



Ag & Hort Update

January 2012

Shelby County Extension

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Upcoming Events:

- **January 17- Feedlot Forum 2012**
- **January 18- Crop Advantage in Atlantic**
- **January 21- Cornbelt Cow-Calf Conference**
- **January 24- Private Pesticide Applicator Training at 9:30am in Harlan and Crop Advantage in Carroll**
- **January 31- Private Pesticide Applicator Training at 7:00pm in Harlan and Confinement Manure Applicator Certification**
- **February 16- Private Pesticide Applicator Training at 9:30am and 7:00pm in Harlan**

DID YOU KNOW??

Ag and Hort News is also available online!! Each month's newsletter is posted online, and past issues are archived on our county homepage: www.extension.iastate.edu/shelby. Just click on the Ag and Hort News in the county news feed and find the month you are looking for!! Best of all- online newsletters contain active links to get you to websites and publications mentioned in the articles! If you would like to receive an email when the latest issue is posted online, just email me (kristenr@iastate.edu) or get a hold of me at the Extension office with your email address.

Ask the ISU Garden Expert

Get answers to all your yard and garden questions at www.yardandgarden.extension.iastate.edu. For specific questions, call the Hortline at (515) 294-3108, or email hortline@iastate.edu, Monday-Friday from 10 a.m. to noon and 1:00 to 4:30 p.m.

300 Bushel per Acre Average Corn Yields: Can We Get There?

In grain elevators, fertilizer plants, seed dealerships and cafes, the discussions have not only been about the crop prices and high input costs. There's also much talk about where yields are headed in local and national news.

There was a buzz a couple years ago about the seed industry aiming to double national average yields by the year 2030. That would mean about 300 bushels per acre for corn and 80 bushels per acre for soybeans. 2011's less than outstanding yields brought the question up again- can we get there by 2030? Considering that as a nation we've averaged in the 150's/160's for corn the last few years, we have a long way to go. If we just maintained the annual corn yield increase from the last 10 years (around 2.7 bushels per acre per year), it would be around 2060 before we reach 300 bushels per acre. The projected 9 billion plus people in the world could be real hungry if we take that long.

So, how might we get to those yield levels by 2030? Part of the answer lies in the tremendous resources put into research and development. New traits provide even more promise for jacking up yields while protecting our natural resources. Drought-tolerant seeds may allow more efficient use of irrigation water and provide higher yields for non-irrigated farms during dry years. Corn hybrids capable of enhanced utilization of nutrients may increase yields while reducing fertilizer applications, which could reduce input costs and nutrient loads on the environment. Improved disease resistance may serve not only to protect yield potential, but also improve harvestability. Frost- or cold-tolerant genetics may create more

opportunities to increase yields by allowing earlier planting dates to extend the growing season. New advances in insect and herbicide resistance are also on the horizon. For example, researchers are making progress on traits to fight three of our most virulent soybean pests: soybean rust, soybean aphids and soybean cyst nematodes. New herbicide resistance traits may allow us to better protect crops against yield losses from weed competition and help fight herbicide-resistant weeds.

Arguably, the most excitement revolves around yield enhancement genes — working directly on genetics to greatly increase yield potential. This leads to an interesting discussion about genetic potential versus real-world yields. Look at the corn yield contest winners. Over the last several decades, those contest winners' yields have steadily been in the upper 200s to the mid 300s. Some agronomists point out that since these winning yields have been relatively stable, corn's maximum yield potential hasn't actually increased significantly in the last several decades. With the near-perfect conditions of their fields, if the contest winners' yields have leveled off, how can the rest of U.S. producers expect to achieve those kinds of yields as an average?

The optimist in me believes in science. The seed industry has proven it can do amazing things. We may have only seen the beginning. And universities, often in cooperation with industry, continue to play an important role in both yields and environmental stewardship. Experts predict that 25 to 35 percent of projected average yield increases will result from continued innovation in agronomic practices. That's why land-grant schools like Iowa State University are committed to finding answers to questions about row spacing, accurate seed placement, plant populations, nutrient application rates and timing, integrated pest management, use of precision technologies, remote crop sensing and soil and water management. These science-based results also will play a large role in reaching high, sustainable yields.

Can we double national average production? With a projected world population of over 8 billion by 2030, tremendous resources are needed to grow

more food sustainably. I think we're up to the challenge.

-Clarke McGrath, Corn & Soybean Initiative
Partner Program Manager/ Agronomist

Iowa Learning Farms' Webinar Focuses on Farmer Identity

AMES, Iowa — Iowa Learning Farms is again hosting a series of webinars on the third Wednesday of each month in 2012, a continuation in the series from 2011. The webinars will begin at 11:30 a.m. and will run approximately 45 minutes. Please note that this is a new time from the 2011 webinars. They are offered through Adobe Connect; all that is needed to participate is a computer with Internet access.

The topics discussed will be beneficial for technical service providers, watershed project coordinators, extension specialists and anyone else interested in the topic of the month.

The January webinar will be held Wednesday, Jan. 18 at 11:30 a.m., and will feature Jacqueline Comito, an anthropologist with the Sociology Department at Iowa State University.

Comito's webinar focuses on the rationalization of two widely circulated aspects of a farmer's public identity as articulated by corn and soybean farmers in Iowa: the farmer as a steward of the land and the farmer as a shrewd business person. Using qualitative data from 28 listening sessions conducted in Iowa between 2008-2011, Comito will examine how, through an analysis of "public" data, farmers maintain their identity as good stewards of the land even though their business identity has them implementing practices that may result in soil and water degradation.

"If there is any hope in resolving this tension between economic and ecological challenges, farmers will need to take the long view and think about what kind of legacy they will leave," Comito said.

To connect to the webinars, go to <http://connect.extension.iastate.edu/ilf/>. The ILF website, www.extension.iastate.edu/ilf/, contains links for archived webinars from previous months. Please contact ILF with topic ideas for future webinar sessions.

Yard and Garden: Houseplant Care

Growing houseplants is a challenging and rewarding hobby that can be enjoyed by everyone and need not be difficult. Give plants what they need and they'll do well. Learn from ISU Extension horticulturists just what it is that houseplants need. To have additional plant and garden questions answered, contact the ISU Hortline at 515-294-3108 or hortline@iastate.edu.

Dust and grease accumulate on my houseplants. How should they be cleaned?

Dust and grease often accumulate on the leaves of houseplants. The dust and grease not only make them unattractive, it may slow plant growth. Cleaning houseplants improves their appearance, stimulates growth and may help control insects and mites.

Large, firm-leafed plants may be cleaned with a soft sponge or cloth. Wash the foliage using a very dilute solution of dishwashing soap and tepid water. Another method is to place the plants in the shower and give them a good bath. Be sure to adjust the water temperature before placing the plants under the shower head.

The leaves on my houseplant are covered with a black, sooty material. What is it and is it harming the plant?

The black, sooty material is likely sooty mold. Sooty mold is caused by several different fungi. The fungi don't infect plants, but grow on the sugary substance (honeydew) excreted by scales, mealybugs, whiteflies and other sap-sucking insects.

Sooty mold causes little harm to houseplants. The damage is mainly aesthetic. The black, soot-covered leaves aren't very attractive. However, the sap-sucking insects may seriously harm houseplants. Scales, mealybugs and whiteflies are very difficult to control. Discard the pest-infested plant or follow recommended control measures. Control efforts will require patience and persistence.

There are some white blotches on my African violet leaves. What are they and how can the problem be controlled?

The white material on the foliage of your African violet is probably powdery mildew. Powdery mildew is a fungal disease that is common on indoor plants, such as African violets, begonias and

poinsettias. Outbreaks of powdery mildew on houseplants typically occur in winter or early spring. High relative humidity and poor air circulation favor powdery mildew development on houseplants.

If only a few leaves have powdery mildew, pinch them off and discard them to keep the fungus from spreading. Humidity levels can be lowered by increasing the spacing between plants. Moving plants out of rooms with high humidity (kitchens and bathrooms) is another option. While fungicides are available for use against powdery mildew, cultural controls are the preferable way to control powdery mildew on plants in the home. Severely infected plants may need to be discarded.

Yard and Garden: Houseplant Pests

Just as there are different types of indoor plants – foliage, flowering, succulents and florist's plants – there are different pests that can invade houseplants. ISU Extension horticulturists explain how to recognize and manage pests on houseplants. To have additional plant and garden questions answered, contact the ISU Hortline at 515-294-3108 or hortline@iastate.edu.

How can I determine if my houseplant has spider mites?

Spider mites are tiny (about 1/50 inch long when mature). As a result, they are difficult to see with the naked eye. A convenient detection technique is to hold a sheet of white paper under a stem and then shake or tap the stem against the paper. The mites, if present, will show up as tiny, slow-moving specks on the paper. Examination of an infested plant may reveal very fine webbing produced by the mites. Also, check the plant for symptoms of mite feeding. In light infestations, plant foliage will appear to be speckled with tiny tan spots. Heavy mite infestations can turn the foliage to greenish yellow and eventually tan or brown. Heavily infested plants often drop their leaves.

How do I control spider mites on my houseplant?

If the mite infestation is light, spraying infested plants with water should help reduce the mite population. Move infested plants into the bathtub or shower and forcefully spray the plants with water to dislodge the mites. Several miticides (pesticides that control mites) are available for houseplants. Check for products at your local

garden center. Sprays available to home gardeners usually contain insecticidal soap, horticulture oil or pyrethrin. When using miticides, carefully read and follow label instructions. Thorough spraying, especially to the undersides of the leaves, is important for control. These sprays have no residual activity and only control mites that are contacted directly. Repeated applications will be necessary. Also, keep plants watered and fertilized to promote plant vigor and reduce the impact of mite feeding.

It's often best to discard houseplants that are heavily infested with mites. Control efforts will likely be ineffective and the mites could spread to other indoor plants.

I have small, white, cotton-like clumps on my houseplant. What are they?

The small, white, cotton-like clumps on your houseplant are probably mealybugs. The body of each mealybug is oval and about one-fourth inch long. However, the soft, segmented body is concealed by filaments of white wax that cover the insect. The filaments extend out from the periphery of the body and may be up to one-half inch long.

Mealybugs have needle-like sucking mouthparts. They insert their needle-like beaks into plants and suck sap from the plant tissue. As they feed, mealybugs excrete a sweet, sticky liquid called honeydew. The honeydew accumulates on the lower leaves of the plant, table or floor.

Mealybugs lay eggs in a compact, white, waxy sac, usually in the area between the leaf stalk (petiole) and stem. Three hundred or more yellowish or orange eggs may be deposited by a single female. The eggs hatch into tiny, immature mealybugs called nymphs that move about on the plant searching for a place to settle and eventually insert their beaks into the plant and begin sucking sap. As mealybugs feed, numerous waxy filaments start forming as white, thread-like projections located along the edge of the body. The filaments grow, curl and tangle until the entire body is covered. Mealybugs usually remain in one place for their entire life span of four to 10 weeks.

How do I control mealybugs on a houseplant?

Mealybugs on houseplants are difficult to control. Unless the plant is particularly valuable, it may be best to throw away the infested plant before the

insects spread to other houseplants. The standard remedies for houseplant pests can be successful if applied with diligence and persistence. Picking off individual mealybugs and egg sacs or dabbing each one with an alcohol-soaked cotton swab may be satisfactory for lightly-infested plants. Similarly, syringing the plants with a forceful spray of lukewarm water may dislodge a light mealybug infestation.

Mealybugs also can be controlled with insecticide sprays. Use aerosol or hand pump spray products made just for houseplants. These products may contain any of several different ingredients, including insecticidal soaps, pyrethrin, neem or a synthetic pyrethroid, such as permethrin, bifenthrin or resmethrin. Granular insecticides that you apply to the soil of infested houseplants also may be effective. Use with caution and read and follow all label directions.

In most cases, houseplants that are heavily infested with mealybugs should be discarded. Control will be extremely difficult (if not impossible).

The leaves on my houseplant are covered with a sticky sap. There are also small "bumps" on the stems. What is the problem?

The houseplant may be infested with scale insects. These small, inconspicuous insects are covered with shell-like coverings. They attach themselves to stems or leaves, and suck sap from the plants. As they feed, the scale insects excrete a sweet, sticky substance called honeydew. The honeydew accumulates on the plant's lower foliage, furniture, carpeting or other objects beneath the infested plant.

The life cycle of scale insects consists of the egg, nymph, and adult stages. Eggs are laid below the scale coverings of the adult females. When the eggs hatch, the nymphs crawl from underneath their mother's scale and move a short distance to their own feeding site. The newly emerged nymphs are also called crawlers. At their new location, the nymphs insert their slender stylets (mouthparts) into the plant and begin sucking sap. The covering or shell develops soon after feeding begins. The scale insects remain at these feeding sites the rest of their lives.

A small scale infestation causes little harm to healthy houseplants. However, a heavy scale

infestation may result in poor, stunted growth. In severe cases, death of infested plants is possible.

How do I control scale on a houseplant?

Scale insects are difficult to control. Systemic insecticides are generally ineffective. The shell-like covering protects the scale from contact insecticides. The only time scale insects are vulnerable to contact insecticides is during the crawler stage. Since scale insects on houseplants don't reproduce at a specific time, scale-infested plants need to be sprayed with insecticidal soap or other houseplant insecticide every seven to 10 days until the infestation is eliminated. Small infestations can be controlled by individually scraping off the scales or by dabbing each scale with an alcohol-soaked cotton swab. It's often best to discard houseplants that are heavily infested with scale as control is nearly impossible and the insects could spread to other houseplants.

Research Looks at Strategies to Grow Late Season Vegetables

AMES, Iowa — On Oct. 3, Iowa State University Extension and Outreach vegetable specialist Ajay Nair planted lettuce transplants at the Iowa State Horticulture Station to study two strategies that may extend the growing season for vegetable growers. One strategy was the use of row covers; the second was the application of varying rates of calcium.

In *Extending the Lettuce Growing Season*, a Nov. 10 video, Nair takes a look at the crop and talks about his findings during the first year of the study.

"Using row cover to extend the season has three main advantages. It increases temperature and protects plants from frost and wind," Nair said. Walking through the test plot during the video, he shows how plants that received applications of 10 millimolar calcium compare to those that received 20 millimolar treatments.

Follow Nair's study by reading his Oct. 9 blog entry <http://www.iowavegetables.blogspot.com/> or watching the video at www.ag.iastate.edu/video/v/Extending_the_Lettuce_Growing_Season.

Second Farmland Drainage Workshop to Be Held Jan. 30

AMES, Iowa — A January workshop will examine various aspects of farmland drainage. The workshop will be offered Jan. 30 at Big Ed's Firehouse in New Hampton. The program begins at 9 a.m. and will adjourn at 3:30 p.m.

"We are offering this farmland drainage workshop due to the overwhelming interest in a December workshop on this topic," said Kapil Arora, an agricultural engineer with Iowa State University Extension and Outreach.

The morning session will focus on drainage design concepts, economics and the long-term benefits of tiling. The afternoon session will include discussions on drainage maintenance issues, compliance with USDA-NRCS requirements, discussions on controlled drainage, bioreactors and managing drainage water quality with wetlands. Speakers include Iowa State University Extension Ag Engineering Specialist Kapil Arora, ISU Extension Farm Management Specialists Kristen Schulte and Kelvin Leibold, ISU Associate Professor of Ag Engineering Matt Helmers, USDA-NRCS Specialist Bruce Atherton and John Baker, attorney for the Iowa Concern Hotline.

Iowa State University Extension and Outreach, industry partners and the United States Department of Agriculture — Natural Resources Conservation Service, sponsor the program. Registration information is available online, or call ISU Extension and Outreach in Chickasaw County at 641-394-2174.

Iowa Soil and Land Use Website Gets a Make-over

AMES, Iowa — National media put a spotlight on Iowa soil the past month due to the current increases in farmland prices. Those who work the farmland, whether they call it dirt or soil, know that it is one of the state's richest resources. Iowa State University Extension and Outreach helps those that own, manage and work the land, as well as those who talk about it, know and understand Iowa soil through a recently revised website.

The ISU Extension and Outreach soil and land use website at www.extension.iastate.edu/soils/ was revised to more clearly explain the richness of Iowa soil through data related to the agricultural and

non-agricultural uses of Iowa land. Visitors to the site will find that soils have many uses, but not all soils are equally adapted to each use.

“Understanding the basic properties of soils leads to better crop management, soil nutrient management and soil and water conservation,” said Lee Burras, Iowa State agronomy professor specializing in soils research. “The data on this site help those with an interest determine the potential uses of their soil and the location of different soils across the state.”

The website details the characteristics and uses of Iowa’s 36 million total acres with a primary focus on the nearly 33 million acres used in farming. Acreage averages, crop ratios, crop yields and 5-year yields, land use acres and erosion information are all included on the site with data organized by county and statewide. New to the site are tools that allow the visitor to sort and filter Iowa Soil Properties and Interpretations Database (ISPAID) data to generate information for a specific need or interest. The tools link data abbreviations to manual definitions that make the data easier to understand.

“If someone is interested in finding all corn suitability ratings with a value greater than 90 or all soils that are commonly flooded, for example, it is possible using the spreadsheets associated with the ISPAID manual,” Burras said. “By making it easier to access the information in the manual, we believe land owners and farm operators will make more informed decisions regarding soil management and care.”

A recent addition to the website is a feature that identifies the location of Iowa soils best suited for vineyards.

Yard and Garden: African Violets

While African violets are relatively easy to grow, they do require consistent care and attention to light, temperature, watering and fertilization. Find out more from ISU Extension horticulturists. To have additional plant and garden questions answered, contact the ISU Hortline at 515-294-3108 or hortline@iastate.edu.

What would be a good location for African violets in the home?

Place African violets in a location that receives bright, indirect light. A site near an east or north window is often a good location (do not place

African violets in direct sun). If a suitable window isn’t available, place African violets under a fluorescent light fixture containing two 40-watt fluorescent tubes. Suspend the fixture eight to 12 inches above the plants and leave the lights on for 12 to 16 hours per day. The ideal temperature range for African violets is 60 to 80 degrees Fahrenheit. In winter, keep African violets away from cold drafts and heat sources.

How much light does an African violet need?

African violets need the proper amount of light to grow and bloom well. Plants that receive insufficient levels of light have thin, blue-green leaves with long petioles. They also don’t bloom well. Plants that receive too much light are stunted and produce small, crinkled, yellow leaves borne on short petioles. Generally, sites near north or east windows are best for African violets. However, if these sites are not available, African violets can be successfully grown under fluorescent lights. A fluorescent light fixture suspended eight to 12 inches above the plants and left on for 12 to 16 hours per day should provide sufficient light for African violets.

My African violets aren’t blooming well. Why?

The African violets may not be receiving adequate light. The proper amount of light is essential for good bloom - whether that is natural light or under fluorescent lights as described above.

Excessive fertilization could also be responsible for the poor bloom. African violets need to be fertilized to promote bloom. However, excessive fertilization leads to vigorous vegetative growth and poor flowering. Using a complete, water soluble fertilizer, apply a dilute fertilizer solution once every two weeks in spring, summer and fall. Fertilization usually isn’t necessary during the winter months.

The lower leaves on my African violet have turned yellow and become droopy. What could be wrong?

The symptoms suggest the African violet may have root rot. Root rot symptoms initially develop on the lower leaves. The lower leaves turn yellow and droop. As the root rot progresses, affected leaves turn brown and become mushy. Over time, the symptoms spread upward. Plants may eventually die if growing conditions are poor and no corrective actions are taken.

Root rots are usually caused by overwatering. African violets prefer an evenly moist soil. They don't like wet or dry potting soils. In wet situations, root rot fungi gradually destroy the African violet's roots, causing the plant to decline. Prevention is the best defense against root rot. Allow the soil surface to dry to the touch before watering African violets. Also, select a light, well-drained potting mix when potting or repotting African violets.

Yard and Garden: Grow Plants from Fruit

Mothers often remind children not to play with their food, but kids and houseplant enthusiasts may find it interesting and fun to start plants from the seeds and leaves of fruit. ISU Extension horticulturists tell how to start plants from pineapple tops and seeds from grapefruits and avocados. To have additional plant and garden questions answered, contact the ISU Hortline at 515-294-3108 or hortline@iastate.edu.

How do you root the top of a pineapple?

Cut off the top of the pineapple about 1 inch below the cluster of leaves. Trim away the outer portion of the pineapple top, leaving the tough, stringy core attached to the leaves. Also, remove a few of the lowest leaves. The pineapple top then should be allowed to dry for several days. The drying period allows the moist core tissue to dry and discourages rotting. After drying, insert the pineapple top into perlite, vermiculite or coarse sand up to the base of its leaves. Water the rooting medium. Keep the rooting medium moist, but not wet, during the rooting period. Finally, place the pineapple top in bright, indirect light. Rooting should occur in six to eight weeks.

When the pineapple has developed a good root system, carefully remove it from the rooting medium. Plant the rooted pineapple in a light, well-drained potting mix. Water well. Then place the plant in bright, indirect light for three to four weeks.

After three to four weeks, the plant can be placed in a sunny window. Keep the potting soil moist with regular watering. Using a soluble houseplant fertilizer, fertilize the pineapple once or twice a month in spring and summer. Fertilization usually isn't necessary in fall and winter. The plant can go outdoors in late May, but must come back indoors before the first fall frost.

How do you sprout an avocado seed?

To sprout the seed, remove it from the center of the fruit and wash in water. For propagation purposes, the broad end of the seed is regarded as the bottom. The pointed end is the top. Insert three or four toothpicks into the sides of the seed. They should be placed about halfway up the seed. Then suspend the seed over a glass of water. The bottom one-fourth of the seed should rest in water. The seed should sprout within a few weeks. During this time, periodically add water to maintain the initial water level. If the seed doesn't sprout within two months, discard it and begin another. The roots are usually the first to emerge from the seed. The stem appears later. Pot the seedling when the root system has become well developed; the roots are approximately 2 to 3 inches long. Remove the toothpicks and plant into a 6- to 8-inch-diameter pot using a commercial potting mix. Position the seed in the center of the pot. The top of the seed should be level with the soil surface. After potting, water thoroughly, then place the plant in a brightly lit location. A site near an east or west window is ideal. Water the plant on a regular basis. Keep the potting soil moist, but not wet. To encourage branching, pinch out the growing point when the avocado seedling is approximately 12 inches tall. Fertilize once or twice a month in spring and summer with a soluble houseplant fertilizer.

Can I germinate the seeds from a grapefruit?

Seeds of grapefruit, oranges and lemons can be germinated indoors. After removing the seeds from the fruits, plant the seeds in a pot containing potting soil. Plant the seeds about 1 inch deep. After planting, moisten the potting soil. Keep the potting soil moist until the seeds germinate. Germination may occur within two to three weeks or take as long as six to eight weeks. After the seedlings emerge, place the plants in a sunny window. Grapefruit, orange and lemon trees can be grown as houseplants for a few years. Eventually, however, they get too big for indoors and will need to be discarded. Plants grown from seeds seldom produce fruit indoors.

...and justice for all
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