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AG CONNECTION

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Your link to the Universities for ag extension and research information.

Introducing New Staff

We would like to introduce three new extension specialists this month. They are all contributing much to our agricultural program in Central Missouri.

Joni Ross became the region's new agronomy specialist in March 2007. She was raised in a small West Central Illinois farming community. Joni graduated from University of Arkansas – Fayetteville with a B.S. in Crop Management and a M.S. in Soil Fertility. She is excited to be working with the farmers and landowners in Morgan, Moniteau, Benton and Pettis Counties. Her office is located at the Extension office in Versailles. Joni's programs include forage plots, consultations with producers, pesticide applicator training and Master Gardeners.

James Quinn grew up on a row crop/beef cattle centennial farm in Northern Iowa. He attended Iowa State University in Horticulture and completed his B.S. in Plant Science from University of California at Davis. After working as a research assistant for Campbell Soup Company's Institute for Research and Development, he completed a M.S. in Horticulture in Indiana. He then worked as a wholesale greenhouse manager in Michigan.

Since moving to Missouri he has been involved in agricultural projects, including greenhouses, vegetables, alternative agronomic crops, IPM, high tunnels and medicinal herbs. Jim joined the Horticulture Department at MU in 2003 as an Extension Associate and became Horticulture Specialist on June 2006 at the Cole County Extension Center. Jim serves residents and commercial growers in Audrain, Boone, Callaway, Cole, Moniteau, Morgan and Osage counties.

Dee Cooper is the part-time livestock specialist in the Central Missouri Region. She is assisting Mark Stewart for about three years while he has a special assignment. Dee is originally from Carrolton, MO and received a B.S. in Animal Science from the University of Missouri – Columbia. Dee received a M.S. in Physiology of Reproduction in Animal Science from Texas A&M University. Dee's office is located at the Extension office in Fulton. She has assisted with a safety program for the Amish, programs for extending winter hay supplies and consultations with producers.

Author: Don Day, Natural Resource Engineer

For more information, contact your local University of Missouri Extension Center:

- **Audrain County** (573) 581-3231
- **Benton County** (660) 438-5012
- **Boone County** (573) 445-9792
- **Callaway County** (573) 642-0755
- **Carroll County** (660) 542-1792
- **Chariton County** (660) 288-3239
- **Cole County** (573) 634-2824
- **Cooper County** (660) 882-5661
- **Howard County** (660) 248-2272
- **Moniteau County** (573) 378-5358
- **Morgan County** (573) 378-5358
- **Osage County** (573) 897-3648
- **Pettis County** (660) 827-0591
- **Saline County** (660) 886-6908

The Nitty Gritty on Nitrogen

Farmers can use their knowledge of nitrogen fertilizer characteristics, urease inhibitors and nitrification inhibitors to reduce the risk of nitrogen loss. High nitrogen fertilizer prices have farmers looking for a way to get more out of their fertilizer dollar. A brief primer on nitrogen fertilizer biochemistry may help you make nitrogen fertilizer decisions that increase nitrogen use efficiency.

Nitrogen Basics:

Nitrate nitrogen is typically the form of nitrogen used by plants. It is highly mobile in the soil so is prone to being leached out of the soil profile. In warm water-logged soil nitrate can be lost as a gas through a process called denitrification. Ammonium nitrogen is another form of nitrogen that plants can use. Ammonium nitrogen is resistant to leaching losses and cannot be lost via denitrification.

During the growing season soil microbes rapidly convert ammonium to nitrate. This process can be delayed by cold temperatures, high or low pH and the addition of chemicals that delay the nitrification process.

A primary objective of good nitrogen management is to delay conversion of nitrogen to nitrate until the plant needs it as a way of minimizing potential losses of applied nitrogen.

Anhydrous Ammonia:

The first key to success with anhydrous ammonia is being sure the soil seals around the injectors so no ammonia gas is lost during application.

The ammonia gas quickly reacts with the soil to form ammonium. This reaction temporarily raises soil pH in the anhydrous ammonia band. High pH and high ammonium concentrations in the anhydrous band initially slow the conversion of ammonium to nitrate.

Over time soil microbes move into the band and convert the ammonium to nitrate. This process can happen in a couple weeks in a warm soil and can be delayed months in a frozen soil.

The nitrification process lowers soil pH so the net effect of anhydrous ammonia is to lower soil pH.

Nitrification inhibitors such as N-serve® can be used with anhydrous ammonia to further delay conversion of ammonium to nitrate.

Urea and UAN (UAN is 50 Percent Urea):

Urea is an organic form of nitrogen that is converted to ammonium by the enzyme urease. Urease is naturally present in high concentrations in most soils so conversion of urea to ammonium is rapid after the urea prill dissolves. The conversion of urea to ammonium raises soil pH. High pH will lead to loss of nitrogen as ammonia from urea on the soil surface.

This loss of ammonia can be prevented by incorporating urea into the soil. Urea is an uncharged molecule so can be carried into the soil with enough rainfall, typically 0.5 to 1 inch.

After urea converts to ammonium, microbes in the soil will convert the ammonium to nitrate. This process lowers soil pH so the net effect of urea is to lower soil pH.

There are two types of additives to delay conversion of urea to nitrate. Urease inhibitors such as Agrotain® will delay the conversion of urea to ammonium. Nitrification inhibitors will delay the conversion of ammonium to nitrate. Agrium Inc. has a product, ESN, that delays nitrogen release from urea by encapsulating it in a polymer, slowing its release to the soil.

Ammonium Sulfate and Ammonium Nitrate:

These forms of nitrogen do not raise soil pH when applied to the soil surface. On our acidic soils (pH<7) they do not volatize to the atmosphere when surface applied.

They share with other nitrogen fertilizer sources that their net effect is to lower soil pH. Nitrification inhibitors can be used to slow the conversion of ammonium to nitrate in these materials.

For more information on managing nitrogen efficiently see the following MU guides:

Best management practices for nitrogen management in Missouri. IPM1027.

- http://extension.missouri.edu/explore/agguides/pests/ipm1027.htm

Managing nitrogen to protect water quality. G9208.

- http://extension.missouri.edu/explore/agguides/soils/g09218.htm

Author: John A. Lory Plant Science Department, University of Missouri, LoryJ@missouri.edu

Taxation Tidbit: Commuting To and From the Farm

Many farmers live in homes off the farm. The cost of traveling between the home and the main or regular place of work is considered a nondeductible personal commuting expense. This is true regardless of the distance or the fact you might be driving the farm pickup and hauling tools. Additionally, if you live off the farm – starting your work days at the local café's "morning farm management coffee seminar" will not convert the balance of the trip to the farm as deductible travel.

The best method of eliminating nondeductible commuting is to establish a business office in your home. The business office becomes your principal place of business and therefore you can deduct your daily transportation costs between your home office and other work locations.

You can qualify a room in your home as a farm business office if it is used <u>exclusively</u> and <u>regularly</u> as the principal place of business. Code Section 280A provides that a home office qualifies as the principal place of business if:

1. The office is used to conduct administrative or management activities of the trade or business
2. There is no other fixed location of the trade or business where you conduct substantial administrative or management activities.

If you are in the business of farming –you need a business office. The home office will help make you a more efficient and effective business manager – plus it will be a great tool in defending the deductibility of travel costs between your home and the farm. Work with your tax consultant to insure all the i's are dotted and the t's are crossed in meeting the deductible requirements of your home business office.

Author: Parman Green, Ag Business Specialist

Crop Insurance Today vs. Yesterday

Crop insurance products have expanded over the past fifteen years. For grain crops there are two types of insurance – yield insurance and revenue insurance.

Yield based insurance coverage includes Actual Production History Multiple Peril (APH) and Group Risk Plan (GRP). Revenue insurance plans include Crop Revenue Coverage (CRC), Revenue Assurance (RA) and Group Risk Income Protection (GRIP).

Summary of Plans

	Introduced to Missouri	Insures Against	Yield Coverage	Price Coverage	Results On Which Indemnity Is Based
Actual Production History (Multiple Peril) – APH	1989	Individual Production Risk	50-75% of APH Yield (up to 85% in Selected Areas)	60 – 100% of RMA Price	Actual Yield
Catastrophic – CAT	1995	Individual Production Risk	50% of APH Yield	55% of RMA Price	Actual Yield
Group Risk Plan – GRP	1993	County Production Risk	70-90% of County Yield	90-150% of RMA Price	County yield
Group Risk Income Protection – GRIP	2005	County income risk	70-90% of County Yield	90-150% of RMA Price	County Income
Crop Revenue Coverage	1997	Individual Revenue Risk	50-85% of APH Yield	Higher of Futures Price in February or at Harvest	Actual Yield and Futures Price at Harvest
Revenue Assurance	2000	Individual Revenue Risk	65-85% of APH Yield	Futures Price in February, or High of Futures Price in February or at Harvest (optional)	Actual Yield and Futures Price at Harvest

For a more detailed description of each of those products see the December 2005 issue of Ag Connection.
http://extension.missouri.edu/agconnection/newsletters/is-05-12.htm

The specific crop insurance products available for each crop may vary by county. Crop insurance products are reviewed each year and the USDA Risk Management Agency announces the products available by county. Typically changes are made where there is a need or a demand arises.

Recently MU Ag Economists did a study comparing how crop insurance has changed in Missouri over the past fifteen years. In 1990 less than two million acres were covered with insurance and by 2005 approximately seven million acres were covered.

The study also includes economic considerations of crop insurance over the past sixteen years. There are two ratios that can be used to examine the cost to benefit by the producer in a given year: the loss ratio and the farmer benefit cost ratio. The loss ratio is calculated by dividing the indemnity paid to the producer by the total premium paid by the producer and the federal government subsidy to the program. Insurance companies must operate with loss ratios less than one or they will be come insolvent. Over the past 16 years, the average has been 0.76 meaning that for every dollar paid in premiums, 76 cents was paid out in indemnities.

The farmer benefit cost ratio is the indemnity paid to the producer divided by the premium paid by the producer. That ratio has averaged 1.67 over the past sixteen years, which means that for every dollar that producers paid in premiums they received $1.67 in insurance indemnities. Clearly, some of the subsidy paid by the government to the insurance companies is

returned to the farmer as indemnities.

This is a good time to compare types of crop insurance and visit with your local crop insurance agent.

The entire 13 page Crop Insurance study, which includes data by county is available at: http://agebb.missouri.edu/mgt/cropinsur.pdf

It can be ordered through local extension offices by requesting MP749.

Author: Mary Sobba, Ag. Business Specialist

Almost Too Good to Be True

Starting in 2008 there is a zero percentage tax rate for long term capital gains – ***if your tax rate is in the 15% or lower tax rate.*** This zero rate is scheduled to continue through 2010, but don't bet the farm on it lasting that long.

If you have been considering the sale of some capital assets – this is the year to discuss the potential tax consequences of their sale with your tax consultant.

Author: Parman Green, Ag. Business Specialist

AG CONNECTION

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