



Late Season Insect Management

Josh Bushong, Area Extension Agronomy Specialist

As August comes to an end, several insects have started to infest summer crops in the region. Insect infestations in sesame, soybean, and sorghum have been reported throughout north central and western Oklahoma. Early, or full season, plantings could be far enough along, but double crop acres could be high risk for many.

Typically, Sesame in our area is rarely infested with insect pests. Unfortunately, the Sesame Leaf Roller (a.k.a. Sesame Web Worm or Sesame Capsule Borer) came in rapidly as the crop started flowering and setting seed pods. This larva hatches from the snout moth eggs in about 2-3 days. Most of the damage is due to larvae foliar and pod feeding. The larval stages lasts 10-12 days where it grows from about 1/32nd of an inch to 9/16th of an inch.

The larvae are green with black spots and a dark brown to black head. The larva are often found in the terminal with leaves webbed together to protect itself, but can also be found between the pod capsule and stem. After the larval stage, the pest will pupate (in either the web on in soil) for 5-6 days then the moth will emerge. They life cycle will likely continue until a killing frost. Double crop or late planted Sesame will probably be at a higher risk.

Since pigweeds and other Amarnath weed species are a known host, this could be more of an issue in weedy Sesame fields. OSU currently doesn't have a treatment threshold set, but once pod feeding occurs treatment might be necessary. There are two insecticide types labeled for foliar use in Sesame, which are Mustang Maxx (Group 3A Pyrethroid, zeta-cypermethrin) and Prevathon or Coragen (Group 28 Diamide, Chlorantraniliprole).

Ongoing field testing at Texas A&M Agrilife from Dr. Holly Davis shows Prevathon reduced larvae and pupae numbers better than Mustang Maxx. Dr. Davis also mentioned spray coverage and canopy penetration are important. In addition to the Sesame Leaf Roller, corn earworm have also been reported in Sesame in this region. Continue scouting for both pests to prevent pod damage.

There have been multiple caterpillars found in soybean fields. Green clover worm seems to be most prevalent. Loopers, clover worms, and corn earworms generally feed on foliage and are referred to as defoliators. Some pests like corn earworm can also feed

on pods. Treatment thresholds vary depending on crop stage and are based on percent damage to the crop.

A lower threshold of 15-20% defoliation is used when the crop is in bloom to pod fill. As the crop matures, a higher threshold of 35-40% defoliation is used when the crop is at or past full pod fill. Percent defoliation is subjective, but often over estimated as it looks worse than it actually is. Check leaves throughout the plant an average estimate how much of each leaf has been consumed. The treatment for corn earworm is 2 per row foot mainly due to pod feeding potential.

Selection of insecticides can depend on the predominant species of caterpillar present in the field. Soybean loopers are often resistant to pyrethroid insecticides so there are more limited choices for control. Newer biological insecticides can provide control on soybean loopers, but the virus will not control green clover worm. Pest identification is very important. Soybean loopers will have 12 total legs, green cloverworm 14, and corn earworm 16. Consult CR-7167 for soybean insect control options, as these will provide more information on products, thresholds, and rates. Always read and follow the label provided with the product you use.

There have been multiple reports of sugarcane aphids infesting sorghum in northwest Oklahoma. OSU encourages producers inspect fields weekly, but once aphids are detected increase sampling to two times a week. OSU recommends treating once 30% of plants are infested with 50 or more aphids per plant. Spray coverage and canopy penetration is also critical for adequate control to limit the likelihood of a second application.

Scouting for Sorghum headworms (either corn earworm or fall armyworm) needs to happen every 3-5 days from full panicle emergence until hard dough stage. There have been reports of corn earworm. There have promising reports of the new biological insecticide product Heligen in the region when applied early when larvae are small, up to the third instar. Larvae can take up to 8 days to die, but feeding will be greatly reduced. The virus will continue to infect and control later populations and seem to be providing about a month of residual control. Heligen will only infect corn earworm.

Consult EPP-7087 for sampling procedures for sorghum headworms. Both Prevathon and Blackhawk insecticides are good options for control that won't flare aphids. For early planted sorghum where sugarcane aphids are less of a risk, there are other Group 3A pyrethroids insecticide options.

As always, be sure to visit the OSU Extension office in your county to find out more information.

Fighting the Spoilage Battle with Proper Bale Storage

Dana Zook, Extension Area Livestock Specialist

Depending on who you ask, the term “forage production” will have a different meaning. For some livestock producers, forage production is defined as growing forage for grazing. Other producers consider forage production as growing forage that will be harvested for hay in a round baler. Most producers utilize both sources as feed sources for their livestock. As one would guess, since the invention of the round baler in the 1950’s, the US has seen a significant increase in hay production. More specifically, the Livestock Marketing Information Center reported Oklahoma produces 285% more tons of hay (non-alfalfa) today than in 1974. Yes, some of that production goes to other animals but the bulk of it is used for cattle production. For livestock producers, round bales are extremely convenient. Convenience in this case comes at a cost. Harvested hay will always be more expensive than grazed forage and deficiencies are present in storage, transport and feeding. Today, I wanted to take some time and address losses that can occur during round bale storage.

Since the creation of the first-round bale decades ago, livestock producers have been fighting the battle of spoilage. Even when put up right with low moisture and proper density, spoilage can occur. So how do we fight this spoilage battle? Bale storage has a lot to do with the amount of spoilage that can occur. Keeping rain and snow away from the bales is a big factor and bales that are in a barn or are protected from the elements have very low spoilage loss (2-10%). But not every producer has the luxury of a hay barn and other things can be done to help preserve quality. For most producers, outside storage is the most used method.

There are two keys to making and storing quality bales. Baling smart is the first key. Creating a dense bale with a tight core will keep the bale from squatting. This will reduce the amount of hay exposed to the ground. Bale at the correct moisture to preserve leaves and wrap with net wrap. Storing smart is the second key. Store the bales on a well-drained, gradual slope. The bales should be butted together tightly in rows in a North-South direction. Air circulation is important and so keep each row of bales 3-4 feet apart. Do not stack the bales or put them in an area with shade. Sun exposure and air circulation will ensure drying after wet weather events.

As you can see, getting rid of water is the key to all this. Another tip to help shed rain is creating a good “thatch” on the bale. “Thatch” is described as a layer on the outside of the bale formed from leaves on either grass hay or alfalfa. A good thatch layer will allow rain and moisture to be shed from the bale and ensure drying. There are also benefits to net wrap rather than twine in the ability of the bales to shed water. Twine wrapped bales will not have a good thatch because leaves are knocked off the exterior of the bale as the twine is wrapped in the baler. Net wrap only requires the bale be turned a few times within the baler leaving less damage to the bale’s exterior. The

addition of net wrap to a well thatched bale will greatly improve the quality of the stored hay, even when exposed to the elements.

My thoughts on this topic came from a recent presentation about round bale storage by Dr. Kevin Shinnars who is an Ag Engineer at the University of Wisconsin – Madison. If you are interested in this excellent webinar go to <http://beef.okstate.edu/> and look for the webinar titled, *The Way You Stack Round Bales Matters*. For more interesting webinars related to beef, sign up for OSU Extensions Beef Webinar Series titled *Ranchers Thursday Lunchtime Series*. The upcoming series focus is Feeding Alfalfa.

Weaning Management to Reduce Stress

Britt Hicks, Ph.D., Area Extension Livestock Specialist

For spring-calving herds, weaning season is right around the corner. Weaning is one of the most stressful events in a calf's life. Minimizing weaning stress should improve calf health and weight gain. Beef calves are traditionally weaned by abrupt remote separation from their dams, kept in a lot and fed. Fence-line weaning has gained popularity in recent years over traditional methods because calves show less behavioral stress, vocalize less (bawling), spend more time eating and gain more weight following weaning. With fence-line weaning, calves are separated from their mothers but are allowed to see, hear, and smell their mothers. Depending on the fencing used, physical contact may also be possible (place in adjacent pastures).

University of Arkansas research from 2012 evaluated the effects of weaning method (fence-line vs. traditional) and time of day (morning vs. evening) on behavior and performance of fall-born calves. In this study, crossbred fall-born calves were allotted to the following weaning treatments: 1) fence-lined weaned in morning, 2) fence-lined weaned in evening, 3) traditional weaned in morning, and 4) traditional weaned in evening. The calves assigned to the morning weaning treatments were gathered at 7:30 am, separated from their dams, weighed, and either placed in 4-acre paddocks adjacent to their dams (fence-line weaning) or in 1-acre drylots away from their dams for 14 days (traditional weaning). The calves assigned to the evening weaning treatments were gathered at 5:30 pm and handled the same as the morning treatment groups. During the weaning period, all groups had ad libitum access to water, trace mineral salt, and were offered 2 lb per head per day of dried distiller's grains. In addition, the traditional weaned groups were offered medium quality hay. Each treatment group was evaluated for vocalization and behavior (walking rapidly, running, standing, or lying down) at approximately 12, 24, 48, and 72 hours after weaning. After the 14-day weaning period, the calves were gathered and reweighed.

These researchers reported that the percentage of calves walking rapidly, standing, or lying down did not differ across treatments. However, the percentage of calves

vocalizing were greater for morning weaning compared with evening weaning (67 vs. 42%) and for traditional weaning compared with fence-line weaning (62.5 vs. 46.5%). In addition, during the 14-day weaning period, evening weaned calves gained 86% faster than morning weaned calves (2.70 vs. 1.45 lb/day and fence-lined weaned calves gained 59% faster than traditional weaned calves (2.55 vs. 1.60 lb/day).

The results of this study suggest that weaning fall-born calves in the evening may reduce the number of calves vocalizing and may increase calf gains over the weaning period. These researchers suggested that this might benefit producers that sell calves to a cash market shortly after weaning. Fence-line weaning might also result in fewer calves vocalizing during the weaning period and improve performance compared with traditional weaning. Virginia (2008) and California (2003) research showed that fence-line contact between mother and calf for seven days after weaning resulted in less stress on calves than that associated with the traditional abrupt separation of the calves from their mothers which minimized reductions in weight gain associated with weaning.

Fence-line weaning takes good, well maintained fences and adequate water supplies for both sides of the fence since a large number of cattle are going to be congregated in a small area for several days. Even though fence-line weaning is not always possible or feasible, minimizing stress is still important. Tips to minimize stress from weaning to shipping include.

- Provide calves access to the weaning area (pen, trap, or pasture) a few weeks prior to weaning so calves do not undergo the stress of an environment change at weaning.
- Allow fence-line contact between calf and dam for four to seven days following weaning. Fences should be sturdy and allow nose to nose contact while preventing nursing.
- If fence-line contact is not practical, move cows far enough away that they cannot hear the calves bawling.
- Move the cows to a new location when cows and calves are separated at weaning. Do not move the calves.
- If weaning in a drylot or corral, place feed bunks, hay, or water troughs along the fence to minimize perimeter walking.
- Do not castrate, dehorn, or brand calves at weaning. These practices should be completed at least three weeks before weaning and preferably prior to three months of age.

Can I Afford to Expand?

Trent Milacek, Area Ag Economics Specialist

Producers often ask the question, “Can I buy a piece of land and pay for it running cattle or farming?” This is a simple question that is often met with a simple “no”. The reason the answer is no is much more complicated.

The easiest and least expensive way to expand a farming operation is through leased/rented ground. These leases are either on a share-crop arrangement or cash rent. For simplicity, we will assume the added ground will be cash rent.

Valuing cash rent is never easy either. Multiple things come into play such as farm productivity, location and producer rivalries all influence the price a parcel can fetch on the open market. To assist producers with valuing cash rent, OSU publishes the *Oklahoma Cropland Rental Rate Survey CR-230*. This publication states that the average farmland rental rate in Oklahoma for 2018/19 is \$32.90/acre.

This creates another question that is very interesting and unpopular among producers, “Is that enough?” Can landlords afford to rent land for that much money? Another way of looking at it is this; would a farmer be indifferent between buying land to farm or renting it out for \$32.90/acre?

How much is land worth? OSU also publishes land value data. A short 10 years ago, the average Oklahoma cropland sales price average \$1,212/acre and pasture sold for \$1,437/acre. Compare that with today where, cropland averages \$1,838/acre and pasture sells for \$2,081/acre. These numbers might come as a shock where pasture is more valuable than cropland. However, our state is very diverse with a majority of the cropland in western arid regions of the state and more pasture in the wet eastern regions.

Here is an example, assume a farmer wants to expand his operation by 100 cropland acres. He can lease cropland for \$32.90/acre or buy land for \$1,838/acre. Which should he choose? Using a simple amortization calculator and ignoring closing costs and commissions we can get close to determining the cost of the land. A 30 year mortgage at 5.5% interest with no down payment on \$183,800 will result in an annual payment of \$12,753.31. The total interest paid on the loan is \$198,799.

The farm will have to generate at least \$127.53/acre to cover the payment. That does not include the fact that the money used for the principal payment is not tax deductible and will have income tax due on it. To expand the farm by purchasing is \$127.53/acre compared to \$32.90/acre by leasing.

So why would a landlord lease ground for \$32.90/acre? As we can see, simple interest (or the opportunity cost of capital) on the farm is \$10,109/year at a 5.5% annual rate of return. That would be a conservative return on investment if the money was invested

elsewhere. By that calculation the land rent would have to be \$101.09/acre to cover the opportunity cost of capital for owning the land.

There are a few obvious answers to why there is a discrepancy here. It is rare that land is not purchased solely for its farming profit. Land is also bought with money received by outside income sources like off farm jobs and energy income. Also, inherited land that is sold could result in substantial capital gains taxes making the sale prohibitive to some.

Therefore, if you purchase land to farm and expect the farming enterprise to pay for it, interest rates will have to be low, the purchase price must be very attractive and standard farming enterprises should be expanded in order to be successful.

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Farm Management Resources Found on Your Smartphone

Dr. Rodney Jones, Ag Finance and Management Professor

Brent Ladd, Assistant Extension Specialist

Producers can access digital farm financial management, production, marketing, and risk management topics online by visiting the e-Farm Management website. This site catalogs videos, decision tools, and publications for farmers and ranchers to strengthen their farm management skills.

In the Tillage Series – Types of Tillage video, viewers learn about the two main types of tillage. The video discusses the main purposes of primary and secondary tillage. Lastly, they see examples of the various types of tillage.

To view this video and find additional information on grain production, visit:

<http://agecon.okstate.edu/efarmmanagement/grain.asp>.

More information on this and other farm management topics may be found: 1) by contacting your nearest Extension Educator

(<https://extension.okstate.edu/county/index.html>) 2) on the e-farm management

website (<http://agecon.okstate.edu/efarmmanagement/index.asp>) or 3) on the OSU

Agricultural Economics YouTube Channel

(<https://www.youtube.com/user/OkStateAgEcon>).

Dispersal of Blackbirds

Dwayne Elmore, Ph.D., Extension Wildlife Specialist

As we approach fall, complaints about blackbird congregations/roosts typically increase in Oklahoma. This is particularly a problem in large parking lots, urban streets, and residential areas. There are several birds that congregate together including: great tailed grackle, common grackle, European starling, red-winged blackbird, and brown-headed cowbirds. All of these birds are dark and collectively called blackbirds. Blackbirds congregate during late summer in anticipation of fall migration, although some of these flocks will remain in Oklahoma throughout the winter, especially in southern Oklahoma. While congregations of blackbirds can present a human health concern due to disease, it primarily presents a nuisance issue as they are noisy and produce a lot of feces that covers cars, homes, and streets. Fortunately, there are several things that can be done to alleviate the nuisance.

Scare tactics such as firecrackers and other noise making devices can be effective at dispersing bird congregations. The key to making this work is repetition. It will often take several days of efforts to move birds to another location. As many of these birds gather for night roosting, using the noise-making devices at sunset is often most effective. In addition to noise, using water can be effective. Once the birds have settled into roosting trees, wetting them down with sprinklers or fire hoses is disturbing and they will attempt to find safer areas to roost in subsequent nights. Be sure to check with USDA Wildlife Services (405-521-4039) before harassing blackbirds with noise or water to obtain any necessary permits. Also, city permits will be needed and communication with the public will help alleviate noise complaints. All but the European starling are native and are protected under the Migratory Bird Treaty Act. The European starling can be killed year-around as it is exotic, but identification is difficult and flocks typically are mixed species. Therefore, lethal control is typically not a viable option.

Habitat modification is the best long-term solution to bird congregations. While it may be more expensive initially, it will often be the cheapest option over multiple years. The primary strategy is to remove roost cover. Trees are one of the most widely used roost cover and the type of tree present has an influence. Avoid planting trees that have a dense structure such as callery (Bradford) pear. Trees that are more open such as redbud are better alternatives. Existing trees can either be removed, replaced, or thinned. Using trees that are more open not only provides fewer perch opportunities, it allows for predators such as owls to have better access to the birds. Power lines are another structure that is problematic. Burying power lines where possible will help avoid attracting bird congregations. Also, flat buildings and signs offer perches. Initial construction should avoid flat surfaces and use >45° when possible. Existing structures can be modified by adding bird spikes which can be purchased online. Netting can also

be used to cover trees and to prevent birds from accessing eaves and other areas of buildings. While expensive, these devices do work and they offer long-term deterrence.



Installed bird spikes, netting, and wire deterrents on a lock and dam in Oklahoma (Photo courtesy of Stacy Dunkin, USACE).

Burning Hardwood Forests

Dwayne Elmore, Ph.D., Extension Wildlife Specialist

While many landowners burn open grasslands during March-July, it can be difficult to carry a fire through forested areas during this period as the leaf litter is often moist, winds are light, and RH is high. In late summer/early fall, conditions for burning forests often improves and fires more readily can be conducted. Historically, fire was common during August-November in Oklahoma, yet few landowners currently use prescribed fire during this period. The lack of prescribed fire in late summer/early fall is unfortunate as this is an excellent time to burn hardwood forests/woodlands for multiple objectives

Landowners interested in reducing understory and midstory woody plants may find that they are able to get better results by burning August-October as opposed to the dormant season (November-March). While results can be variable, some research suggests that early fall can be better for brush control as compared to dormant season and early growing season fire. Additionally, using late summer/early fall as an option greatly increases the window of burn opportunity for landowners and can help ensure that fire frequency is adequate to meet objectives. While season of burn does matter, frequency of fire is the most important aspect.

There are multiple wildlife benefits to burning during the late summer/early fall period as well. Removing the leaf litter during this period makes hard mast more accessible to wildlife. Also, burning in late summer can stimulate germination and accessibility of desirable forbs and cool season grasses, providing food for white-tailed deer and wild turkey throughout the fall and winter. Some hunters are reluctant to burn just prior to hunting season, yet these freshly burned areas make great places to hunt as game will often be concentrated there for food resources.

When using fire in forested areas, choose days with moderate winds to help carry the fire. Winds around 10-15mph are ideal. Low winds do not move the fire quickly and your fire crew will need to be on the fire for a much longer time. Also, be sure that the fuel is dry enough to burn. Leaf litter from trees often holds moisture as it lies close to the ground, so burning when the ground is moist can be difficult. OK-FIRE (www.mesonet.org/index.php/okfire/home) can be used to evaluate fuel moisture and predicted wind speed.



An oak/hickory managed with late summer fire. The site was initially thinned using herbicide and was burned in September two years prior to this photo. Notice the abundant understory vegetation, much of which is preferred food for white-tailed deer.

Extension Experience – Insights into Oklahoma Agriculture

The Northwest Area Extension Staff would like to announce the creation of our new podcast *Extension Experience*. The *Extension Experience* podcast is brought to you by Josh Bushong, Trent Milacek, and Dana Zook. Each week we provide perspective on Agriculture topics and offer insight from our experience working with Extension Educators and Producers across Oklahoma.

The *Extension Experience* podcast is available on Spotify, Google Podcasts, and Apple Podcast platforms. You can also access the episodes on spotlight <http://spotlight.okstate.edu/experience/>.

We hope you consider listening to Extension Experience.

