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Taxation Tidbits: Agricultural Inputs – Exempt from Missouri Sales Tax or Not

The majority of the inputs purchased for use in production agriculture are exempt from Missouri sales tax. However, not all inputs are exempt – which ones are and which are not?

The following is a brief summary of sales tax exemptions for agriculture.

- Farm machinery, equipment, parts, supplies, and lubricants used directly and exclusively in the agricultural production process are exempt.
- Grain bins are exempt, but parts purchased separately are not.
- Fencing and motor fuel used for agricultural purposes are exempt.
- Livestock, animals, or poultry used for breeding or feeding are exempt.
- Feed, additives, medications for livestock or poultry in production of food or fiber are exempt.
- Grains, limestone, fertilizer, herbicides, or pesticides used in connection with the growth or production of crops, livestock or poultry are exempt.

The above listing sounds pretty straight-forward, but the devil is in the details and those lead to different interpretation of the regulations from store to store or administration to administration. For example: fencing materials are usually exempt, but fencing tools are usually taxable; hog rings are usually exempt, but hog ringers are usually taxable; pruning and picking equipment are usually exempt, but small tools are usually taxable.

Purchases for your farming business that meet the following three-part test are good candidates for exemption from Missouri sales tax:

- used exclusively for agricultural purposes,
- used on land owned or leased to produce farm products, and
- used directly in producing farm products.

A good reference is the MO Code of State Regulations (CSR): Title 12 Division10 Chapter 110 Sections 900 to 920.
http://www.sos.mo.gov/adrules/csr/current/12csr/12c10-110.pdf

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

Corn Fungicide Treatment

In the last couple of years it has been common to see producers treating their corn with fungicides. The concern has been if this is always a paying proposition.

If you are intending to apply fungicide to your corn, the best possibility of a return on your investment is

on corn where significant disease pressure is present. University specialists note their primary concern is when disease lesions are present on the ear-leaf and the leaf immediately below the ear leaf. Generally, only when foliar diseases progress up to the ear leaf and infect a large percentage of that leaf's tissue do yield reductions occur. If disease is present in your field, timely application of fungicides is essential. Fields that are most likely to provide a positive response to foliar fungicides include: corn on corn, river bottoms and near creeks, hybrids with weaker plant health packages, and rain and/or fog forecasted. Applications are recommended if a few lesions are observed on the leaves below the ear leaf prior to or at silking. Fields must be scouted regularly to determine if a fungicide application is needed.

The period of foliar fungicide activity ranges from 14 to 21 days, therefore, timing of fungicide application is critical. For example, Headline is a broad-spectrum fungicide that has been used widely and can provide protection against the major foliar diseases in corn. With Headline the optimum application timing for application is VT through R2 (full tassel through blister). Waiting a few days past silking is preferred to reduce the risk of interference with pollination. If using a different fungicide check to see the best timing and use of adjuvants.

Source: *Wayne Crook, Agronomy Specialist*

Keys to Success with Fixed-Time AI in Beef Cows

During the past several years, extensive research has been done at the University of Missouri on fixed-time artificial insemination of beef cows. It is very important, especially with timed-AI programs, that producers follow the protocols precisely in order to get the best results. In addition to selecting a synchronization protocol, other factors also need to be considered in order to optimize the success of the AI breeding program. The researchers at MU have developed a list of key elements when considering a fixed-time AI program.

Herd Health. Pre-breeding vaccinations or de-worming should be completed at least 30 days prior to CIDR insertion.

Proper Nutrition. Average body condition scores should be at least 5.0 at time of CIDR insertion and maintained through the breeding season. Cows should be on a steady to increasing plane of nutrition.

Proven Reproductive History. The farm should have 85 to 90% pregnancy rates in a 60-day breeding season. Cows should average 45 days post calving at CIDR insertion, with a minimum of 21 days.

Animal Identification and Record Keeping. Cows and calves should be clearly and individually identified with legible ear tags and/or brands. Individual calving dates should be recorded for each cow.

Use Proven AI Sires. Use only AI sires that are proven to perform effectively in a fixed-time AI program. Use sires with high accuracy EPD's.

Facilities. Adequate facilities to gather, sort and process cattle in a reasonable time period with reasonable effort are necessary. If available, use a portable AI barn during the insemination process. Ensure AI technicians are scheduled for the AI date and are capable of inseminating all cows that are synchronized.

Other AI Tips. Use 18.5 gauge, 1 ½" needles for intramuscular estrus synchronization products. At CIDR insertion, technicians' hands and the CIDR applicator should be thoroughly washed clean of manure using a 2-bucket rinse of Nolvasan or Chlorhexidine solution diluted in clean fresh water. Restrict all breeding capable bulls from pasture for 10 to 14 days following AI. Pregnancy check with ultrasound approximately 70 days after AI. Be sure stress on cattle is reduced around the time of AI and maternal recognition.

Successful AI programs manage a multitude of small details very well. Some of these were listed above and will hopefully give you some practical items to monitor to help you manage your AI program and make it successful. Please call your MU Extension Livestock Specialist you have additional questions.

Source: *Gene Schmitz, Livestock Specialist*

The Amazing Pigweed

Pigweed is a weed that is causing great concern among producer because, it has developed resistance to several classes of herbicides and can significantly reduce yields. Just one pigweed per 3 meters of row can reduce soybean yield by 17 percent. This weed will probably be one of the main weed that will have to be dealt with in the future.

Pigweed is an unbelievably competitive plant. Its tap root can go 5 feet deep, it can tolerate very high temperatures, and it's amazingly drought and stress tolerant. Work at the University of California-Davis in the 1980s showed it had the highest photosynthetic rate of any plant they measured. A single 5-foot plant can produce 500,000 or more seeds, which are easily spread by wind, animals, and/or equipment. Pigweed can grow from 0.21 to0.18 centimeters per growing degree day. When daytime temperatures hit the mid-90s and the nighttime low is about 70, if you have 2-inch Palmer pigweeds early morning, they can grow 2.5 inches that day. Twenty-four hours later, they can be 4.5 inches tall.

In Tennessee in 2010, a county agent sprayed 8 to 10-inch Palmer pigweeds with glyphosate and nothing happened. He then sprayed them with Ignite, which will control pigweeds if they're less than 6 inches tall. Ignite burned them, but they came back. He sent in a chopping crew—but if you leave any root stump at all, it will send out auxiliary buds that will re-grow. If you pull them up and stack them at the end of the row or the edge of the field, more often than not they will re-root. It is an unbelievably resilient plant.

Larry Steckel, row crop weed specialist from the University of Tennessee Department of Plant Sciences, states that a key component in controlling pigweed is residual herbicides. The amount of control is important. Steckel notes that if you get less than 90 percent control, pigweed is going to get away from you. Pigweeds that can grow 2.5 inches per day can get too big for adequate control quickly. A two inch tall plant can be 4 to 5 inches tall in 24 hours which is too big for Flexstar to control. In 36 hours that 2 inch plant can be too big for Ignite to control. Two days can make a big difference in control. If you have or suspect Palmer pigweed is in your fields, it is critical that you keep an eye on your fields so you'll know if your preemerge is working.

If you have pigweeds in soybeans, rotate to corn, there are a lot of herbicides that will do a good job of controlling pigweeds in corn. Perhaps, the new technologies such as the dicamba trait and the 2,4-D trait will be useful tools to help bail us out of the glypghosate-resistance quandary.

It should be emphasizes that we must keep Ignite, Flexstar, and the PPOs in play for Palmer pigweed control for the next three to five years until these new technologies are available.

Source: *Wayne Crook, Agronomy Specialist*

Making the Most with a Small Vegetable Garden

The purpose of intensive gardening is to harvest the most produce possible from a given space. More traditional gardens usually consist of long, single rows of vegetables that are often widely spaced. Much of the garden area consists of the space between rows that is not occupied by plants. An intensive garden minimizes wasted space.

However, the practice is not just for those with limited garden space; other reasons that gardeners plan an intensive garden include creating an ideal plant environment and obtaining better yields with less labor and other inputs.

A good intensive garden requires early, careful planning to make the best use of space. Interrelationships of plants must be considered before planting, including nutrient needs, shade tolerance, above- and below-ground growth patterns and preferred growing season. The following techniques are common to most high-yielding intensive gardens:

Raised growing beds
Raised beds are the basic unit of an intensive garden. A system of beds allows the gardener to concentrate soil preparation on small areas, which results in effective use of soil amendments and creates an ideal growing environment.

Interplanting
This practice of growing two or more types of vegetables in the same place at the same time can help reduce weed and pest problems. Proper planning is essential to use interplanting effectively.

Close spacing
Individual plants are usually more closely spaced than in a conventional garden. An equidistant spacing pattern is often used

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that calls for plants to be planted so that the center of one plant is the same distance from plants on all sides. In beds of more than two rows, this means that the rows are staggered so that plants in every other row are between the plants in adjacent rows.

Succession planting

Successional plantings involve replacing the spent plants of one crop with something new. Again, planning is key to raising a series of crops that will produce from spring through late fall, such as spring peas followed by summer corn succeeded by a fall lettuce crop.

Relay planting

Relaying consists of overlapping plantings of one type of crop. The new planting is made before the old one is removed. For example, this might be done by seeding three different plantings of green beans two weeks apart.

Despite the benefits, the intensive garden may not be for everyone. Some people enjoy the sight of long, straight rows in their gardens. Others prefer machine cultivation to hand weeding. Though there is often less weeding to do in intensive plantings because of fewer pathways and closely spaced plants, the weeding that is needed must be done by hand or with hand tools. Some gardeners like to get their gardens planted in a very short period of time and harvest all at once, later in the growing season. The intensive garden focuses on growing something in every part of the garden during an extended growing season.

This article came from the MU Guide Vegetable Gardening, MG5. Contact your local MU Extension office for the guide or get it on the web at http://extension.missouri.edu/publications/DisplayPub.aspx?P=MG5

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