Protecting livestock and companion animals from insect attacks can be a challenge. This is especially true with a wet spring followed by above average summer temperatures. These conditions are conducive to producing large populations of mosquitoes, biting gnats, black flies, and non-biting flies, including house flies and face flies. These insects annoy animals, causing them to be irritable, restless, and difficult to manage. Common defensive responses from the animals include head tossing, tail flicking, ear twitching, and foot stomping. It’s not unusual to see animals bunch up on a windy hilltop or completely avoid an area in a pasture because of biting insects. An additional concern with some insects is that they transmit diseases. Mosquitoes are vectors of several encephalitic viruses (those causing inflammation of the brain) including West Nile virus and western equine encephalitis, which can have devastating effects on horses and other equines; black flies transmit vesicular stomatitis, a debilitating, quarantinable disease of horses and cattle; and biting midges transmit bluetongue, a lethal viral disease of sheep and deer.

There are many options for controlling these insects. In this article we will only focus on a few: on-animal insecticide treatments, insect trapping, and removing/secluding animals from areas of heavy insect pressure.

Horses

There are many insects that attack horses during the summer, but mosquitoes are noteworthy both as a nuisance and a vehicle for West Nile virus. Stabling horses during the night when mosquitoes are active may provide some relief but mosquitoes will enter dwellings to bite animals. In many situations, ready-to-use animal sprays may be the best option. These products can be sprayed on the animal or wiped-on using a clean cloth or sponge. Make sure the entire surface of the animal is covered, especially the head. Most sprays need to be re-applied every five to 10 days according to the product label. It is also important to remember to vaccinate horses against West Nile since it is an established disease in Montana.

Trapping mosquitoes with baited traps can provide some relief from mosquitoes but only in small, localized areas. Therefore, trapping has little impact on the overall population. Bug zappers (an electronic grid with an ultraviolet light and a chemical attractant) are used to attract insects and electrocute them. Mosquitoes, however, aren’t attracted to UV light, thus, bug zappers are ineffective on mosquitoes. Bug zappers kill a lot of insects, but mostly are beneficial insects and not pests.

Black flies and stable flies readily attack horses but feed only during the day and will not enter stables or barns. Moving horses inside during the day when these pests are abundant can provide relief. If this is not possible, ready-to-use animal sprays are again the best option.

Non-biting flies (house flies and face flies) are attracted to nasal and eye secretions, sweat, and pooled blood from previous insect bites or wounds on the animal. These insects are annoying because they keep buzzing around the animals’ heads. In many cases, insecticide treatments used for biting flies are also labeled for and effective against non-biting species. Physically preventing flies from annoying horses can be achieved by fitting the horses with a see-through fly mask.

Bot flies present another management challenge. There are two species in Montana, the common horse bot and the throat bot (often called the nose fly). These species neither bite nor sting, but they are problematic because they can frighten horses as they buzz around laying eggs. The common bot lays eggs on the animals’ front legs, which are then ingested during grooming. The throat bot lays eggs underneath the animals’ chin. The larvae of both species hatch, are swallowed, and end up attaching to the stomach lining where they remain for eight to 10 months. Using an oral paste treatment against the
larvae in the fall—about 30 days after the last killing frost—is an effective method of control. Bot egg combs, clipping egg-infested hair, or sponging with a warm-water insecticide rinse will provide some control of the larvae before they are ingested, but overall are not as effective as paste.

Cattle

The same species of flies that attack horses also attack cattle. The horn fly receives the most attention because of its abundance, and because cattle expend a lot of energy fighting these flies. This results in significant losses in milk production and weight gains. It has been reported that an individual horn fly will bite an animal up to 25 times a day. Multiplied by 200 or 300 flies equals a lot of irritation and annoyance for the animals.

Management of horn flies can be achieved using insecticidal ear tags. These tags contain one or more insecticides and should be applied to the mature animals (not their calves) in late spring or early summer. The insecticide is slowly released from the tag, providing season-long control. Horn flies can develop resistance, so use tags containing different insecticides each year. In addition to horn fly control, the Python® Magnum ear tag, containing zeta-cypermethrin, will reduce blood feeding by mosquitoes for four weeks.

Other horn fly control methods include dust bags, oilers, animal sprays, and feed additives. Each provides acceptable control, but has disadvantages of needing frequent inspections or rounding up and working cattle to apply products during the summer. Pyrethroid sprays last a maximum of 14 days, so cattle need to be re-treated—especially during July and August. Dust bags and oilers require weekly checks to re-fill or, in the case of dust bags, replace if torn. Mineral tubs for animals on feed additives need to be checked every couple of days to assure sustained fly control. More information on controlling horn flies can be found in Montana State University Extension MontGuide Horn Flies on Cattle: Biology and Management (MT200912AG, www.msuextension.org/store).

Sheep

Biting midges and mosquitoes are detrimental for sheep because they can transmit sheep diseases. In 2007, biting midges were responsible for a bluetongue epidemic in eastern Montana resulting in a 16-county quarantine during September and part of October. Mosquitoes are the vector of Cache Valley virus—a disease that affects newborn lambs. A Cache Valley outbreak occurred in 2011 in North and South Dakota, Minnesota, and Wisconsin. The disease has not been detected in Montana but the species of mosquitoes that transmits Cache Valley virus in the Dakotas also occurs in Montana.

The 9.5-gram Python® ear tag, at one tag per animal, will disrupt feeding of biting midges for several weeks. This is long enough to interfere with disease transmission. One Python ear tag per sheep reduces blood feeding by mosquitoes by about 85 percent. Pyrethroid spray applied twice during a seven-week period reduces blood feeding by about 55 percent. More frequent spray applications will likely further reduce blood feeding. When using a pyrethroid spray for biting fly control, make sure the face, ears, and belly are treated because many biting flies prefer feeding on areas not covered by wool. Additional information can be found in Montana State University Extension MontGuide Managing Ectoparasites on Sheep (MT201110AG, www.msuextension.org/store).

Many insecticides used as on-animal treatments for horses, cattle, or sheep incorporate three or four different items. Typically there is the active ingredient, a pyrethrum (a natural botanical insecticide extracted from chrysanthemum flowers) and/or a pyrethroid (a synthetic insecticide with pyrethrum properties); a synergist, usually piperonyl butoxide, which enhances the insecticide activity by delaying de-toxification of the insecticide by the insect; and a repellent, a chemical which prevents landing and biting by the insect. These insecticides are relatively safe to humans and mammals but are highly toxic to bees and fish. When applying these or any other insecticide to livestock, make sure you wear proper protective clothing and equipment, follow the label directions, and avoid getting insecticide in the eyes and mucous membranes of the animals.