



James Quinn

The Stealthy Tree Killer- Armillaria root rot

Many homeowners are surprised to find out when a tree is dying that it is caused by a fungus most have never heard about. This fungus is very common and has a wide host range. In the last several years, MU's plant diagnostic clinic has confirmed Armillaria root rot (also known as shoestring root rot) on a wide variety of trees, but has been notable on pin oak, arborvitae, raspberry, rose (the disease resistant knockout) and ornamental pear this year. It can affect almost any conifer or hardwood species, from seedling to maturity, with stressed trees being more susceptible. It is often lethal.

The typical above ground symptoms of Armillaria are slow growth, yellowing and dwarfing of foliage and thinning of the crown. Dieback of branches may occur as the disease spreads, with symptoms developing slowly and intensifying over many years. The most notable characteristic is when the bark cracks on lower stems or at the root flare (accompanied by resin flow on conifers) with the wood underneath decaying. White mats of fungus may be observed, and yellowish/reddish tan mushrooms may occur, especially as wood decay becomes more advanced.

There is no practical way to eliminate Armillaria from trees that are already colonized by the fungus. The useful life of an affected tree might be prolonged, however, by supplemental watering during dry periods and appropriate fertilization to improve overall host condition. In very vigorous trees, the pathogen may be "walled off" and confined to just a portion of the root system or root collar. There are no chemical treatments that can effectively target the Armillaria fungi within diseased trees. Because stumps and root systems of previously colonized trees can serve as "food bases" supporting rhizomorph growth for many years, thorough removal will reduce the risk of infection of other trees. For a more complete disease description and photos, University of Wisconsin has a well written fact sheet for homeowners (<http://wihort.uwex.edu/gardenfacts/XHT1120.pdf>).



It is possible that the Easter Freeze of 2007 may have provided an opportunity for Armillaria to spread. When a plant is forced to regenerate new foliage to replace that lost to a freeze, it draws on carbohydrate reserves in the roots to provide the required energy. To do so, it must convert starch to sugar, which can promote the development of Armillaria or other soil-inhabiting pathogens. Since this disease can be rather slow growing, it may be a few years before obvious symptoms develop. If you suspect a tree has Armillaria root rot take a clear picture of the trunk and the whole tree for a MU Extension specialist to inspect or e-mail James Quinn at quinnja@missouri.edu.

Source: James Quinn, Horticulture Specialist; Dr. Chris Starbuck, Woody Ornamentals State Extension Specialist; and Simeon Wright, Horticulture Extension Associate

Iraq, here I come!

By: Wendy R. Flatt, MU Extension Livestock Specialist



Yes it is true; this Livestock Specialist will be headed to Iraq on September 18th. I have taken a one-year “tour of duty” with the US Department of Agricultural/Foreign Agricultural Service (USDA/FAS) as an Agricultural Advisor on a Provincial Reconstruction Team (PRT), which is a joint venture between USDA and the Department of State (DOS). I am taking a one-year leave of absence from my current position with University of Missouri Extension as Livestock Specialist/County Program Director to go to Iraq. Currently, I am going to Kirkuk, which is in the northeast corner of the country; however this could change as the security situation changes in Iraq. The area around Kirkuk has approximately 750,000 head of sheep and about 90,000 head of cattle in the region. Needless to say, I will have to brush up on my sheep herding skills!

The position is as an Agricultural Advisor, which means a “generalist” in everything; however after emailing the person I will be directly working with in Kirkuk, it sounds like the position will be what I want it to be. The current Ag Advisor I will be working with specifically wanted someone with livestock knowledge and more specifically someone that understands ruminant nutrition. I will be living on a military base with the world’s best military and they will be the ones protecting our group as we go out into the countryside to work with the Iraqi farmers.

Agricultural production in Iraq was obviously greatly hindered under Saddam Hussein’s regime as he was not only a dictator that tried running everything, but the whole society was run under a very socialist economy. What did this mean for farmers? Basically this meant that bureaucrats in Baghdad told the farmers what they were going to raise, how much, and what they would be paid (if anything). The farmers were given their seed, fertilizer (maybe), and other inputs from Baghdad (without any input from the farmers) and then at harvest someone would pick up the crop or livestock and the farmer was given some kind of price.

As farmers in central Missouri can quickly recognize, this type of agriculture limits production and technology. My understanding is that their agricultural production equals that of our production in the 1930’s. Very little advancement of seed technology has evolved on the agronomy side and livestock production has been greatly hindered. This is on top of a two-year impending drought that has the region in its grip, which makes the situation even more interesting. Kirkuk from my understanding is “greener” than other parts of Iraq, even with the drought and is why there is quite a bit of livestock production in the area.

Culturally, the area is very diverse. There are three major

cultures in the region, the Kurds, Turkomen and Arabs all live in this area and all have their own farming techniques and ways of doing things. I’m sure I will not only learn and gain a great deal of knowledge from this experience, but I am hoping I can help in some small way. Since I did not join the military, I feel like this is a way for me not only to help out and represent my country, but also to make the world a little place to live in. Who knows, maybe I can convince those Iraqi farmers that our mid-western distillers grains is the best stuff to feed their dairy and feedlot cattle and open up more markets for our products. The sky seems to be the limit and I am looking forward to the challenge! Don’t think I am not nervous, if I wasn’t nervous about going into a war-torn country, I wouldn’t be human. However, I know the military and God will take care of me and hopefully the Ag Connections audience will send some positive prayers my way. I will try to send updates as my time overseas permits! The key to a country’s security is making sure the people of the nation are fed and hopefully I can help in some small way.

Brewin' Your Own -- Fuel That Is!

Biodiesel is probably the most feasible fuel to produce on-farm. First, there are generally three crops that can be used; soybeans, sunflowers and canola. There are exceptions; most of the engines used on the farm are diesel. There are other concerns that need attention before one invests heavily in the do-it-yourself (DIY) process. Here is a list of questions to be answered before you set up a processing facility.



Do you need a license to produce biodiesel?

A license is **not required** by the Missouri Department of Agriculture, Division of Weights and Measures to produce fuel for your own use, but it does regulate fuel quality. It is responsible to enforce Missouri Revised Statutes, Section 414.032, which states that "all kerosene, diesel fuel, heating oil, aviation turbine fuel, gasoline, gasoline-alcohol blends and other motor fuels" **have to** meet American Society for Testing and Materials (ASTM) standards.

Additionally, biodiesel, gasoline, gasoline-alcohol blends or other motor fuels **may be inspected** to insure that these fuels conform to advertised grade and octane. According to a representative of Weights and Measures, testing to comply with ASTM standards would not be affordable for the DIY biofuel producer. There is a kit available called the pHlip test, which provides a visual analysis that is more affordable for the DIY. However, it won't replace the ASTM testing.

Are there other regulations if I want to make my own fuel?

The Missouri Department of Revenue taxes fuel used for over the road vehicles. If you use the homemade biodiesel in any vehicle traveling up and down the road, you have to pay fuel tax on that quantity. The Missouri Department of

Natural Resources may require permits for air and water quality pollution prevention. Furthermore, depending on the quantity of fuel processed and stored, you may be required to provide secondary containment.

Will engine manufacturers warranty engines using fuel produced on the farm?

It is believed that manufacturers fully support B5 (5% biodiesel [from vegetable oil, soybean oil, sunflower oil etc. or animal fats] & 95 % petro diesel). Manufacturer support for B20 (20% biodiesel [from vegetable oil, soybean oil, sunflower oil etc. or animal fats] & 80 % petro diesel) is **unclear**. If the fuel causes a problem with the engine, the responsibility falls on the fuel supplier. B100 (100% biodiesel [from vegetable oil, soybean oil, sunflower oil etc. or animal fats] & 0% petro diesel) will have to pass ASTM testing in order for the manufacturer to stand behind the warranty.

What insurance issues will be involved in on-farm production such as fire, liability, accident?

Check with insurance agents. Risk of these issues may increase with the production, handling and storage of biofuels.

Are there any cold weather flowability problems?

There is very little problem with B5. B20 however, begins to congeal anywhere from 2° to 10° sooner than number 2 diesel. However, the same measures you use with number 2 diesel to prevent flow problems can be used with the biodiesel blends.

Who will be willing to buy co-products: primarily the glycerin?

There are many uses for glycerin, but how many buyers are going to be interested in small quantities? New developments are coming down the pipe. A University of Missouri researcher has developed a process to convert glycerin to propylene glycol, a bio-based, non-toxic and renewable antifreeze.

How many acres of crop per 1000 gallons of oil will it take to produce fuel?



With a moderate yield of soybeans, sunflowers or canola, 1000 gallons of oil would take about 20 acres of soybeans and 12 to 13 acres of sunflowers or canola.

Producing your own biofuel is possible. You just have a few hoops to jump through. You might want to buy a gallon of vegetable oil, a new blender for your spouse, a little "Heet", some lye and use the old blender to process the oil into biofuel and glycerin-just to see if that's something you really want to do. Be sure to follow a tried and true recipe for this experiment (*Make your first test batch of biodiesel* - <http://journeytoforever.org/biodiesel.html>). To make cleanup easier, put down plastic.

Information from article by Ed Browning, Natural Resource Engineering Specialist

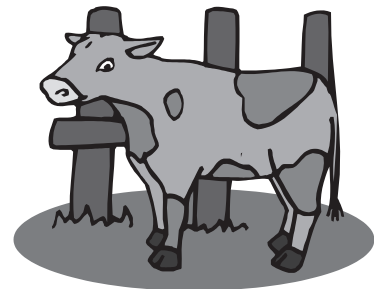
Pre-Weaning Management Considerations

Summer is winding down and soon beef cattle operations will be weaning spring calves. Below are a few management ideas that may help you through this process.

Plan for the weaning event itself. Health, nutrition and facilities are all important components of this process. It is important to have weaning vaccination programs implemented in an appropriate manner. Make sure you pay attention to the need for and timing of calf booster vaccinations. Feed intake is often very limited during the first week after weaning. To aid feed consumption, provide the same feed to the calves before and after weaning. Blends of by-product feeds work extremely well in these diets. I usually recommend hand-feeding a grain mix to have better control of feed intake.

Facilities require special attention. Inspect and fix facilities that may cause injuries to either the cattle or you. Drylot weaning pens should have clean, running water available at all times. Placing feedbunks perpendicular to the fence line will cause calves to bump into the bunks, and may reduce fence walking and increase feed intake. If you are pasture weaning, make sure the electric fences are in proper working order and carrying the appropriate voltage.

Make sure drylot pens are in good working order. Pay attention to how the pens drain. Fill, grade and shape to eliminate low areas that are prone to becoming mudholes. Pay particular attention to areas behind the feedbunks and around water sources.



Forcing cattle to wade through belly deep mud to eat or drink greatly reduces rate of gain. Make sure waterer's are in working order and that electric heating elements are operating properly.

When to wean calves. Many producers have a particular time they prefer to wean calves. Producers should look at grass supplies and body condition of cows as additional factors to consider when determining weaning time. Waiting too late into the fall after most of the fall pasture is gone and the cows have lost significant body condition means increased reliance on hay for the major feed supply for the cows. Nutritionally, there is usually not enough quality to add body condition to cows on hay alone. Weaning after cows have lost significant body condition means grain supplements must be used to increase body condition. Fall is an excellent time to cheaply add body condition to dry cows with stockpiled forage. Weaning earlier in the fall usually means cows don't need to add as much body condition, so overall energy needs for the cow herd are reduced.

Source: Gene Schmitz, MU Extension Livestock Specialist

BOTTOMLINE TIDBITS: CHANGING OR TERMINATING FARM LEASES



Parman Green

Although we are just in the middle of the fall crop harvest, farm landlords and tenants wanting to make changes in their rental agreements need to be reviewing the terms of their current leases. This is a particularly important time of the year because there are lease termination notification periods associated with farm leases – whether the lease is written or oral. An additional point is many landlords and tenants are unaware that when terminating or changing verbal leases, they must give the other party at least **60 days written notice** prior to the end of the lease agreement anniversary.

If you have a verbal lease that has been in existence for several years, it may be difficult to determine the anniversary date. Was your verbal lease agreement entered into on January 1, March 1, or some other date?

A **written lease** should state the date the lease agreement was made and provisions for termination.

So the bottom line is – if you want to change the terms or terminate a verbal lease, put your intentions in writing and deliver the notice to the other party. For example, if you have a lease with an anniversary date of January 1, the party desiring to change the terms or terminate the lease should deliver written notice to the other party before the end of October. Again, this is where a written lease would be valuable - because it would eliminate the potential debate over the anniversary date of the lease agreement. So if you currently have an oral lease, even if you do not plan to change the terms of the lease, there is no better time than now to put it in writing.

Source: Parman R. Green, Ag Business Mgmt. Specialist

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