D's Notes

Tractor Safety Operator's Course to Be Held

The Extension Councils from Clark, Commanche, Edwards, Ford, Gray, Hodgeman, Meade and Pawnee counties along with Dodge City Community College will be hosting a Tractor Safety Operator's Course on **Saturday, April 30, 2016 at the Ag Tech Building on the Campus of Dodge City Community College.**

The purpose of this course is to provide teenagers with a fuller appreciation and awareness of the needed safety practices around tractors and farm machinery. The law requires any young person, ages 14 to 16 who will be employed by someone other than his or her mother or father on the farm is required to complete a certification course. Any teenager, regardless of age is encouraged to participate. Those that are 14 will receive an operator's permit upon completion of the requirements of the course. Those over 16 do not need a certificate, but are also encouraged to participate.

Topics to be covered include instruments and controls, PTO and hydraulics, maintenance and safety checks along with presentations on fire extinguishers, public road safety and anhydrous ammonia.

Registration will begin at 8:00 a.m. at the Ag Tech Building (located just south of the small irrigation system on the Northwest corner the campus of Dodge City Community College. The course runs from 8:30 a.m. to 5:00 p.m. A minimal registration fee covers the noon meal, breaks, handouts and a handbook.

Pre-registration is required by April 22nd. A flyer and registration form can be found online at http://www.hodgeman.k-state.edu. You can pre-register by contacting the Hodgeman County Extension Office at 620.357.8321 or by e-mailing rstithem@ksu.edu.

TURFGRASS

Nightcrawlers in the Lawn

If you have mounds of soil in your lawn, nightcrawlers may be the cause. These bumps are randomly spaced rather than a "run" that is characteristic of moles.

Nightcrawlers are large worms -- usually 4 to 8 inches or more. They belong to a group of earthworms known as deep-burrowers. The deep-burrowers build large, vertical, permanent burrows that may reach as deep as 5 or 6 feet. Nightcrawlers pull plant material down into their burrows to feed on later. The bumps you see on top of the ground are called "middens" and are a mixture of plant residues and castings (worm feces). These middens may be used for protection and food reserves. The burrows can have a significant positive effect on soil by opening up channels for water and air to penetrate. Roots also like these channels because they ease root penetration and supply nutrients from the casting material lining the burrow. The middens, however, are a source of aggravation for homeowners. They can make it hard to mow or even walk on a lawn because they become very hard when they dry.

Getting rid of the middens is difficult. Rolling the lawn while the middens are soft may help temporarily, but mounds will be rebuilt when nightcrawlers become active again. Also, there is nothing labeled for nightcrawler control.

Some gardeners want to protect the nightcrawlers because of their positive effect on soils. Pesticides that may be used for other pests vary widely in their toxic effects on earthworms. One that has no effect is Dylox (Proxol). Malathion may be slightly toxic while Sevin and copper are extremely toxic. Avoid using the latter group while nightcrawlers are active. (Ward Upham)

PRUNING

Cut Back Ornamental Grasses

March is a good time to remove dead foliage from ornamental grasses. Grasses green up earlier if foliage is removed and are more attractive without a mixture of dead and live leaves. A number of tools can be used including hand clippers, weed whips (if the foliage is of a small enough diameter), weed whips with a circular blade, or even a chain saw. Use the top of the chainsaw bar to cut so the saw doesn't pull in debris and clog.

Also, it is often helpful to tie foliage together before cutting so it doesn't interfere and is easier to dispose of. Burning is another option — but only if it is safe and legal to do so. Note that these grasses may not burn long, but they burn extremely hot. Even so, the crown of the plant is not damaged and new growth appears relatively quickly.

If the center of the clump shows little growth, the plant would benefit from division. Dig up the entire clump and separate. Then replant the vigorous growth found on the outer edge of the clump. (Ward Upham)

VEGETABLES

Planting Asparagus

This crop is a perennial and will survive for many years if given proper care. It prefers full sun and a well-drained soil and is usually placed on the edge of the garden area so that there is no need to till around the area to plant other crops.

Proper soil prep is especially important for perennial crops. Take a soil test to ensure proper levels of nutrients. Take the soil sample to Servi Tech for analysis. Work the soil as early in the spring as possible but do not work wet soil as clods will form. Then add two inches of organic matter to the surface and the fertilizer and work again so the organic matter and fertilizer are blended into the soil.

Asparagus can be propagated from seed but is more often started from 1-year-old crowns. These crowns are planted deeply; about 8 inches deep either in a hole for each crown or in a trench. Space plants 18 to 24 inches apart. Fill in the trench gradually over the growing season to encourage growth. March 15 to April 15 is the best planting time. Adapted varieties include Jersey Giant, Jersey King, Jersey Knight, Jersey Supreme and Purple Passion. These are all male hybrids that will produce three times as much as our old Martha or Mary Washington varieties. Males have a number of advantages over females in that they live longer, emerge earlier in the spring, are more productive and eliminate potential volunteer plants that can reduce the productivity of a planting.

Weed control is very important. Competition with weeds results in slow establishment. A shallow hoeing should be all that is needed. (Ward Upham)

FRUIT

What Fruit Trees to Plant?

If you're pondering that question, here are some comments on fruit trees commonly grown in Kansas. Fruit trees are a long-term investment requiring careful thought before purchase. Begin by choosing fruit you will eat, not fruit that appears attractive in the catalog. Other considerations are outlined below. Space doesn't allow for a complete list in this newsletter. For more choices, go to the publication "Small-and Tree-Fruit Cultivars" at http://www.ksre.ksu.edu/bookstore/pubs/MF1028.pdf You may also request this publication from your local K-State Research and Extension office.

Apples: Though we can grow a wide variety of apples in Kansas, pest-free fruit requires an extensive spray program. Apples are normally sprayed from March (dormant spray) until about two weeks before harvest. Sprays from April on throughout the growing season are applied at least every two weeks.

You need two different varieties of apples to produce fruit. Recommended varieties include Jonathan, Gala, Empire, Delicious, Golden Delicious, Jonagold, and Granny Smith. Recommended apples that are disease resistant include William's Pride, Enterprise, Priscilla, and Redfree. Planting disease-resistant apples will reduce, but not eliminate, the need for pesticide applications. None of the apple varieties listed above are resistant to the summer apple diseases sooty blotch and flyspeck. It may be necessary to periodically apply a fungicide in the summer to suppress these fruit blemishing diseases. Also, all of the varieties listed will require protection from codling moth and other insect pests. The codling moth larva is the most common "worm" in the apple.

Cherries: Sweet cherries (such as Bing) are not well adapted to Kansas, but sour (pie) cherries are. Cherries are borne in June, so relatively few sprays are needed. Many years you may get by with no sprays at all. Only one tree variety is needed for fruit on sour cherries. Recommended sour cherries are Montmorency, Meteor, and North Star. The latter two are genetic dwarfs with Meteor reaching 10 to 14 feet and North Star growing to 8 to 10 feet.

Apricots: Apricot trees are quite ornamental, which is fortunate because late spring frosts usually eliminate fruit. On average, assume you will get fruit about once every 5 to 10 years. Portions of western Kansas may see fruit only once every 30 years. Almost all varieties of apricot are self-fruitful. Recommended varieties include Moorpark, Goldcot, Manchu, and Superb.

Peaches: Usually a relatively short-lived tree (10 to 12 years) that needs a great deal of pruning to keep productive. Peaches have the same problem with late frosts that apricots do but may not be quite as sensitive. Only one tree is needed for fruit. Try Intrepid, Early Redhaven, Redhaven, Harken, and Reliance. Intrepid blooms later than other peaches and blooms are much more frost resistant.

Pears: Pears are tough and are often one of the few trees that survive on an old homestead. Though trees should be sprayed, the chance of getting good fruit without spraying is much better than it is with apples. Usually, two trees are needed to get fruit. Proven pears include Seckel, Moonglow, and Duchess.

To learn how to control fruit pests see, "Fruit Pest Control for Home Gardens," at http://www.ksre.ksu.edu/bookstore/pubs/c592.pdf or available from local K-State Research and Extension offices. (Ward Upham)

On-farm research collaborative project:
Non-biased, Research-based, and Grower-driven

K-State Extension state specialists, area agronomists, and county/district agents are again seeking to collaborate with producers in establishing on-farm and large-scale research plots in 2016. Last year, we had on-farm projects in diverse areas around Kansas, setting up tests involving corn, soybean, and grain sorghum.

The goal of our on-farm research collaborative project is to establish a network of on-farm research collaborators with the main purpose of providing research results on production practices at the state, regional or local scale, under a wide set of growing conditions and soil types.

There are no losers in this program. All parties will benefit. Farmers involve in this collaborative research effort will be empowered to solve their own problems and will have greater confidence in making decisions related to their production practices. The standard practice of the program involves a producer having a question, he research the answer on his farm, on his soil with a simple strip trial designed with the assistance of K-State Researchers. While, K-State extension specialist will be better able to check the validity of previous scientific findings conducted in small plots and in more controlled environments and to identify and communicate areas for future research.

The on-farm research collaborative project is farmer-run research, thus information will be produced and used by farmers. Farmer participation is the key component of this project and farmers will be the main beneficiary.

Why should I get involved in this project?

1. The project has a main goal to improve yields and/or minimizing input costs, increasing overall efficiency in the state of Kansas.
2. The project will help producers learn the best ways to design an on-farm test so they can obtain reliable information on a specific question related to their own farms.
3. The outcomes from this project will empower our producers to make sound decisions with confidence and will aid researchers in identifying and communicating areas for future research.

Who are the key players?

1. Kansans farmers: Farmers are the main players, the ones who will implement the trials, collect the data and utilize the results.
2. Extension Agricultural Agents: The agents are the "gatekeepers" of this project. They will work very closely with farmers and can assist, if needed, with information and/or help on implementing the trials.
3. K-State Extension State Specialists and Area Agronomists: K-State faculty will assist Extension agents and Kansas farmers in developing the protocols, implementing trials and analyzing the data generated at the on-farm scale.

Research data (small-plots) vs. On-farm data (large-plots): What is the main different between these concepts?

Information produced at research stations has the following features:

Small plot size = small variability ("controlled conditions")

Intensive sampling = usually related to a graduate student project, with many samples taken throughout the growing season

More complex and more treatments can be evaluated

Small sample size = measurements may be less representative of "real" farm conditions

On-farm data have the following features:

Large plot size = higher variability due to uncontrollable variation within each plot

Less intensive sampling

Less complex and fewer (two or three) treatments can be evaluated

Large sample size = measurements may more closely represent "real" farm conditions

Are the on-farm protocols the same for all environments and farmers or should they be farmer- or site-specific?

Farmers have their own interest and specific questions that need to be properly addressed. Protocols will be designed to fit each farmer's situation. Some of the diverse topics that we have discussed include: corn/ soybean/ sorghum seeding rates; corn/ sorghum hybrids; sorghum/ soybean row spacing; corn/ soybean/ sorghum planting dates; full or limited irrigation; and other topics.

Protocols:

Crops: Corn / Soybean / Sorghum / Winter Canola

Topics:

- Seeding Rates
- Planting Dates
- Row Spacing
- Hybrid/ Variety Selection
- Tillage
- Nutrient rates
- Irrigation
- Others

How many factors need to be evaluated?

The idea is to perform "simple" on-farm experiments evaluating one or two factors at a time.

How many levels for each factor?

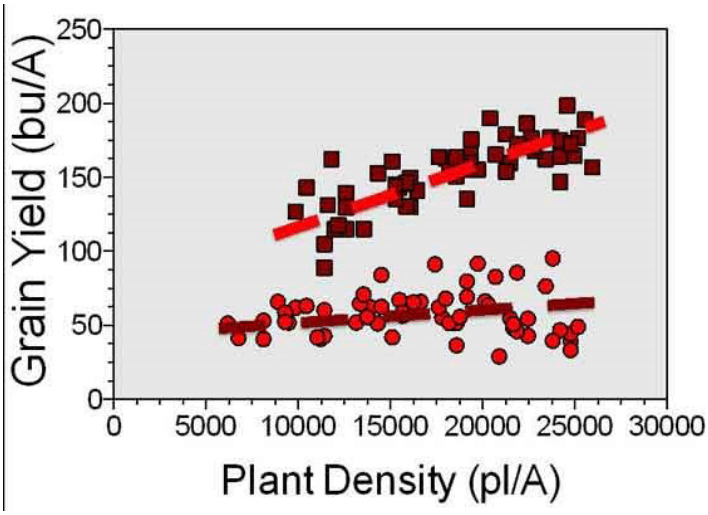
This will depend on the availability of space in the field, but to properly understand the optimum crop management level, 4 to 5 levels are usually needed. For example, if corn seeding rate is evaluated, five seeding rates will allow the grower to properly identify the optimum seeding rate for each specific farm environment. The diagram below presents an example of 5 test levels for a seeding rate study.

Replications?

To obtain statistically sound and solid recommendations, a minimum of 3 replications are recommended.

Are crop production practices environment-specific?

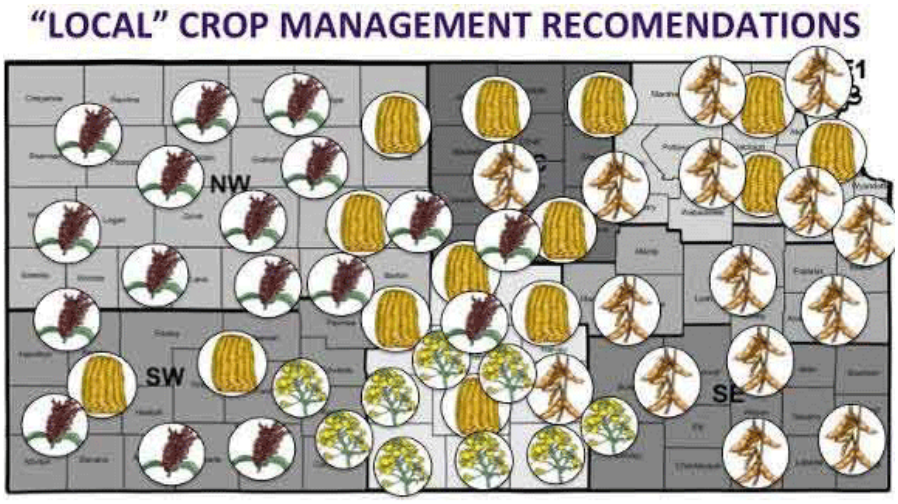
The example in the graphic below shows how the optimum plant density to maximize corn grain yield will vary according to different environments. For the low yielding environment (<100 bu/acre), the economically optimum plant density was about 15,000 to 20,000 plants per acre; while for the high-yielding site, economically optimum maximum plant density is about 25,000 plants per acre. Therefore, different yield potentials in different environments have different "optimum" crop production practices to maximize net returns.



Goal for the next 5 years

This project has as a goal to establish a network of on-farm research trials with the purpose of fine-tuning crop production recommendations to local environments. The end result will hopefully be to generate practical information that will either improve yields or minimize input costs.

This is a farmer center research effort. However, for the benefits of this program to be realized, both farmers and university researchers will have to buy into the vision. Farmers interested in participating in this project can fill out an interest form online at: **http://bit.ly/KSUONFARMPROJECT**



Ignacio Ciampitti, Cropping Systems Specialist, K-State On-Farm Research Project Coordinator; K-State Area Extension Agronomists: Lucas Haag, Northwest Area Crops and Soils Specialist, AJ Foster, Southwest Area Crops and Soils Specialist, Stu Duncan, Northeast Area Crops and Soils Specialist, Doug Shoup, Southeast Area Crops and Soils Specialist

Agricultural Mobile Apps: A review and update of livestock apps

This article provides a review and update of some of the current "livestock apps" for agriculture. These apps can assist farmers with animal management issues related to health, nutrition, market information, and more. While these apps can often help you make quick decisions, always make sure to check with your crop consultants, Extension agents, and Extension specialists. Stay tuned for more in this series of annual reviews and updates on Ag-Apps from our KSUCROPS Crop Production team (led by Dr. Ciampitti) and the K-State Department of Agronomy. More updated lists of Ag-Apps will be included in the next several editions of the Agronomy eUpdates.

NOTE: These apps are all available as of the time this article is published. Alterations or changes in availability could occur, affecting the ability to access these apps.

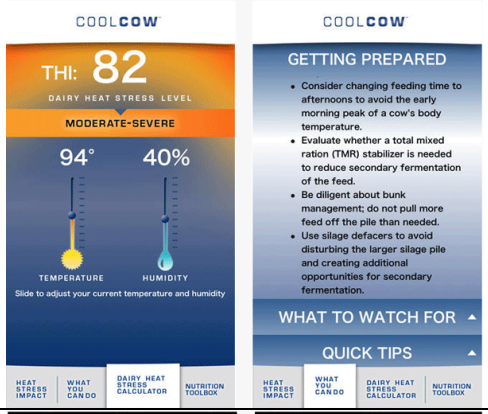
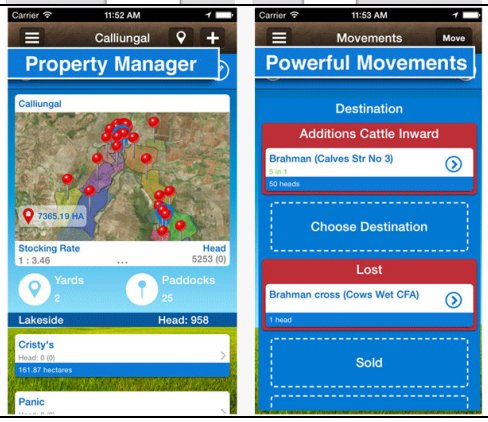
For this series of articles, we have grouped Ag-Apps into the following 10 classifications:

- **ID Apps**: For identification purposes (weeds, insects, diseases, and nutrients)
- **CALC Apps**: For calculating purposes (nutrient removal calculations, tank mixes, volume to spray, etc.)
- **SCOUT Apps**: For scouting purposes or for geo-positioning (soil sampling, recording notes, soil types, etc.).
- **ECON Apps**: For checking grain prices, market evolutions, fertilizer price trends, news and finances.
- **FIELD GUIDE Apps**: For diagnosing crop production issues in the field, primarily related to field guides (crop management: insect, disease, weed, and more).

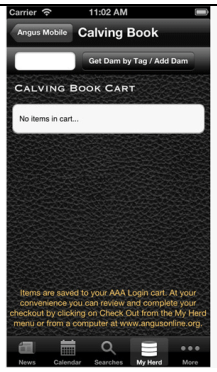
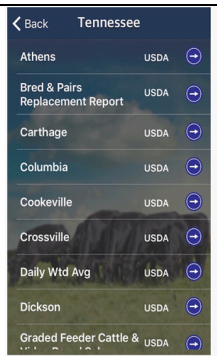
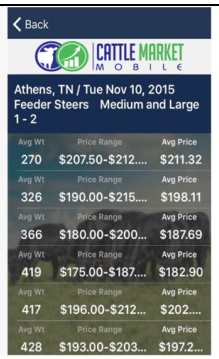
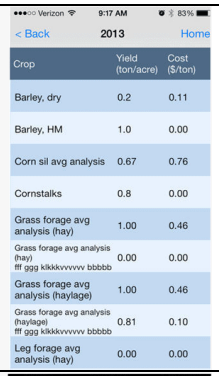
- **LIVESTOCK Apps**: Apps related to the animal side, nutrition, health, and information on markets.
- **IRRIGATION Apps**: Apps related to field crop irrigation and water application.
- **MACHINERY Apps**: Apps for associated with agricultural equipment preparation, inventory, providing information of the machine.
- **GENERAL AG Apps**: GAG (general Ag-Apps) for general use, weather-related, for meetings, for reading magazines, among several other Apps' properties.
- **NON-AG Apps**: For general use from e-readers to calculators, email, calendar, picture editing, and more.

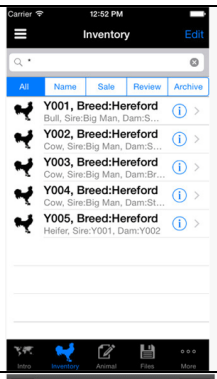
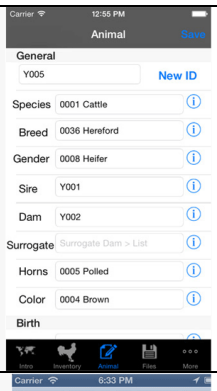
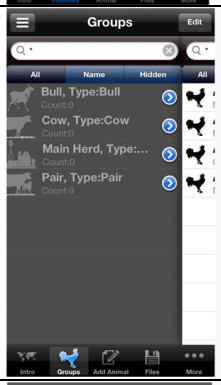
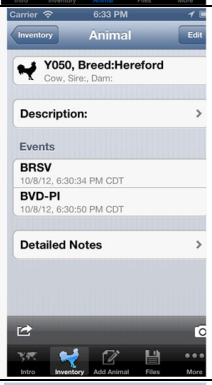
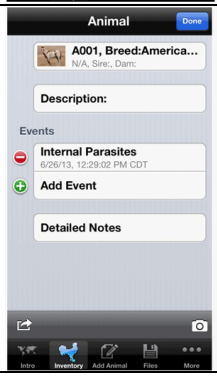
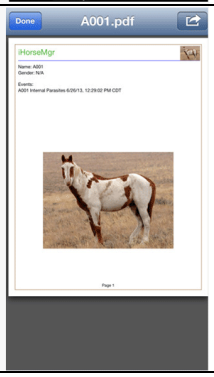
Livestock Apps

Apps related to livestock management topics, such as nutrition, animal health, and market information.

MOBILE AGRICULTURAL APPS – REVIEW from KSUCROPS ©Kansas State University			
Livestock Apps			
Name of App and Source	Picture	Brief description and cost	Download
ThermalAid University of Missouri		This app provides a decision-making tool to identify, monitor, and reduce heat stress in cattle to improve animal performance. FREE	iOS Android
Purina Cool Cow App Purina Animal Nutrition LLC		This app provides dairy producers with a tool to help manage the impact of heat stress. FREE	iOS Android
iHerd MANDRA Ltd		iHerd app provides a design to simplify the herd management process for station owners and managers around the world. FREE	iOS Android

MOBILE AGRICULTURAL APPS – REVIEW from KSUCROPS ©Kansas State University			
Livestock Apps			
Name of App and Source	Picture	Brief description and cost	Download

Angus Mobile  American Angus Association	  	The Angus Mobile app provides information for anyone with an interest in Angus cattle. FREE	iOS Android
Cattle Market Mobile  Michael Whitt	  	This app helps cattle producers monitor current auction prices. In addition, reports are also displayed. FREE	iOS Android
CropCents  Penn State University (AGH Incorporated)	  	This app helps calculate the cost of raised feed, which is a better approach than using market prices to calculate income over feed costs. FREE	iOS
DairyCents  Penn State University (AHG Incorporated)	  	This app provides a quick calculation of income over feed costs and price comparison of various forages, grains, and commodities. FREE	iOS Android

iCattleMgrPro  iSimpleType	 	This app provides a tool for management of livestock. It covers more than 90 pieces of information about animal health. $19.99	iOS
iLivestockMgr  iSimpleType	 	This app provides a tool for livestock management. It focuses on livestock in general. $19.99	iOS
iHorseMgr  iSimpleType	 	This app provides a tool for horse management operations. $9.99	iOS

Each of the next four issues of the eUpdate will feature another classification of Ag-Apps from our KSUCROPS Crop Production team and the K-State Department of Agronomy!

Ignacio A. Ciampitti, Crop Production and Cropping Systems Specialist, Jeffrey Albers, Agronomy undergraduate student in crop production, KSUCROPS Team, Aaron Brinkman, Agronomy undergraduate student in crop production, KSUCROPS Team