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From the Editors

by Marilyn Odneal, *Managing Editor*

Winter is a always good time to sit by the fire and reminisce. Ben is doing just that with a retrospective look at highbush blueberry production in the Ozarks while several others are remembering trips and meetings they attended. A perspective on locally produced products is also presented as food for thought. Of course, future events are highlighted including the Small Fruit and Vegetable Conference and the Vegetable Production Workshops in February. During these winter months if you happen to think of some topics you would like to see covered in this newsletter, please let us know.

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The First Thirty Years

By *Ben Fuqua*

Professor, Soil Science

Missouri State University

Research plots were planted in 1975 to evaluate the performance of a “new” fruit crop to Missouri, highbush blueberries. Duplicate plantings of eight highbush blueberry cultivars (varieties) were established in Springfield at the Agricultural R&D (now Darr) Center and the Fruit Experiment Station in Mountain Grove. Varieties planted included: Bluetta and Collins (early ripening), Blueray, Bluecrop, Berkeley, and Jersey (mid-season), and Coville and Lateblue (late-ripening). The plots at Mountain Grove were terminated in 1981 and followed by other variety evaluation trials planted in 1986, 1988, and 1998. The original planting in Springfield was maintained through 2007, covering 30 years of berry production. Berries were harvested from these plants each year (beginning in 1977) with the exception of 2007. Listed below are a few observations on blueberry production in Missouri during the “first thirty years”.

1. Highbush Blueberries can be grown in Missouri: In 1975, most people were very skeptical about highbush blueberry production in Missouri. Although wild blueberries had been found in many parts of the state, Missouri’s soils and climate differed greatly from the conditions found in major blueberry producing areas of Michigan, New Jersey, North Carolina, etc. Thus, several modifications of soil and cultural practices were necessary to create a

more favorable “environment” for growing blueberries in Missouri.

Soil Modifications: Most soils in Missouri do not possess the physical nor chemical characteristics found in the soils of other blueberry producing states. Some Missouri soils are too shallow, too rocky, or too steep to grow many crops, much less highbush blueberries. Other soils have surface or internal drainage problems that keep the surface too wet for proper growth and development of blueberry roots. Low organic matter contents and high soil pH’s also contributed to the challenges of growing highbush blueberries in Missouri. Several modifications used to help alleviate these problems included: 1) increasing the soil organic matter content by incorporating green manure crops, such as millet, sudangrass, ryegrass, etc. (crops that produce a large amount of residue) into the plant row during site preparation; 2) Adjusting (usually lowering) the soil pH by incorporating sulfur (or limestone to raise pH) into the plant row; and 3) adding fertilizers (organic or inorganic) to supply other deficient plant nutrients as indicated by a soil test.

Cultural Modifications: Some cultural practices from other blueberry producing areas were also slightly changed to enhance blueberry production under Missouri’s soil and climatic conditions. Modifications included: 1) mixing additional organic matter (e.g., peat moss) with the soil around plant roots at the time of planting; 2) setting plants on berms (raised beds) to increase soil depth and improve drainage; 3) adding 6-8” (depth) of mulch around the plants to reduce water evaporation and control weeds; 4) installing drip irrigation systems to provide supplemental water to plants; and 5) correlating nitrogen fertilizers to soil pH’s, broadcasting small amounts of sulfur (or limestone) around plant roots or adding of small amounts of sulfuric acid via irrigation water to help stabilize the soil pH.

2. Consumers Like Missouri Grown

Blueberries: Most consumers in the “Show Me

State” had to be introduced to fresh blueberries and “showed” the versatility and superiority of Missouri grown blueberries. Many people helped “educate” consumers on the multiple uses of both fresh and frozen blueberries. Growers formed “The Blueberry Council of Missouri” and spent numerous hours promoting blueberries as a delicious fresh fruit and a fruit to be processed into great tasting muffins, pies, cakes, jams, etc. Individual growers also provided recipes and informative handouts at their farm, farmer’s markets, local fairs, and other public events to promote this new, blue-colored berry. Their diligent work certainly paid off! As soon as consumers tasted the large, flavorful, Missouri grown blueberry, they were hooked. Today, it is nothing uncommon for consumers to drive 25-30 miles to pick or buy fresh blueberries. Recent reports on the benefits of eating blueberries have also contributed to the increased popularity of this “healthy” fruit.

3. Summary: The “first thirty years” of highbush blueberry production in Missouri has been a learning experience for both researchers and growers. Missouri growers have a “can do” attitude that has resulted in over 175 acres of blueberries now in production across the state. Missouri blueberry growers are observant, innovative, and diligent workers who are willing to share their experiences (both good and bad) with new or potential blueberry producers. And while there are still many challenges (diseases, weeds, insects, birds, nutrient management, etc) yet to be solved, Missouri blueberry growers continue to produce high yields of quality blueberries.

Remember: Subscribe or Unsubscribe to the Berry Basket at <http://mtngrv.missouristate.edu/newslet.htm> or contact Pamela Mayer PMayer@missouristate.edu 417-547-7533

Where Does Your Food Come From? Eat Local!

By Jennifer Schutter

Horticulture Specialist

University of Missouri Extension

It's almost that time of year, time to start thinking about what seeds you are going to order and what plants you are going to grow during this next growing season. You probably need to start thinking about which crops you want to sell at the farmers' market and if you need to make any changes from last year.

There is a growing interest in farmers' markets or community markets. A major advantage of the farmers' market is that it provides an effective marketing system for the producer or farmer. The producers are often part-time, retired or hobby gardeners looking to supplement their incomes. The farmers' market allows an opportunity for a "mix" of vendors operating side by side in the market. Farmers' markets are much more than just a place to sell food. They are a venue for socializing, where urban residents meet farmers. Consumers benefit by receiving fresh, high quality products and the opportunity to directly interact with the producer. Farmers' markets have figured in the revitalization of downtown districts, bringing people into areas that were once vacant on Saturday mornings. Many people look forward to market day and this interaction at the farmers' market.

I shop at the Kirksville farmers' market nearly every Saturday morning during the growing season. It gives me the opportunity to meet with the producers and see them selling their products. Many of them I work with on a regular basis, making farm visits to diagnose disease or insect problems and assist them with production practices. We have a program in Extension called "Missouri Grown". In the Northeast Region where I am located, two agronomists, an ag-business specialist and I work with producers year round with their

farming operations. We put on farmers' market workshops and workshops geared toward the production of fruits and vegetables. We also have a vegetable field day during the summer to show consumers as well as other producers how and what local produce is grown here. In September of each year, we host the Northeast Missouri Food Fest, which is a celebration of locally produced foods. This event held in conjunction with the Kirksville farmers' market, brings producers and consumers together for a morning of cooking demonstrations using all locally grown food, product samples from producers, and awareness and education of what is grown locally.

A large majority of people when they shop at the grocery store today, don't bat an eye at the sight of strawberries or perfect tomatoes in winter. In the space of a generation, we've become accustomed to eating food that's never grown roots in local soil. In fact, most produce grown and food produced in the United States travels an average of 1,500 miles before it reaches your dinner plate. With more and more education and awareness, people are buying more locally grown products for freshness, quality and food security than they have in the past.

Trucking, shipping and flying in food from around the country and the globe takes a toll on the environment and on public health. Take grapes, for example. Every year, nearly 270 million pounds of grapes arrive in California, most of them shipped from Chile to the Port of Los Angeles. Their 5,900 mile journey in cargo ships and trucks releases 7,000 tons of global warming pollution each year.

"Food is traveling farther than ever. Once upon a time people ate seasonally, artichokes in the winter, cherries in June. Now you can buy most fruits and vegetables practically year-round. The average American meal contains ingredients produced in at least five other countries. The transportation of food and agricultural products constitutes more than 20 percent of total commodity transport within the United States. To help reduce CO₂ emissions (released from trucks, airplanes, and cargo

ships), it's best to buy food that's in season, organic, and grown locally." —Vanity Fair, April 2006.

The way we eat has an enormous impact on the health of the planet. By choosing to eat lower on the food chain, and focusing on local and organic produce, we can curb global warming and air pollution, avoid toxic pesticides, support local farmers and enjoy fresh products.

Hints for High Tunnels

By Marilyn Odneal
Horticulture Outreach Advisor
Missouri State University

High Tunnels or Hoophouses were featured in a day long session at the Great Plains Vegetable Growers Conference held in St. Joseph, Missouri January 10 – 12. Grower experiences, soil management, the basics, irrigation, and pest management were all addressed in this excellent program.

Eldon Everhart from Iowa State uses the terms hoophouse and high tunnel interchangeably for greenhouse-type structures that are not heated over winter – “However, if you order a “hoophouse” from the South, it may not have roll up sides”, which are important in regulating the temperature inside.



Farm Tek single bay high tunnel

Alex Hitt, a North Carolina grower with 27 years of experience, grows 160 different varieties of flowers and 80 varieties of vegetables in both single and multi-bay tunnels. He pointed the importance of choosing a high tunnel to solve a problem in your operation. You need a good reason, since high tunnels are more expensive per square foot. Alex decided to construct high tunnels at his farm because he lost a significant amount of his tomato crop to diseases brought on by wet weather. Keeping the tomatoes dry in the high tunnels solved a serious problem he was having and the tunnels paid for themselves in three years. Although season extension is a common reason high tunnels are used, Alex gave excellent examples of other uses for high tunnels including protecting plants from winds, shading plants and even keeping flowers safe from volcanic ash.

There are many types of high tunnels with different features. All are good in different situations. For example, the multi-bay tunnels are better in wind, but do not tolerate a snow load, whereas single tunnels are better suited to winter production.

Alex Hitt advised growers considering the purchase of a high tunnel to “know the crop; know what you need; then choose a high tunnel to fit.”

Eldon Everhart likened the environment in a high tunnel to an “irrigated desert” and noted that much of our food production comes from irrigated deserts. However, Brett and Brandon – brothers working on a family farm – noted that “under the Haygrove tunnels, it was about 5 – 10 degrees cooler in the 100 degree weather. The plastic is a special type that diffuses the sunlight all around the plant. The shadows look different in this light.” Brett and Brandon’s produce buyer boasted that they brought “California quality” to the grocery store.

Considering high tunnels as irrigated deserts, water management was an important topic. Eldon Everhart talked about tensiometer use to monitor soil moisture. He likened a raised bed in a high tunnel to a bathtub “You fill it up and when it empties out you fill it up again”.

Most of the tunnels are drip irrigated and are not exposed to rain with the plastic cover, therefore there was concern about salt buildup in high tunnels. Sherry Knewton, a graduate student at Kansas State University, did a survey of 97 high tunnel producers in a four state region and although 35% saw a white powder residue on the soil under their tunnels, only 7% had salt high enough to worry about in the top 6 inches of their soil. It is rare to have salt in the water in the Midwest and if a problem should arise, it would be manageable. Irrigation management is key and it is also important to note that salt has a bigger effect on small plants, so leaching the soil before transplanting is a good idea. Other techniques include removing the plastic in winter so the soil is exposed to rain or using sprinklers in the high tunnel on some crops.

Drainage ditches need to be dug around the multi-bay tunnels since there is runoff from the plastic and considerable splash at edges. There was a difference in soil moisture levels between the edges of a tunnel and the middles, so crops may be planted accordingly. Some growers discussed locating a tunnel over a low spot for crops that like ample moisture like lobelia, thus decreasing the need for supplemental irrigation.

One of the really interesting features of high tunnels is that they can be built on rails or flat plates that serve as skids, so they can be pulled from one place over to another like a train car. Once one crop no longer needs the



Haygrove multibay high tunnels

protections of a tunnel, you can just move it down the line and over another crop. For further reading on these fascinating structures, you may be interested in some of the related references recommended by the presenters:

The New Organic Grower. 1995. Eliot Coleman. Chelsea Green Publishing Company.

The Winter Harvest Manual: Farming on the Backside of the Calendar. 1998. Eliot Coleman. Back40Books http://www.back40books.com/get_item_whm.htm .

Hightunnels.org <http://hightunnels.org/>

Tensiometer Tips for Vegetables, Hank Taber, Iowa State University
http://www.public.iastate.edu/~taber/Extension/tensiometer%20tips/tens_tips.html

Ivan's Figs

*By Marilyn Odneal
Horticulture Outreach Advisor
Missouri State University*

Remembering the first harvest of our fig plants at the State Fruit Experiment Station, we were amazed at how delicious fresh figs grown in Missouri could be. We heard about a fellow who was growing figs for the St. Louis market in a high tunnel and contacted him to arrange a visit. Ivan Stoilov graciously invited us to come out to his planting in Dittmer, Missouri in mid July “which is a good time to see the fruit of several of my varieties”. Ivan is a trained biochemist and has done significant work in the marine environment we learned while looking at his underwater photos. His creative scientific background is evident in many of his plantings and operations, including his high tunnel figs.



Patrick Byers and Ivan Stoilov evaluating figs

Ivan produces figs in a heated high tunnel and sells fresh product at the Tower Grove Farmer's Market in St. Louis as well as to a restaurant in St. Louis. "Andy Ayers", the owner and chef of Riddles Penultimate Café and Wine Bar, "is my mentor", Ivan says. "Excellent food is his goal, so he seeks the best and freshest produce. I can deliver the freshest and highest quality figs to his restaurant. He helped me see that high quality produce has a market" Figs must be allowed to fully ripen on the tree since they will not ripen further after they are picked. Ripe fruit is soft when starting to bend at the neck. Fresh figs do not keep well and can be stored in the cooler for 2 - 3 days, therefore



Figs growing in the high tunnel

local production is a definite advantage for those seeking fresh figs.

We feasted on figs picked in the high tunnel. Ivan grew several varieties including Chicago Hardy, but also identified his cultivars as "this is the one I got from a Greek friend, and this one I got from an Italian gentleman, and another from a fellow Bulgarian". Many immigrants brought with them figs from their home country and grew them in colder areas in the states protected in a "fig house" or by burying the plant over winter. Ivan took this tradition one step further by growing figs in a heated high tunnel and supplying local markets. After we were full of figs, we continued to eat when Ivan's lovely mother treated us to fig and walnut conserve and other delights.



Several fig varieties in the hand

Ivan's figs and those grown at the experiment station are classified as the persistent or common figs that do not need pollination to set crops. *Ficus* or figs are members of the mulberry family. The fruit of the fig is a syconium, an enlarged, fleshy, hollow peduncle that bears flowers in its inner wall. When these inner flowers ripen into fruit, we eat the peduncle container and the fruit within.

Fig varieties can be green, yellow or dark. Some fig species bear two crops in a season, the first crop or Breba crop is produced on the old wood produced the year before and a second later crop that is produced on the new wood produced in the current season. Although we have no trouble harvesting the Breba crop from a fig that was buried and protected over the winter, the crop that is borne on the new wood may or may not ripen in our season.

We are anxious to see how Ivan's "experiment" in fig production develops. Several things need to be worked out including pruning to keep the plants in bounds in the heated hoophouse, the best plant spacing for the long term, pruning practices and so on. Ivan also produces other crops for the fresh market. In keeping with his first priority - quality - Ivan chose particular heirloom tomatoes and peppers from his ancestral home of Bulgaria "because the others just don't have flavor!"



Heirloom tomato and peppers from grown for rich flavor

Editor's note: At the Missouri State Fruit Experiment Station, we have rooted several varieties of figs from cuttings obtained from the USDA Germplasm Repository in 2007 and plan to plant them for observation in 2008. The rooted varieties include Alma, Conadria, Kadota, Celeste and King. Special thanks to Elizabeth Young for donating a plant of Violette de Bordeaux to the station. We hope to obtain several others to observe including Hardy Chicago.

2008 Missouri Small Fruit and Vegetable Conference

The date, **February 18-20**, is rapidly approaching, and some may be asking the question, why attend this meeting? **What's in it for me? Here is the answer.**

The failure or **success of your business depends on you, and you are much more effective if you are informed.** The Conference provides you with an excellent opportunity to hear the latest developments in your industry from nationally recognized experts. Don't miss this information packed opportunity!

What about others involved in your business? You might think of them as competitors, but they share a common interest with you. The Conference provides a forum for interaction, **where people are happy to share successes and (perhaps most importantly) those things which didn't work.**

Fellowship is another benefit of attendance at the meeting. Here is where you will form the network that can serve you well later on. That handshake after a presentation, that shared meal while discussing last season's challenges, these contacts are enjoyable when they occur and valuable in the future.

Where will you purchase the inputs for your business? **The Missouri Small Fruit and Vegetable Conference has a great trade show.**

Have you had a chance to meet your colleagues from the various **government agencies, who are there to serve you?** They attend the conference. What's more, so do their bosses. If you really want to make an impact, collar a dean, a department head, or a regional director, and let them know your concerns. They will remember you when it comes time to make decisions that affect your industry.

Bring your family. There will be ample time to share with those close to you. Springfield is a fascinating place, perfect for a **winter getaway.**

We will see you at the 2008 Missouri Small Fruit and Vegetable Conference!

Kiwi Korner, PA

By Patrick Byers

Fruit Grower Advisor

Missouri State University

Recently I attended the NCCC-22 Small Fruit and Viticulture Research meeting, held this year in Pennsylvania. The research reports and seminars were valuable, but I particularly enjoyed the tours associated with this year's meeting. I have an interest in alternative fruit crops, and the tour included a stop that focused on one of these crops, **hardy kiwi**.

The term "hardy kiwi" is actually used with several species of *Actinidia*, including *A. arguta*, *A. cordifolia*, and *A. kolomikta*. These delicious fruit are closely related to the familiar fuzzy brown kiwi, *A. deliciosa*, but produce smaller, smooth-skinned fruit. The plants are hardier than the fuzzy kiwi, and are well suited for production in Pennsylvania. As an aside, hardy kiwi are under evaluation at present at the MSU State Fruit Experiment Station, and have been tested in the past at the MU Southwest Research and Education Center in Mount Vernon.

The tour highlight was **Kiwi Korner** (<http://www.kiwiberry.com/index.html>), located near Danville, PA. Kiwi Korner is owned and operated by David Jackson and Holly Laubach. David and Holly have 20 acres devoted to commercial development and production of hardy kiwi. The farm was established in 1987, and over the past 20 years they have grown and tested a number of hardy kiwi cultivars, experimented with different planting systems, and developed hardy kiwi as a commercially available fruit crop. David has worked closely with researchers from Penn State University and Cornell University, including our tour organizer, Kathy Demchak of PSU.

Upon arrival at Kiwi Korner we were greeted by David and immediately hiked out to a production plantation. David has evaluated over 50 different hardy kiwi cultivars and selections and has settled on 2 as the best cultivars at Kiwi



"Passion Popper" hardy kiwi fruit

Korner: "Passion Popper", a selection of *A. arguta* that he developed; and "Aloha Annas", a selection of the cultivar "Ananasnaja". Other cultivars that he feels show promise include "K2D4" (also called Hortgem Tahi) and "Red on Red". "Passion Popper" produces fruit that is green with a lovely red blush, medium in size, and achieving an incredible 28-32°brix level of sweetness. A "Passion Popper" vine may produce in excess of 60 pounds of fruit. In David's words, "This berry is the class act of the arbor by which all other varieties are judged." Fruit of "Aloha Annas" ripens after "Passion Poppers", and is a bit smaller. The fruit is green with a light rose blush, and is quite sweet as well.



The T bar trellis system for hardy kiwi

While David has grown hardy kiwi under a variety of planting systems, at present he favors a trellis design called the T bar system. This system includes 8 foot support posts and an 8 foot cross piece bolted to the top of the support post. Six wires are distributed on the cross pieces. Vines are spaced 18-30 feet apart in the row, and rows are 16 feet apart. The vines are trained up to the wires, and a permanent cordon is extended in each direction. At dormant pruning time much of the vine growth is removed, and laterals that originate near the cordon are laid down on the wires. David spaces the laterals 16-18" apart on the wires. The vines are summer pruned as well, with large bull canes removed. The row middles are maintained in a hard fescue cover crop, necessary on David's sloping site to reduce soil erosion.

Hardy kiwi is a dioecious plant (with male and female vines), and David has developed an interesting approach to pollination. Kiwi pollen is dispersed by wind as well as by insects. To provide for adequate pollination, male vines are interspersed with female vines in the plantation. A common planting plan would be to plant males in every second planting space in every second row. David has encouraged pollination by planting male vines in the last row on the upwind side of the plantation, and training the vines to climb into rapidly growing paulownia trees. Thus, pollen is dispersed by the wind over the entire plantation.

David mentioned several challenges. Biennial bearing can be a problem after a heavy crop. A disease called sooty smudge can disfigure the fruit. Sunburn can be an issue. Japanese beetle and western flower thrips can attack hardy kiwi. As Kiwi Korner's is certified organic, David uses tillage to control weeds under the trellis.

Hardy kiwi vines are in full production in 4 years, and a vine may produce 60-100 pounds of fruit. Fruit is sampled as the fall harvest time approaches, and harvest begins when the fruit reaches 9° brix sweetness. The fruit is firm when harvested, and fruit is removed from



Hardy Kiwi marketing ideas

the vine at the "snap spot" in the stem. Sugar levels build after harvest, sometimes doubling in storage. Fruit is stored at 36-38°F, and shelf life is at least 2 weeks. The fruit at Kiwi Korner's is graded and packaged according to the eventual market. Common packaging includes ½ pint plastic clamshells and bulk packaging. David and Holly have worked hard to promote hardy kiwi, and present accounts include Trader Joe's, Wegmans, and Whole Foods Markets. Fruit is generally available from late September to mid-October.

The first 20% of the harvest is the best quality and largest fruit, and David and Holly are interested in developing additional markets for the remainder of the crop. We had an interesting presentation from their friend Tom Webb of Spyglass Ridge Winery, of nearby Sunberry, PA. Tom has produced quality grapes and wines since 1995. Three years ago he began making hardy kiwi wine, using 100% "Passion Popper" fruit from Kiwi Korner's. After a period of trial and error, he now produces a wonderful golden wine that was a real treat to sample. The wine is marketed in 375 ml bottles and has a rich nose and a sweet finish. I was one of the fortunate ones to receive a bottle as a souvenir!

Are Your Plants Ready for Winter? - Evaluating the Condition of Strawberry Plants in the Plasticulture Production System

By Patrick Byers

Fruit Grower Advisor

Missouri State University and

Pamela Mayer

Conference Facilitator

Missouri State University

On December 15, 2007, the MSU State Fruit Experiment Station hosted a winter meeting cosponsored by the Arkansas Strawberry Growers Association. Among the speakers at the meeting was Jim Goodson of the Arkansas Strawberry Growers Association. Jim gave a very informative presentation on evaluating fall planted plasticulture strawberry plants. Wayne Simpson of Simpson's Berries in Mountain Grove provided plants for the presentation and demonstration, which focused on several plant characteristics.

Annual plasticulture strawberries are typically planted in late September or early October in Missouri, and plants must make sufficient growth during the fall to ensure a profitable harvest the following spring. Growers have the opportunity to prolong the growing season in the fall through the careful use of floating row covers and proper fertilization, but it is important not to "over grow" plants, with the resulting excess growth the next spring adversely affecting production. Fall management is thus a balancing act, and proper assessment of plant growth is critical. This article will focus on physical assessments of plant growth. A good time to assess plant growth is 6-8 weeks after planting, in November. Growers should focus on the following plant characteristics: plant spread and leaf development, branch crown development, and root development.



A well grown strawberry plant, with a crown diameter of 8 inches

Collect a sample of plants that adequately represents the field. Before digging, measure the plants. Plants should be 7-10 inches in diameter. Next count the fully developed leaves. A well grown plant will have 5-7 healthy leaves that have formed after transplanting. Don't count the small leaves that were present on the plug plant at transplanting. The leaves should be dark green, and should not exhibit evidence of spider mite injury.



This plant has 6 healthy leaves.

Branch crowns develop during the fall and also during the spring. The earliest of the branch crowns formed after transplanting will be in evidence at assessment time. Branch crowns may be easy to see, or may be small. Experience



Note the branch crowns that develop on the sides of the original crown. Visible branch crowns on the sides, the original crown in the center.

suggests that there will be 1-2 additional branch crowns formed by the plant that are not in evidence at assessment. A well grown plant will have 2-4 visible branch crowns.



A healthy crown has a clear cross section.

A healthy strawberry plant is well rooted, and is difficult or impossible to pull up by hand without damaging the crown. Dig up the plant with a spade, and examine the root system. The plant should have a number of large, healthy roots that originate from the crown area above the original plug root system. These roots will be pale in color, and will exhibit numbers of smaller first and second order roots. Next cut the roots just below the crown, and examine the root cross sections. Healthy roots have a pale



A well grown plant has an extensive root system, including a number of roots formed since transplanting (note the large roots).

or white cross section. Dark or reddish cross sections suggest disease issues such as red stele. Next slice the crown vertically, and examine the cross section. The crown should be a uniform light color. Dark streaks suggest environmental damage or disease issues such as anthracnose.

Keep in mind that growers should assess plant growth frequently during the fall, and adjust cultural practices accordingly.



Note that healthy roots have a clear, light colored cross section.

Turnout for the meeting was restrained due to the threat of winter storms, but the evaluations were good. Out of 18 returned, 17 reported excellent and very good., while one thought the workshop to be fair.



Beginning Vegetable Production Workshop

*February 2008 (at a location near you)**

Come join us!

University of Missouri Extension is conducting workshops on vegetable production that focus on the needs of Produce Auction growers. For 2008, the workshop will focus on beginning or basic issues, followed by advanced topics in 2009. Workshops are **FREE** and open to all producers.



Tentative Schedule:

10:00 AM Start Workshop
 Noon Lunch
 12:30 Workshop resumes
 3:00 PM Workshop ends (**But!**)
 3 to 4 PM Consider staying for training to receive private pesticide applicators license



Examples of some topics to be covered-
 Soil sampling, interpretation and fertilization.
 Irrigation- equipment and water quality issues.
 Greenhouse transplant production- the basics
 Introduction to high tunnel production.
 What is the recommended variety list?
 Tactics for more continuous production through the season.
 Basics on weed, disease and insect control.
 Harvesting and storage of vegetables.



Please help us plan!

Call (or mail) the Regional Extension Specialist, assigned to the workshop you want to attend, with the number that will be attending and their name(s).

Contact them by the Friday before that workshop



*Community, date and assigned specialist for workshop:

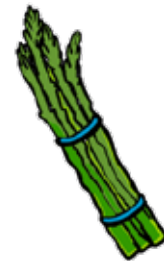
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Feb. 6 th –	Lamar	Jay Chism	417-682-3579
Feb. 26 th –	Barnett**	Joni Ross	573-378-5358
Feb. 27 th –	Jamesport	Tim Baker	660-663-3232

See reverse side for complete contact information or more workshop info.

** Transportation from Clark and Windsor will be provided.



Thanks to Region 7 of the EPA for funding these workshops



Beginning Vegetable Production Workshop

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Introducing Andy Read

By Andy Read

Horticulture Specialist

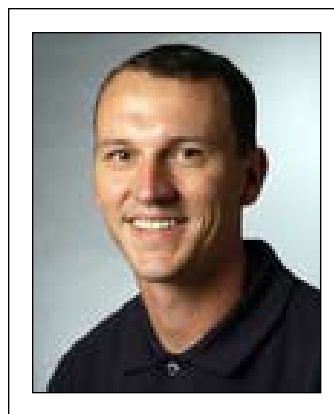
University of Missouri Extension

I am very excited to have taken over the horticulture specialist position for the south central region of the state. I have the pleasure of working with very knowledgeable extension specialists and other professionals to develop and administer horticulture programming throughout the region. It is great to see the excitement about horticulture in our area and the growers, homeowners and gardeners that I work with make every day fulfilling.

I have been involved in the horticulture industry for a little better than a decade. My first experiences came while working on a vegetable farm during my undergraduate days at Southern Illinois University. We grew a wide variety of vegetables and cut flowers that were marketed through a nearby farmers market and to local grocery stores.

After completing my undergraduate degree I decided to pursue a Masters degree at the University of Missouri Columbia. While in Columbia I worked as a research assistant involved with a wide range of vegetable research with an emphasis on high tunnel tomato production. For anyone who may be unfamiliar with high tunnels they are essentially hoop – houses that don't use heat or electricity.

When my graduate work was complete I moved to my current residence in Bland Missouri and started a business growing and selling cut flowers. Cut flowers are a great business for a small grower and I was able to develop clients all over Central Missouri and in the St. Louis area. Farmers markets were also a big part of my business and I sold at several in Columbia and St. Louis while producing flowers. Selling at farmers market helped us to start an offshoot business selling and arranging flowers for weddings and parties.



During the winters when business slowed down I would normally pick up work with some carpenters in the area to keep some money flowing in until spring. Last winter however I decided to use

my horticulture background and take a job at a vineyard in the St. James area. I quickly became fascinated with growing grapes and with the industry as a whole and the job went from part – time to a more than full – time manager spot so I didn't return to growing cut flowers for the 2007 season.

My career as a vineyard manager derailed when the horticulture specialist position with extension came open last summer. Imagine my surprise when the exact job that I went to college for opened up within 30 miles of my home. Well it turned out to be a great opportunity and I can't wait to work with more of the great people in our region during the upcoming growing season.

My wife Carrie who happens to be a professional flower designer (very handy for a cut flower grower) teaches 8th grade science in Owensville. Carrie is an excellent gardener, great at canning produce and always had a great rapport with florist and farmers market customers. We are the proud parents of a 2 year old girl named Isobel and a 10 month old boy named Hollis.

I'm sure you'll be hearing more from me in the future and I look forward to working with the growers and gardeners of Missouri.

Andy Read

Horticulture Specialist

University of Missouri Extension

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Coming Events

Four Vegetable Workshops

University of Missouri Extension is conducting workshops on vegetable production that focus on the needs of produce auction and wholesale growers. For 2008, the workshop will focus on beginning or basic issues, followed by advanced topics in 2009. Workshops are free and open to all producers. One of the four workshops is in the Southwest Missouri Region.

The Lamar, MO workshop will be on February 6th at the Thiebaud Auditorium. The workshop will start at 10 a.m. and finish at 4 p.m. These workshops will combine information on soil quality and fertilization practices, safe handling of pesticides and insecticides and integrated pest management.

MU Extension received nearly \$50,000 from the Environmental Protection Agency for this two year outreach program. Partnering organizations include the Missouri Department of Agriculture and local soil and water conservation districts. The focus of the project is on growers consigning at four wholesale auctions located around the state. This supply channel has increase rapidly since its inception in 1994 and many of the growers have unique programming needs. An estimated 10 percent of Missouri's fresh vegetable production is supplied through auction markets, which are located and managed within Amish and Mennonite communities. However, anyone who grows produce within a 100 mile radius of a produce auction, whether a large commercial grower or a gardener with surplus vegetables, is welcome to consign at these wholesale markets. Specific information on Missouri Produce Auctions can be found at – <http://agebb.missouri.edu/hort/auction/index.htm> .

Call or email the Barton County Extension office by February 1st if you would like to attend the workshop (417) 682-3579 or Bartonco@missouri.edu . Contact Jay Chism, MU Extension in Barton County for more information.

Missouri Small Fruit and Vegetable Conference

The 28th Annual Missouri Small Fruit and Vegetable Conference will be held at the Clarion Inn and Conference Center in Springfield, Missouri on February 18, 19, and 20. Monday the 18th is the Bus Tour. We will visit Willow Green Gardens and Tree Farm in Rogersville, Whispering Oaks Winery in Seymour, Baker Creek Heirloom Seeds in Mansfield, and Sunshine Valley Farm in Rogersville. Tuesday the 19th and the morning of Wednesday the 20th we will be hearing presentations in the Conference facility on a whole spectrum of small fruit and vegetable topics. For more information go to <http://www.mtngrv.missouristate.edu/commercial/conference.htm> or contact Pamela Mayer, Conference Facilitator PMayer@MissouriState.edu or 417-547-7533.

Spring Horticulture Seminar

The Tri-County Master Gardeners will present the Spring Horticulture Seminar "Greenhouses and Coldframes" presented by Jay Chism, Agronomy Specialist, on Saturday, March 15, 9:30am to 12:30pm at the State Fruit Experiment Station in Mountain Grove. For more information contact Marilyn Odneal, Horticulture Outreach Advisor, MarilynOdneal@MissouriState.edu or 417-547-7513.

Grow Your Farm Program

University of Missouri Extension is sponsoring a "Grow Your Farm" program. Grow Your Farm is designed for prospective farmers, beginners with some experience and seasoned farmers who want to make a "new beginning" with alternative farming methods. MU Extension specialists and experienced, innovative farmers teach the sessions. Grow Your Farm meets 11 times over a 16- to 18-week time frame. Classes include eight seminars with three farm tours. Several locations are available. For more information go to <http://extension.missouri.edu/growyourfarm/> or contact Ted Probert ProbertT@missouri.edu 417-741-6134.

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