Fire Ant Season is Here Again

History

Red imported fire ants are thought to have invaded the U.S. at the Port of Mobile, Alabama, in the 1930s. Since that time, they have spread to infest more than 260 million acres, from North Carolina to Texas, with isolated infestations in California and New Mexico. The red imported fire ant was first officially reported in Oklahoma in the mid-1980s, but was probably present in the state before that time. As of late 1999, the red imported fire ant had been found in 25 Oklahoma counties including Pontotoc. Many infestations are thought to be the result of ants being transported in sod or nursery stock

The Mound

One clue to which ant you're dealing with is the nature of the mound. Red imported fire ants build soil mounds that can reach two or more feet in diameter and a foot or more in height and are often mistaken for a gopher mound. The mounds **do not** have a central entrance/exit hole; rather, the ants enter and leave via underground tunnels that radiate out from the mound. When a mound is disturbed, hundreds or thousands of worker ants rush out to defend the colony. Fire ant workers range in size from about 1/8 to 1/2 inch in length. Mature mounds may contain 250,000 or more workers. Identification of worker ants is a difficult task, even for experts.

Damage

Fire ants cause damage in several ways. Their activity causes shorts and damage to insulation in electrical equipment. Their tunneling activity can remove soil from under roadways and sidewalks, causing cracking and collapse of pavement. Their large mounds can damage mowing and harvesting equipment.

The primary concern of most people living in fire ant infested areas is the likelihood of stings. A small percentage of people can experience anaphylactic shock as a result of stings. During hot, dry periods of the year, fire ants may enter homes and businesses in search of moisture and food, increasing the chance of stings.

Controlling Red Imported Fire Ants

The Two-Step Method

Step One - Baits

Fire ant baits consist of insecticides on processed corn grits coated with soybean oil. While baits can be applied as an individual mound treatment, they are best used as a broadcast treatment. Broadcast treatments are less expensive (in terms of product costs and time) and control colonies even when mounds are not visible. For best results, use fresh bait, preferably from an unopened container or one that has been tightly sealed and stored for no more that two years. Apply when the ground and grass are dry and no rain is expected for the next 24 hours. Apply when worker ants are actively searching for food. This can be determined by leaving a small piece of food (chips or meat) near an active mound. If ants are seen removing the food within 10 to 30 minutes, it's a good time to begin application. Ants are less active during cold and hot periods (when soil temperature is less than 70° F or greater than 95° F). In the summer, apply bait in late afternoon or evening, when ants are most active.

Baits can be applied with hand-held seed spreaders. Set the spreader on the smallest opening and make one or two passes over the lawn at a normal walking speed to apply the recommended rate (1 to 1 1/2 pounds per acre, or approximately 4 ounces per 10,000 feet).

Step Two - Individual Mound Treatments
There are a variety of chemical and non-chemical methods for treating individual fire ant mounds. After baiting, treat "problem mounds" (mounds near sidewalks, porches, and other sensitive areas) with the mound treatment of your choice.

Chemical Treatments: Some products, such as those containing 75 percent acephate (Orthene® Fire Ant Killer), are formulated as dusts. Ants walking through the treated soil get dust on their bodies and transport the insecticide into the mound. Within a few days the entire colony should be killed. To use a dust, distribute the recommended amount evenly around the mound. Do not inhale the dust or get it on your skin.

Liquid concentrates are diluted with water and then applied to the mound. These liquid mound drenches kill the ants underground, but must be applied in sufficient volume to penetrate the entire nest (one to two gallons of diluted mixture poured over the top of each mound). Mound drenches generally eliminate mounds within a few hours. When handling liquid concentrates, avoid getting the product on your skin by always wearing unlined rubber gloves. Mix the insecticide in a container such as a sprinkler can. Write "Poison" on the container, and do not use it for any other purpose. Mound drenches should contact the greatest possible number of ants in the colony. The ants are nearest the surface of mounds on sunny mornings following cool nights, so time applications appropriately. During hot, dry weather, the ants stay farther underground, decreasing your chance of contacting them with insecticides.

Granular insecticides are released when water is poured over the granules on treated mounds. To treat a single mound, sprinkle the recommended amount of granules with a measuring cup on top of and around the mound. Then, gently sprinkle one to two gallons of water over the treated mound to avoid disturbing the colony or washing the granules off the mound.

Remember, if you apply less than the recommended amount of water with either liquid concentrates or granular insecticides you can expect poor results. Unless the product completely penetrates the mound, ants will move to a different site via underground foraging tunnels to avoid the poison.

Some products come in aerosol containers to which an injection rod is attached. The rod is inserted into the mound and the insecticide injected according to the label instructions for a quick kill of problem mounds. Contact the Extension Office for a list of chemicals that you can use to treat fire ants.

General tips
Pay special attention to application instructions on the label of the product(s) you use to insure the best return for your money and time. It pays to monitor for fire ant activity before applying

baits, since the success of baiting programs is directly related to the ability of ants to rapidly collect materials and return them to the colony.

Fire ants are probably here to stay. Movement in horticultural and agricultural goods and natural movement during mating flights will continue to spread fire ants to new areas in Oklahoma where sufficient moisture and warm temperatures are present. Current research efforts are targeted toward introducing natural enemies and diseases of fire ants to reduce overall infestation levels. Management of fire ants in the short term can be accomplished with a little care and persistence by following the tips presented herein.

Four Keys to High Pregnancy Rates

Meeting reproductive goals is the most critical production factor affecting profitability in beef cow-calf operations. The key to achieving high pregnancy rates in beef herds is successfully managing the four B's of beef herd fertility: body condition of cows, bull fertility, bugs (infectious agents), and balanced minerals.

Body Condition

Poor body condition of cows is the most common reason for low fertility in beef herds. Body condition score (BCS) at calving is highly correlated to pregnancy rate and BCS at pregnancy examinations correlates almost as well. Body Condition is ranked based on a nine-point scale (1 is emaciated, 5 is good, and 9 is extremely fat). The goal is to calve cows at BCS 5 or above and replacement heifers at BCS 6 or above.

Body condition is influenced by nutritional plane, internal and external parasites, and mineral deficiencies. Inadequate energy and protein intake are the usual reasons for thin beef cows. Underlying causes include overstocking, lack of soil fertility and weed control programs, poor haying practices, and inadequate protein supplementation of poor quality hay.

Winter supplementation of spring-calving cows requires special attention. If hay has less than the required eight percent protein, protein supplementation is needed. When the protein concentration of hay is greater than 14 percent, protein may begin to be fed in excess. Therefore, it is critical to test hay to determine TDN and protein concentrations before the feeding period begins.

Internal parasitism can result in impaired fertility through reduced BCSs. Cows treated for internal and external parasites will have a higher body weight and body condition score leading to a higher pregnancy rate.

Bulls

Breeding soundness examinations must be performed on all bulls every year for beef herds to achieve high pregnancy rates and high weaning weights. Bulls passing the examination get more cows pregnant and do so earlier in the breeding season. The economic benefit of selling heavier

calves is equal to or greater than the benefit of selling more calves.
A veterinarian should test your bulls every year prior to the breeding season, using the measure with the highest correlation to number of calves sired: determination of percentage of morphologically normal sperm cells. Bulls with more than 70 percent normal sperm cells sire high numbers of calves while bulls with less than 50 percent normal sperm cells sire few calves.

Bugs

Biosecurity measures plus vaccinations are necessary to successfully control infectious agents capable of causing early embryonic deaths, abortions or stillbirths.
Biosecurity consists of all measures to prevent introduction of unwanted infectious agents into a herd.

There are two ways to keep chronic carriers and shedders of reproductive pathogens out of your herd: maintain strong fences and only purchase females that are test-negative for persistent infection (PI) with bovine viral diarrhea (BVD) virus and Neospora caninum.

All bulls should test negative for PI with BVD virus. Leased bulls must be culture negative for trichomoniasis. New purchases are given vaccinations during a quarantine period of at least 30 days. Leptospira hardjo-bovis can be controlled by vaccinations and antibiotic treatment during quarantine.

Vaccination is recommended against brucellosis, leptospirosis, campylobacteriosis (vibriosis), and two viruses: BVD and infectious bovine rhinotracheitis (IBR).
Vaccination against trichomoniasis is recommended for herds at high risk. This includes herds located near infected herds and herds already infected with trichomoniasis. Herds leasing bulls should consider vaccination for trichomoniasis.
The highest level of protection occurs four to six months after vaccination. Strategic vaccination involves matching this level of protection with time of greatest risk. The first trimester of pregnancy is the time of greatest risk for losses caused by reproductive infections. Thus, the most effective time to vaccinate for reproductive diseases is three to four weeks before start of the breeding season.

Balanced minerals

Deficiencies of these minerals can impair fertility: phosphorus, copper (only in deficiency secondary to excessive molybdenum), cobalt, iodine, manganese, selenium and zinc. Phosphorus deficiency is especially problematic in rangeland conditions.

A properly balanced loose salt/trace mineral fed free choice is the best way to supply cattle with minerals necessary for optimal fertility.

Conclusion

Adequate feed and parasite control, breeding soundness examinations, an effective biosecurity and vaccination program, and free choice balanced minerals are just a few ways to increase pregnancy rates. To achieve better fertility in your beef cattle herd, just remember the four B's.

How to Collect a Good Soil Sample

Now is the time of year when people begin to think about doing a soil sample to determine how much fertilizer to apply. Trying to guess at the amount or type of fertilizer to apply can be very costly and not very accurate, especially with the cost of fertilizer this year. Whether you are only growing a small garden or several acres of crops the first step to success is the soil sample. The Soil sample results are only as accurate as the sample that is sent in this is why accuracy is of the utmost importance.

Fields used for production of cultivated crops may be sampled any time after harvest or before planting. Generally, two weeks should be allowed for mailing, analysis, and reporting of results. Additional time may need to be allotted for ordering and application of fertilizers, manure, or lime materials.

Noncultivated fields should be sampled during the dormant season. In either case, do not sample immediately after lime, fertilizer, or manure applications because those samples do not represent the true soil fertility.

Fields can be tested annually to measure the available nitrogen pool or as frequently as necessary to gain an understanding of how soil properties may be changing in relation to cultural practices and crop production.

Collect a Representative Sample

Getting a representative sample is simple, but not easy. Research at OSU and other universities has clearly shown that a minimum of 20 cores or small samples taken randomly from the field or area of interest are necessary to obtain a sample which will represent an average of the soil in the field.

These cores should be collected in a clean plastic bucket (to avoid metal contamination) and mixed thoroughly by hand. About one pint of soil from the sample is usually adequate for all tests which might be required. If the sample is too wet to mix, it should be spread out to dry some and then mixed, or sampling should be delayed until the field is drier. It is important to remember that the sample obtained by the above procedure will be an average of the area sampled.

If the area sampled is extremely variable in the soil properties which are going to be tested, then it may be better to separate the field into smaller areas, and get a representative (20 cores) sample from each of these areas in order to determine how variable the field is. In this way, it may be possible to treat some areas of the field differently from others and remove variability so that the field can be sampled and treated as a unit in the future. Variability in a field can often be noted by differences in surface soil color and crop growth or yield.

Using only one sample for a large variable field can be very costly. Since the sample represents an average of the soil in that field, recommendations based on the soil test will likely cause the field to be overfertilized on some parts and underfertilized on other parts. Failure to obtain uniform response to treatments based on a soil test is frequently a result of one sample being used to represent a large variable field.

The range of test values was obtained by testing 40 individual cores taken at random from an "apparently uniform" 80-acre field. The variation is great enough so that for some analyses the average is not a good representation of the field. Areas of the field with the lowest pH, phosphorus, and potassium values will not receive adequate lime or fertilizer if recommendations are based on the average test values.

Regardless of the field or lawn size or main area being sampled, unusual spots in the field (salty or wet spots) should be avoided during the initial random sampling. When unusual spots make up a significant area, they should be sampled separately.

Once you bring the sample in with a small amount of information and $10.00 the sample will be sent to the lab at Stillwater, when it returns I will make some brief recommendations and you will have the test returned to you. It doesn't take long to absorb the $10.00 cost if you can save yourself from over applying only a small amount of unnecessary fertilizer.

Mature Cow Size

Are your mature cows too big? What is the mature size of your cows? What is your average calf weaning weight? If you have never asked yourself these questions, it may be time to.

Why are cow size and calf weaning weight important? They relate directly to your ability to efficiently produce a pound of weaned calf. If you do not know the answer to these questions, you have no idea of your operational efficiency. Average cow weights have crept up over the years, mainly with the thought that weaning weights will increase. However, we may be past the optimal point of cow size and efficiency. A general goal that extension specialists have for a cow is to wean 50% of their mature body weight each year.

Look at these figures. A 1,000-lb cow would need to wean a 500-lb calf; a 1,200-lb cow will need to wean a 600-lb calf; a 1,400-lb cow needs to wean a 700-lb calf. So what is the average cow size and calf weaning weight in Oklahoma? Cow Herd Performance records from the last several years show that the average cow size is 1,315 lbs and the average calf weaning weight is 539 lbs. This makes the efficiency 41%, which is 9% below the recommended average. What is the temptation for selecting for a larger cow? The possibility for a larger calf is what most producers will answer. One important consideration in cow size is that as cow size increases, the cow's ability to produce the recommended 50% is reduced. Most cows will not wean a 700-lb calf at weaning without some form of creep feeding.

Additionally, larger cows have higher feed requirements.

In recent years, with limited forage availability, having a herd of smaller cows that require less feed inputs would be a definite benefit. With the outlook of expensive corn for the future, having a herd of cows with a lower feed requirement will help maintain profits in times of increasing feed input costs.

Some producers might argue that post weaning performance from larger-framed cows is higher than calves from smaller framed cows. This may be true; calves from larger cows have the genetic potential to grow to a larger size and may have higher average daily gains. They will also need to be fed to a heavier weight to be considered finished. However, most producers in Oklahoma do not retain ownership past weaning, so the important consideration for most producers is how to produce a pound of weaned calf as efficiently as possible. This is where a planned crossbreeding program can pay off. It is possible to design a crossbreeding system that allows for the use of moderately-sized cows (1,050- to 1,150-lb cows) to be bred to high growth bulls. This type of system will optimize efficiency by using smaller-sized cows while producing calves with good growth potential.

For more information on setting up a crossbreeding program to increase your cowherd efficiency or to get help determining your current cow herd efficiency, contact the extension office.

How Much Wind Makes it Too Windy to Spray?

Have you ever seen the amount of wind? We might as well be living in the Panhandle of the state. I am starting to develop a permanent lean trying to keep from blowing over. I have seen people chasing their straw hats until they get out of sight. This type of weather is defiantly not conducive to spraying pasture. Fear of drift of product off site should be the main fear of many of the producers this year. One of the main factors is if it drifts off site it is not doing you any good, and it may be damaging something on someone else's property.

There are two basic types of drift - vapor drift and particle drift. Vapor drift is the movement of product vapors resulting from the application of pesticides. Environmental conditions at the time of spraying or post spraying conditions combined with product selection are the largest factors affecting vapor drift. The second type of drift is particle drift, more commonly referred to as spray drift.

Spray drift is the physical movement of a pesticide through the air at the time of application or soon thereafter, to any site other than that intended for application.

One of the most critical factors affecting spray drift is wind. Spray drift increases as wind speed increases. Nozzle manufacturers have brought new nozzle technology to the market in recent years that have significantly reduced the drift potential. Keep in mind that these air-induction or venture nozzles reduce drift -they don't eliminate drift completely.

When people shop for new nozzles one question they invariably ask is how much wind can I spray in with these nozzles? The answer is not as simple as you would like.

Here are some spray recommendations from a number of "experts".

- Do not spray in winds greater than 5 Miles/Hour
- Spray when wind speeds are between 2 and 10 Miles/Hour
- Do not apply when winds are gusty or in excess of 5 Miles/Hour
- Don't spray in winds over 15 Miles/Hour, ideally not over 5 Miles/Hour.

Before you pick your favorite, you should know that one of the above is actually a statement on a product label. That means that this is the legal way to use this product. If you use this particular product you don't have a choice, the label is the law. If you don't follow label directions you are off-label. Feeling lucky?

Most people read labels to determine what pests or weeds are controlled and the product rate to use in different crops. Also on the label will be cautionary statements that address areas such as acceptable conditions at the time of application that include wind speed, temperature and relative humidity. Read the label thoroughly every year even if you used the product in years past. Even though the product is the same, the label may have new information that has been added.

Back to wind. Everyone knows that the drift potential increases as the wind speed increases. This would lead an individual to assume that zero wind or absolutely calm conditions would be almost ideal to eliminate drift concerns. In actual fact, no wind conditions can result in significant spray drift problems. The drift problem may not occur at the time of spraying but a couple of hours after the spraying is finished.

Here's what happens. Let's say your spraying early morning and there is no wind. You are using the latest air-induction nozzles which have good drift management capabilities. The temperature is cool and the humidity is high which means all the droplets stay as droplets. You finish spraying at 7:00 in the morning. You think you have done a great job. Drift is the last thing on your mind.

As you were spraying, the larger droplets got to the target but the small driftable fines are floating in the air just above the field. Yes even air-induction nozzles produce some fine droplets. Since there is no wind these fine droplets are not blown off the field at the time of spraying. Since the humidity is high, these fine droplets are not getting any smaller and are still spray droplets. So we have small droplets of a pesticide floating above the field. At some point in the morning the wind starts to blow and as soon as that slab of air containing floating droplets of a pesticide crosses the line fence you have spray drift. This movement may occur a number of hours after you finished spraying but it will happen.

Calm conditions or no wind conditions are not a sprayer's friend. A little bit of wind is desirable to create turbulent air movement which will carry the airborne droplets down to the target.

So please be careful and read the label. I know it is aggravating trying to spray and you just feel like giving up and spraying in the wind but if you do you may be killing the wife’s flowerbed or the neighbor’s garden.