



Northeast Missouri Ag Connection

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<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 approximately \$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

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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.

Source: *Heather Smith, Livestock Specialist*

Insect Pests and Disorders of Tomato Plants

Many gardeners look forward to that first, juicy, red tomato. But, getting it is not always easy. Tomato plants are prone to many insect pests, diseases and disorders. The following are a list of insects and tomato disorders to be aware of.

Chemical injury: Drift from 2,4-D and similar chemicals commonly used on lawns and in fields may cause distorted leaves, twisted stems, dropping of flowers and fruit abnormalities. The drift may originate half a mile or more away. Sprayers that have been used for herbicide and then used for disease and insect control on tomatoes may also be a source of contamination.

Walnut toxicity: Plants growing near black walnut trees may wilt and die. Avoid growing tomatoes within 50 feet of these trees or where they may come into contact with walnut roots.

Leaf roll: Most common on plants that have been pruned and on early-season varieties. Older and lower leaves of some tomato varieties may roll and become stiff and leathery. It is not a disease and is most common on plants that are trained and pruned. It can also be a result of hot, dry conditions. Fruiting is usually not affected by this condition.

Flower drop: Especially noticeable on early flowers when the grower is anxious for fruit to set for an early harvest. The problem occurs when night temperatures are lower than 55 degrees Fahrenheit; when day temperatures are higher than 95 degrees; or when night

temperatures remain above 75 degrees. Hot drying winds may intensify the problem.

Water Wilt: This often occurs in seasons of rainy weather. Plants take in too much water causing them to wilt. This is more common in poorly drained soils. Under soggy soil conditions, tomato roots use up available supplies of gaseous soil oxygen and carbon dioxide levels rapidly build up. Roots of tomato plants can't survive without oxygen, and root death leads to plant wilting. Peppers and other vegetable crops are also susceptible to "water wilt."

Aphids: Small, pear-shaped insects that congregate on the top growth or undersides of leaves. Aphids damage tomatoes by sucking plant sap and excreting a sticky substance on the foliage and fruit, making the fruit unattractive. Besides rain, insecticidal soaps and certain chemicals, controls include removing weeds, which may serve as hosts for aphids.

Hornworms: These are large green worms with a horn on their head, up to 4 inches long. Hornworms eat tomato foliage and fruit. Handpick them if there are only a few. Companion planting using basil helps repel hornworms.

Tomato fruitworm: This worm is typically green or brown and eats holes in fruit. Sprays during June help control this insect. Make several applications if necessary. Companion planting using basil helps repel this pest.

Stink bugs: Brown, green, or black shield-shaped bugs that give off a foul odor. They suck juices from the plant and cause hard, white spots just under the skin of the fruit. Organic and synthetic sprays are available for stink bug control.

Source: *Jennifer Schutter, Horticulture Specialist*

Managing Timber

For many woodland owners selling timber involves selecting the highest value trees and harvesting them. MU Extension state forestry specialist Hank Stelzer cautions woodland owners to consider the long term impacts when selling timber and avoid a practice known as "high-grading". High-grading is harvesting

all the best trees and leaving only low value trees that are not as profitable to harvest. High-grading can occur with the practice of "diameter-limit cutting," which selects trees for harvest that are above a certain diameter.

To better explain high-grading, Stelzer often uses an analogy with a livestock herd. High grading timber is like a rancher selling his prize winning bull and keeping a loser bull for breeding. This management strategy of cashing in top performing stock and investing in poor performing stock leads to poor performance over time.

To avoid the situation where the runts of the litter are providing the seed for the next generation of trees, Stelzer recommends selective cutting. This practice seeks to maximize profit without harvesting prize trees at a time when they are producing seed. The goal of selective cutting is to increase the value of the woodland over time for wildlife value and future harvests. Selective cutting is best accomplished by a trained logger or forester marking trees for harvest. Trained loggers and foresters may be aware of potential markets for poor performing trees, and know the value of removing poor performing trees to open up the canopy for high value seedlings to grow.

Managing woodland in a way that improves its value over time is not easy. For help, see MU Guide G5051, "Selling Timber: What the Landowner Needs to Know". This guide is available online at extension.missouri.edu or can also be ordered from your MU Extension County office. Another source of assistance with managing forest resources is the Missouri Department of Conservation, which employs Resource Foresters to help woodland owners in Missouri. For quick help finding private foresters visit the Missouri Consulting Foresters Association website, www.missouriforesters.com.

To stay up date on issues impacting woodland owners consider subscribing to the Green Horizons newsletter. The Green Horizons newsletter is published three times a year by the MU Center for Agroforestry in conjunction with the Forest and Woodland Association of Missouri. It is also available online at <http://agebb.missouri.edu/agforest/>.

Source: *Max Glover, Agronomy Specialist*

2015 Management Intensive Grazing Schools

Grazing schools are a great way to learn hands-on management tools that will improve forage production. Improved management of forage means lower cost of production and a stronger bottom line for livestock producers. A secondary benefit of attending this school is the eligibility for district cost share for a grazing system.

One upcoming grazing school will take place in Lancaster at the Schuyler County Nutrition Site on the NW Corner of Square on June 5 and 6. A highlights of this grazing school will include: two farm tours to demonstrate various types of watering systems, fencing, and livestock rotations.

Cost of the two-day regional grazing school is \$150 for the first person, and \$75 for the second person per farm/business. Payment is due by May 29th. The fee includes materials on grazing management specific to the Midwest, two meals, and refreshments. A minimum of 15 registrations are needed to hold the class.

The Schuyler and Putnam Soil and Water Conservation Districts are partially subsidizing the cost for landowners from these counties if you sign up early. No late registrations will be given this assistance.

A detailed list of other upcoming Regional Grazing Schools can be found at: <http://mofgc.org/schools.pdf>

For more information on grazing schools, contact your local University of Missouri Extension office

Source: *Darla Campbell, Ag Business Specialist*