



# Flathead Reservation Extension Newsletter

## Ag Alert



[www.grasshoppercontrol.com](http://www.grasshoppercontrol.com)

### Grasshoppers in Rangeland and Cropland

The area of Montana infested with 15 or more grasshoppers per square yard has increased from one million acres in 2006 to 17 million acres in 2009. Grasshopper populations tend to increase during periods of drought and region-wide outbreaks typically last from 2 to 4 years. Grasshopper populations are expected to be higher across Montana this summer. The migratory, two-striped and clear-winged grasshoppers are common species in the current outbreak. **Grasshopper scouting typically begins during the last week of May or the first week of June depending on weather conditions.** Sweeping with a net close to ground level can be used to detect small first instars that are hard to see. When the nymphs are more visible, the square foot method can be used: visually count the number of grasshoppers in a one square foot area. Randomly repeat 18 times while walking an area and divide the total by 2 to give the number per square yard.

**Rangeland:** A total of 15-20 grasshopper nymphs per square yard is considered an economic threshold for treatment. At these densities grasshoppers can result in 200 – 500 pounds of lost forage per acre of rangeland, depending on their duration and conditions such as precipitation. Reduced Agent and Area Treatment strategies (RAATs) can be used to control grasshoppers in rangeland. USDA research has demonstrated that RAATs, a "skip pass" approach that also uses lower rates of insecticide, can achieve 80 to 95% control (compared to 85-99% control with complete blanket coverage at the full insecticide rate) at a lower cost. The insecticide dimilin is commonly used in large-scale grasshopper spray operations. Dimilin is an insect growth regulator that is only effective against juvenile insects that are molting. It is NOT effective against adult insects that no longer molt, so timing is critical. Ideally the majority of grasshoppers should be in the 3<sup>rd</sup> instar stage during treatment. Commercial honey bee colonies are often placed on ranchland. A benefit of dimilin's mode of action is that it is relatively safe to adult honeybees.

**Spring Wheat:** Grasshoppers are notorious for their ability to move into cropland from surrounding grassy areas; cropland surrounded by grass is particularly at risk. A total of 8-14 grasshoppers per square yard within the field, or 20-40 per square yard along the field margin, are considered to be economic thresholds for spring wheat. The stage and condition of the crop can affect the economic thresholds. Crop protection is typically achieved by applying a border treatment of insecticide to keep the grasshoppers from entering the crop. A border width of 150 feet surrounding the crop may be adequate for control, but if grasshopper densities are high, control may require up to a 1/4 mile border treatment where ground applied RAATs can be considered. Under extreme pressure, control may be difficult and multiple border treatments may be required. Border areas and crop margins should be monitored after treatment to ensure that grasshoppers do not re-enter the field. Insecticide baits can also be effectively used but USDA research has found that the effectiveness of insecticidal baits can depend on grasshopper densities. Baits are not recommended when grasshopper densities are higher than 30-40 per square yard.

**Alfalfa:** Economic thresholds for alfalfa are higher: juvenile nymphs, 50-75 per square yard on the field margin and



[www.housamz.com/general/nature-wallpapers/](http://www.housamz.com/general/nature-wallpapers/)



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\*\*\*Insert: Watch Out for Toadflax

30-45 per square yard within the field; adult grasshoppers 21-40 per square yard on the field margin and 8-14 per square yard within the field. The stage and condition of the crop can affect the economic thresholds, first year seedling stands may be more susceptible.



[www.plantextractok.com/list.asp?id=456](http://www.plantextractok.com/list.asp?id=456)

## Cattle News

### Selecting A Bull

Purchasing a bull for a beef cattle operation is a very important decision. And it can be a daunting task for someone new to the cattle business. Selecting a bull is even more important for the smaller operation that has one or two bulls. The rule of thumb is that you need one bull for every 25 cows in a typical operation. The goal is to insure that every cow is bred within a 60 day breeding period so that every cow produces a calf each year on a 12 month cycle. The other very important goal is to produce quality calves that can be sold and used for replacement heifers.

The best place to purchase a bull is at a bull sale when you have the opportunity to select from many bulls and interact with other beef cattle producers. Some producers attend many sales to find the genetics and the price that they prefer. All the purebred breeders that hold sales will also publish a sale catalog months prior to the sale to allow potential purchasers to decide which bull fits their needs. It is a good idea to get on the mailing list of several seed stock producers. Then you will have the opportunity to learn the lingo.

One of the lingo items that you will see in a bull sale catalog will be EPDs or Expected Progeny Difference. This system of evaluating progeny was developed by a group of cattle breeders in conjunction with their breed associations. Their basic goal was to develop a system that buyers could use to evaluate the differences in genetics and eliminate the impact of the environment on how those genetics were expressed. EPD's predict the level and direction of various genetic traits such as birth weight, yearling weight, etc. In addition, with more measurements the EPD calculations could come up with an accuracy calculation that provided buyers with



[www.flickr.com/photos/centralaustralia/351091805/](http://www.flickr.com/photos/centralaustralia/351091805/)

an idea of how sure the EPD calculations would come true. This is abbreviated as ACC. One of the newer EPDs is Docility. This may be one of the most important traits for a smaller operation since all the

cattle are typically in closer contact with people, cars, dogs, etc that cattle see on a large ranch. A flighty cow will have a flighty calf and loss weight just being nervous. To learn more about the Docility EPD click on the following link: <http://www.angus.org/sireeval/DocilityResearchRpt.html>.

After you have purchased your bull, insure that they can perform. The last thing you want in a bull is one that cannot breed due to sickness or other issues. All bulls purchased from a seed stock supplier will be fertility checked but make sure each of your bulls is fertility checked annually prior to the breeding season. It is also important to keep them well fed and have all their vaccinations up to date.

### What is Trichomoniasis?

Trichomoniasis is a venereal disease caused by the protozoan parasite *Tritrichomonas foetus*. Protozoa live in the sheath of infected bulls, with no ill effects on the bull's health. When passed to cows, trich can lead to embryonic death, irregular estrous cycles, and repeat breeding.

A Montana trichomoniasis testing law took effect in spring 2007 where positive trich tests are reportable to the State Veterinarian's Office. Non-virgin bulls over 12 months of age and virgin bulls over 24 months of age that are imported into Montana, as well as bulls that are sold, loaned, or leased within the state require testing. Bulls must test negative 3 times at no less than 1 week intervals (culture test), with no breeding between testing and time of sale/loan/lease. An alternative, one-time complete bull herd PCR (polymerase chain reaction) test may be conducted where all bulls must test negative. According to the rule, a virgin bull is defined as a sexually intact male bovine less than 12 months of age or a sexually intact male bovine 12 to 24 months of age accompanied by a signed affidavit as having had no potential breeding contact with sexually intact female cattle. Affidavits can be obtained from brand inspectors.



[www.ankenmanranch.com/](http://www.ankenmanranch.com/)

For the culture test, a fluid sample is obtained from the inside of the bull's sheath and is inoculated into culture media to identify the presence or absence of the protozoa. Three negative tests are needed because assurance that the bull is truly negative increases with each progressive test. For the PCR test, the laboratory is testing for the presence or absence of the protozoa's DNA, and only one test is required. However, exporters of bulls should be aware that the accepted testing method may vary from state to state.

Bulls shipped to a licensed livestock market or state veterinarian-approved feedlot who are destined for harvest are exempt from the testing rule, as are bulls transported from the ranch directly to a licensed slaughtering establishment. Bulls

transported through Montana with no intent to unload do not require testing, nor do bulls imported for exhibition or rodeo purposes that are held in confined facilities. Non-virgin bulls from out of state that are destined for a Certified Semen Sales collection facility are also exempt. Finally, bulls imported as part of a state veterinarian approved seasonal grazing operation without changing ownership, following a risk assessment, are not required to be tested.

Test-positive bulls will be individually identified with a "V" brand on their right tailhead and are subject to immediate hold order until shipped to licensed livestock market, feedlot, or slaughtering establishment. After positive animals are identified, an epidemiological investigation will be conducted to identify other animals or herds potentially exposed to a test-positive animal or herd. An exposed herd notification is issued to appropriate owners and managers, and exposed herds may be subject to hold order and testing.

Still have questions? *Contact your local veterinarian, the Department of Livestock at (406) 444-2043 or go to the web at [www.mt.gov/liv](http://www.mt.gov/liv).*

## Gardening Guide



### Nonchemical Disease Control

With the increasing concern about use and misuse of pesticides in commercial agriculture and home gardens, there are more and more

inquiries for organically grown commodities every year. Nonchemical control practices for plant diseases have been known and recommended for years. The backbone of any integrated pest control program must always include cultural and sanitation practices, two important components of nonchemical disease control. Unfortunately, disease problems may begin as soon as seeds are planted and can continue into harvest and storage. Plant diseases may be caused by several pathogenic organisms. In addition, nonliving factors can either predispose a plant to disease or directly cause plant injury. Fortunately, many disease problems can be prevented or controlled without pesticides. Effective plant disease control begins at the onset of disease or even before symptoms appear.

Effective disease control through **Resistance** (a plant's tolerance or immunity to a disease) is based on knowledge of the diseases that occur in an area. Always choose varieties of plants that are adapted to Montana growing conditions. Many vegetable, fruit and ornamental plant varieties are available with resistance to one or more diseases. **Exclusion** is preventing the entrance and establishment of disease causing organisms (pathogens) into areas where plants are grown. This means avoid bringing diseases into the garden or moving them around within the garden. Use certified, disease-free seed or transplants. Examine the leaves and root systems of transplants and eliminate or destroy diseased plants.



Either raise your own transplants in sterilized beds or buy them from a reputable dealer. Do not purchase transplants with galls or swellings on their roots or plants that have a brown discoloration on the stem at the ground line. Also, avoid transporting soil or tools from known disease areas to disease-free areas.

**Eradication** is the elimination of the disease-causing organism after it has become established on a plant. Eradication can be accomplished by several methods. Remove plant debris or infected plant parts after each growing season. Turn the soil after harvest to help break down small roots that may harbor disease. Gardeners may compost if they have a good composting system; otherwise, these piles may serve as a source of pathogens. Prune or remove twigs and branches of woody plants. Keep gardens weed free. Weed removal also can increase air movement and thus decrease conditions that favor disease development. So that pathogens do not spread from one area to another, always disinfest machinery and other tools with steam, hot water under pressure, or a 10 percent solution of household bleach diluted with water.

Avoid planting the same crop in the same area of the garden year after year. Occasionally, disease-causing organisms that live in the soil may build up and prevent satisfactory growth of plants. Pathogen-free soil is preferred. Sterile potting mixes are available at many garden centers. However, it may be desirable to sanitize small quantities of soil on your own. There are several nonchemical methods available to eradicate or reduce pathogens in the soil. The use of dry, steam or solar heat are the most effective nonchemical means to sanitize soil. The time to treat soil is before seeding or transplanting

**Cultural management** involves avoiding the onset of disease. To accomplish this without pesticides, create an environment unfavorable to pathogens.

- Don't work in the garden when plants and soil are wet.
- Make sure plants are spaced properly.
- Avoid excessive soil moisture.
- Fertilize plants properly based on soil nutrient analyses using either

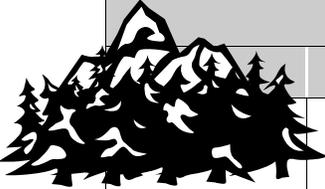
In other words, use good cultural management. Healthy plants are less likely to have disease problems than weak, undernourished ones. Grow plants under optimum conditions and there will be fewer disease problems. Control of most plant diseases **can** be accomplished without pesticides. Use sound cultural practices, sanitation and well-adapted plant varieties to reduce disease problems. It is important to realize that you must accept some disease loss.

Don't expect a perfect garden or plant if you do not want to use chemicals. For more information on nonchemical disease control contact your local Flathead Extension Service by calling (406) 275-2756 or send an email to Flathead Reservation Extension Office. For a complete copy of this article go to: <http://www.ext.colostate.edu/pubs/.garden/02903.pdf>.



## Making a Difference on the Flathead Indian Reservation

MSU Extension is an equal opportunity/affirmative action provider of educational outreach.

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