be converted to methemoglobin, which cannot transport oxygen. Depending on the intensity of the toxicity, one of the following symptoms may occur:

Signs of early or chronic toxicity:

- Watery eyes
- Reduced appetite
- Reduced milk production
- Rough hair, unthrifty appearance
- Weight loss or no weight gain
- Night blindness
- Abortion

Signs of acute toxicity:

- Accelerated pulse rate
- Labored breathing, shortness of breath
- Muscle tremors
- Weakness
- Staggering gait
- Cyanosis (membranes such as the tongue, mouth, vulva and the whites of eyes, turn blue)
- Death

Understanding Nitrates cont.

You may be asking yourself, "how do nitrates accumulate in plants if they are a naturally occurring process that is usually a non-issue?" To answer that we need to understand the nitrate levels in plants and how they change. Soil nitrogen is taken up by the plants roots in the form of nitrates. similarly to how microbes break nitrates down to protein, the plant also break them down to usable protein. Plants accumulate nitrates at night when photosynthesis is inactive. Elevated nitrate levels in the morning are quickly reduced when adequate sunlight is provided. under normal conditions this cycle will keep the nitrate concentrations at a level suitable for animal consumption. Be mindful that some plants accumulate nitrates at higher levels.

Now that we understand "how" nitrates accumulate in plants, we should discuss "why" nitrates accumulate and what can be done to minimize the effects. Abnormal, or "stressful", growing conditions will reduce a plants ability to

create energy that is used to break down nitrates to usable protein. Stress events like drought, frost, hail, shade, disease, insects, high levels of soil nitrate, soil mineral deficiencies or herbicide damage can contribute or lead to elevated nitrate accumulation in plants. crops grown in areas where nitrogen application was administered and that have gone through a recent stress event are the most likely to have high nitrate levels. Soil testing for nitrogen levels, controlling weeds, selecting drought tolerant cereal grains, and avoiding the harvest of crops in the morning can all help to reduce the risk of nitrite poisoning in animals.

Unfortunately, if nitrite poisoning does occur there is little that can be done. Knowing the amount a nitrates in forages, feed, and water is important as other sources can be supplied to help dilute the nitrate concentrations. Veterinarians can potentially save an animal by administering a dose of methylene blue intravenously if done immediately.

Understanding Nitrates cont.

The best practice is to test feeds and water for nitrate levels if you have any questions about the levels of nitrates present. Local MSU Extension can test samples relatively quickly or send samples off for testing.

More information on nitrates can be found in MontGuide MT200205AG, Nitrate Toxicity of Montana Forages

Free Testing

MSU Extension can test water samples for Nitrates, Sulfates, and Total Dissolved Solids either in the field or in the office.

Preparing for Fire Season

Living in the western United States, and Montana specifically, means that wildfire is a part of life that every Montanan should be prepared for. Preparing you landscape is one of the most effective ways you can protect your property. Knowing how fire reacts and what creates prime conditions for fire is the key to staying safe when Montana's wildfire season begins.

Plant community is plays a role in how susceptible an area is to wildfire. It is important to note that any plant can burn under the right conditions, even plants that are considered fire-resistant. Fire behavior and intensity play a large role in if a plant will burn along with moisture content, plant size, and the presence of flammable fuels such as bark and leaves. Plant location and arrangement of the landscapes vegetation should take priority over fire-resistance in plants. An example of this would be understory brush that is tall enough to allow fire a path to the tree canopy.

Which side of the cabin illustrates fire resistant landscaping? Fire-resistant landscaping can be attained through pruning, thinning and maintenance of naturally growing vegetation. The right side of the cabin illustrates fire-resistant landscaping as a result of vegetation maintenance. BY DOMINIQUE WOODHAM

When it comes to homes, it is important to maintain the area extending 100 ft from the home. This area is typically referred to as the Home Ignition Zone. Proper care of the Home Ignition Zone will increase the survivability of your home in case of wildfire as well as making your home or structures more defensible for firefighters. Flammable materials next to a structure can directly ignite that structure. Rocks and large stones can

Preparing for Fire Season cont.

be used around a home for aesthetic around a home to reduce the amount of flammables in the Home Ignition Zone. Watering plants around the home sufficiently and reducing the fuel loads will also increase the resistance your property will have to fire. Along with managing live vegetation it is also important to manage non-living fuels. Dead leaves, grass, and pine needles are highly flammable and should be removed from roofs and the Home Ignition Zone. Mulching is another method that many gardeners like to use in order to increase moisture levels. This practice can be successfully implanted around structures to increase fire survivability.

Montana many organizations that can help assist you with any of your wildfire needs. Your local MSU Extension Office can assist you in acquiring information about wildfire and how you can be better prepared in the chance that you are caught in its path this fire season. Specialist within MSU are also a valuable resource that can be called upon leading up to and following wildfire. Local extension agents can be used as well and will gladly aid in efforts to rehabilitate an area after a wildfire has burned an area.

For more information check out this MontGuide: MT202104AG, Fire-Resistant Landscaping Considerations for Montana's Wildland Urban Interface (WUI)

Preparing Calves & Shipping

Preconditioning is a tool that can help prepare calves for their future in the feedlot, backgrounder, or development yard. When calves are preconditioned, they are being given the best advantage for life in a feedlot. By preconditioning, calves have stressors spread out over a period of time in a strategic method to avoid a large stressor event. Events such as castration, dehorning, vaccinations, weaning, diet change, and shipping are all stressors in a calf's life that reduce an animal's ability to grow and thrive. Having a preconditioning/shipping program in place can not only better equip animals that carry your brand to excel in the next stage of their production life, but can also put some more money in your pocket!

Join MSU Extension for a free workshop that will cover the benefits of preconditioning and also different preconditioning programs to see what might work best for your operation. Industry experts will also be present to comment on shipping and tips for shipping calves. Call or stop by the MSU Extension Office to get more details about this workshop. Do not hesitate to ask questions or to come by if you already have preconditioning program in place and want to expand your knowledge.

Workshop will be held on **Monday**
September 26th

MSU Extension Office

Phone: (406) 535-3919

Address: 712 W. Main St.
Lewistown, MT