



Ag Connection

Your local link to MU for ag extension and research information

<http://agebb.missouri.edu/agconnection>

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Shoo Fly Shoo

More than 100,000 different kinds of flies have been discovered and named worldwide. Horn flies, stable flies, and face flies are just a few of the species which may cause economic loss in the cattle industry. The economic impact includes losses associated with decreased feed conversion efficiency, increased stress; which in turn can cause decreased birth weights and weaning rates, and overall poor general health. Losses associated with horn flies alone in the U.S. are estimated at \$800 million annually.

The horn fly is one of the most important fly pests of pasture and range cattle and is about the only fly which stays on the animal long enough for an insecticide to control. Horn flies remain along the withers and down the back to the tail head and only leave to lay eggs in fresh manure. Their life cycle from egg to adult is completed in 10-20 days depending on temperatures. Adults will take 20-30 blood meals per day leading to significant economic loss from decreased weight gains including significant decreased calf weaning weights. Animals with heavy horn fly loads tend to bunch up or huddle together leading to a change in grazing patterns. Observation of animals for fly load should be done between 9:00 a.m. and 1:00 p.m. while the insects remain on the back and sides of the animal. The main control methods for horn flies include ear tags, pour-ons, and oilers or dust bags in the pasture.

The stable fly is another species of great interest. Unlike the horn fly, the stable fly does not remain on the animal for any length of time which makes chemical control difficult. Stable flies congregate on legs, take a blood meal and then fly off. Adults lay eggs in moist decaying vegetation such as compost piles, hay bales, straw animal bedding, decaying fruits and vegetables, and grass clippings. Larvae develop over a period of 15-20 days depending on temperature. Hay residue and manure are ideal habitats for stable fly development. Since chemical control is difficult, management strategies are the best way to combat stable flies. Unrolling round bales during winter feeding can help spread hay residue and distribute manure, decreasing habitat for developing larvae. However, feeding on the ground could potentially increase the spread of internal parasites such as the brown stomach worm. If hay rings are used, move hay rings around to prevent a concentrated area ideal for stable fly development. After feeding in one location, disrupt the habitat left by the bale by raking through with a harrow or piling it up. Previous research has shown 72% of weight loss from stable flies is caused by the animal's change in behavior, including bunching; while 25% of weight loss is attributed to actual feeding by the stable fly. The stable fly will travel and can cover considerable distance; therefore, if a neighbor does not manage hay residue, stable fly control can be very difficult.

Face flies feed on the secretions from the eyes and nose, as well as, on manure liquids, and blood from open wounds. They are a non-biting species of fly, but can still cause serious economic loss. Face flies are a known vector for *Moraxella bovis*,

the principal causal agent of bovine pinkeye. Control is often difficult for face flies, as they too remain on the animal for only a short time. Females lay eggs on fresh cattle manure and the maggots feed on manure during their development which takes between 12 and 16 days.

Flies are usually the greatest problem during the second half of the grazing season. Fly control should be started once the threshold of 200 flies per animal is reached for best results. A multifaceted approach is best. Multiple strategies should be used since the use of any insecticide will eventually lead to resistance. Products should be rotated and used according to the label directions. Control methods should be discussed with a veterinarian as results vary based on method and species of insect targeted.

Ear tags can be an effective control method as long as they are used properly. Follow the recommended number of tags, which in many cases calls for two tags per adult animal and one tag per younger animal. Ear tags should only be used when needed since applying tags too early can foster resistant flies. Leaving tags in too long can also have the same effect. It is important to pull tags as soon as possible after the fly season or if the fly population increases. Insecticide is released by the tag at an effective level for a certain amount of time but then drops off quickly. During this period of decreased insecticide release, partially resistant individuals have a higher chance of survival leading to resistance. It is recommended to use a pyrethroid tag for two consecutive years and then switch to an organophosphate for one year to reduce pyrethroid resistance.

Back rubbers or dust bags are an easy and effective control method. The key to success with this type of control is proper placement of the rubs or bags and keeping them charged with insecticide. Fence off an area to force the animal to come into contact with the rub or bag. Placing them in the entry way to the water or mineral source can be an effective location to ensure animal contact. Pyrethroids or organophosphates are both available options for this method.

For more information on fly control methods contact your herd veterinarian or local MU Extension livestock specialist.

[G1195 Walk-Through Trap to Control Horn Flies on Cattle](#)
[G7013 Protecting Cattle from Horse Flies](#)
[G7388 Household Flies](#)

Source: *Heather Conrow, livestock specialist*

Documentation

Even though income tax time is over for most of us, there are additional documents which need to be kept.

Legal issues and lawsuits have become more common and **documentation** could save time and money if and when it happens. New landowners may utilize land surveys and may be unfamiliar with laws and traditions. The following documentation should be retained by landowners on both sides of the property line.

1. **Land Surveys** are recognized today as the best way to determine where lines are located; however, as good as they are, surveys have never been infallible. Surveys can only be as accurate as the permanency of the bench markers used during the initial survey, the distance between the known bench markers, and other laws in place. Surveys are very expensive.

2. **Deeds of Trust** are also very good depending how accurate and far back they can go. County recorders can assist in finding those documents.

3. **County Assessor's and Farm Service Agency (FSA) maps** can be useful at times, especially when determining acres and in some cases fence lines and other issues. For example, if a problem arises with tree removal, an older map may clarify an issue.

4. **Photos** can be admissible in court and provide documentation. Date stamped photos of fence lines can help determine adverse possession cases.

5. **Land use documentation** such as timber cut, fee hunting, lawn mowing or crops grown, can be important determining adverse possession and easement claims.

6. **Paid invoices, income, and printed materials** may be valuable documentation in the future. Paid invoices for fence materials, farm lease checks, gravel purchased, and others may be needed to solve disputes. IRS tax records can be destroyed generally after 7 years (less in some cases), but might be necessary in other situations.

7. **Land purchases** depend on how it was obtained. If it was gifted, then knowing the year and price paid of the original purchase is of critical importance. If it is an inheritance, the basis depends on the fair market value of the land when it was inherited. (MU G403, Missouri Farm Land Values contains historical land values, which may be helpful.)

Records take continual maintenance but can be invaluable should unforeseen issues occur in the future.

Remember University of Missouri Extension has specialists who can discuss situations and provide resources. MU Extension specialists are not attorneys and are not substitutes for legal advice but can provide information and answer some questions.

Source: *Joe Koenen, ag business specialist*

Brown Marmorated Stink Bugs

Brown marmorated stink bug (BMSB) is an invasive insect first found in Pennsylvania in the mid 1990's. It is thought to have arrived in the United States in a shipping container from Asia. Currently, it has been detected in 47 states, including Missouri, in the US and 4 Canadian provinces. It causes severe agricultural damage in several states, particularly in the eastern US, and is a nuisance to both agricultural producers and homeowners in many other states.

Brown marmorated stink bugs are shield shaped, approximately 14 to 17 mm long (about the size of a dime), and various shades of brown. The adults are similar in size and shape of other stink bugs, but can be distinguished by the light-colored bands found on the antenna and alternating light and dark bands which appear along the edges of the abdomen.



Brown marmorated stick bug will feed on over 100 plant species, including field crops, fruits, vegetables and ornamental plants, potentially causing significant economic loss. Feeding damage on vegetables like beans, leave sunken areas and deformed pods. Feeding on fruits like apples, results in "cat facing" which renders the fruit unmarketable. Fruit like tomatoes may have spongy areas and internal tissue damage as a result of BMSB feeding. Monitor for the presence of BMSB. If found, spraying field borders can be an effective method for reducing BMSB infestations in garden and crops fields.

In the fall of the year, BMSB may be found inside of homes seeking shelter for the winter. The insect does not cause damage to structures, but will emit a strong odor if crushed or sucked into a vacuum cleaner. They do not pose a significant health risk to humans. Some individuals may have an allergic reaction to the odor (rhinitis and/or conjunctivitis) or a skin reaction (dermatitis) if the insect is crushed on exposed skin.

Monitor for insects from late May until early October. A pesticide application around the perimeter of the home when the insects first appear may be effective for a short time. A more effective way of controlling BMSB is to prevent the insect from entering the structure. Cover windows with screens and seal cracks around windows and doorframes. Rake debris away from building foundations. Cover chimneys with screen to prevent entry. Caulk any cracks in building foundations and around exposed pipes to prevent insects from entering.

For more information visit the University of Missouri IPM webpage: <https://ipm.missouri.edu/pestMonitoring/bmsb/>.

Source: *Valerie Tate, agronomy specialist*

Gardening in June

Ornamentals

- ◆ Deadhead bulbs and spring flowering perennials as blossoms fade.
- ◆ Watch for bagworms feeding on many garden plants, but especially juniper and arborvitae.
- ◆ Thin seedlings to proper spacings before plants crowd each other.
- ◆ When night temperatures stay above 50 degrees, take houseplants outdoors for the summer.
- ◆ Apply a balanced rose fertilizer after the first show of blooms is past.
- ◆ Rhizomatous begonias are not just for shade. Many varieties, especially those with bronze foliage, do well in full sun if given plenty of water and a well-drained site.
- ◆ Most houseplants taken outside prefer a bright spot shaded from afternoon sun. Check soil moisture daily during hot weather.
- ◆ Apply organic mulches as the soil warms. These will conserve moisture, discourage weeds, and enrich the soil as they decay.
- ◆ Apply a second spray for borer control on hardwood trees.
- ◆ Continue spraying roses with a fungicide to prevent black spot disease.
- ◆ Trees and shrubs may still be fertilized by July 4th.
- ◆ Pruning of spring flowering trees and shrubs should be completed before the month's end.

Vegetables

- ◆ Repeat plantings of corn and beans to extend the harvest season.
- ◆ Plant pumpkins now to have Jack-o-lanterns for Halloween.

- ◆ As soon as cucumber and squash vines start to 'run,' begin spray treatments to control cucumber beetles and squash vine borers.
- ◆ Start seedlings of broccoli, cabbage and cauliflower. These will provide transplants for the fall garden.
- ◆ Stop harvesting asparagus when the spears become thin.
- ◆ To maximize top growth on asparagus, apply 2 pounds of 12-12-12 fertilizer per 100 sq. ft., water well and renew mulches to conserve moisture.

Fruits

- ◆ Oriental fruit moths emerge. They are most serious on peaches where the first generation attacks growing tips. Wilted shoots should be pruned out.
- ◆ Thinning overloaded fruit trees will result in larger and healthier fruits at harvest time. Thinned fruits should be a hands-width apart.

- ◆ Spray trunks of peach trees and other stone fruits for peach tree borers.
- ◆ Prune and train young fruit trees to eliminate poorly positioned branches and to establish proper crotch angles.

Miscellaneous

- ◆ Early in the month scout for bagworms. If found, treat while the caterpillars are still small and most vulnerable.
- ◆ Dethatch zoysia lawns as new growth begins to keep the lawn vigorous and reduce disease problems. Stop fertilizing cool-season grasses until fall.
- ◆ Prune spring-flowering shrubs immediately after flowers fade to avoid reducing flowering next year.

Source: Missouri Botanical Garden