

# SPROUTS

## Tennessee Vegetable News

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### Of special interest:

- ▣ Growing Asparagus
- ▣ Downy Mildew Alert
- ▣ What makes an onion "sweet"?
- ▣ Can and should you grow onions from seed?

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### What's new?

#### NCSU Asparagus Twilight Meeting to Showcase New Varieties

People who are interested in learning about the growing and marketing of asparagus are invited to come to an Asparagus Twilight Meeting on Thursday, August 16, 2007 at 6:00 PM at the farm of Mr. Garnett Carr in Roxboro, NC, according to Carl Cantaluppi, Area Horticulture Agent for the NC Cooperative Extension Service.

The meeting is designed to showcase the 1/4 acre variety trial plots and compare the 13 different varieties grown on the farm by disseminating research results from the first harvest season.

Carl will talk about site and soil considerations for growing asparagus, as well as fertility requirements, insect, disease, weed control, harvesting and marketing techniques, and costs in growing the crop. A planting demonstration will be given with the middlebuster or lister plow to open a furrow and plant dormant 1-year old crowns. For more information see the 'Upcoming Events' section on page 4.

#### Downy Mildew Found In North Carolina

North Carolina State University today reported that downy mildew is widespread in cucurbits in Eastern North Carolina. Previously this fun-

gus had only been reported in fields in the South in Florida and southern Texas. It seems the mildew has jumped over or gone unreported in Georgia and South Carolina, though both states have cucumber crops.

Earlier this year, an infected greenhouse in Ontario, Canada was believed to cause limited spread of downy mildew in Ohio and Michigan.

*For more on downy mildew, how to recognize its symptoms and how to control it, read 'Be vigilant as downy mildew hits Southern cucurbits' in The Grower magazine at: [www.growermagazine.com](http://www.growermagazine.com).*

### Weather Report

Again this week, some had more than their share of rain, while others remained bone dry. The next week seems to promise more of the same. There is a good chance for showers tonight across much of the state with those chances dwindling as the week progresses. For next week, high's will be in the mid to upper 80's for most of the state, with low's in the low to upper 60's. More dry weather will allow for plenty of time for crop scouting- one of your best pro-active pest control tools. As we mentioned above, be

on the lookout for downy mildew on your cucurbits. Also, watch for insects. This is the year of the thrips and spider mites. Besides damaging the leaves themselves, thrips also transmit the tomato spotted wilt virus. They can be controlled conventionally with Admire, Spintor, and Lannate, as well as Monitor in certain counties. See the UT Extension '2007 Commercial Vegetable Disease, Insect and Weed Control' for application rates and timing: [www.utextension.utk.edu/publications/pbfiles/PB1282.pdf](http://www.utextension.utk.edu/publications/pbfiles/PB1282.pdf). Also in the forecast this com-

ing week, is plenty of fire-works for the 4th of July. Here's to selling out of those watermelon and sweet corn crops and a happy and safe holiday to all.



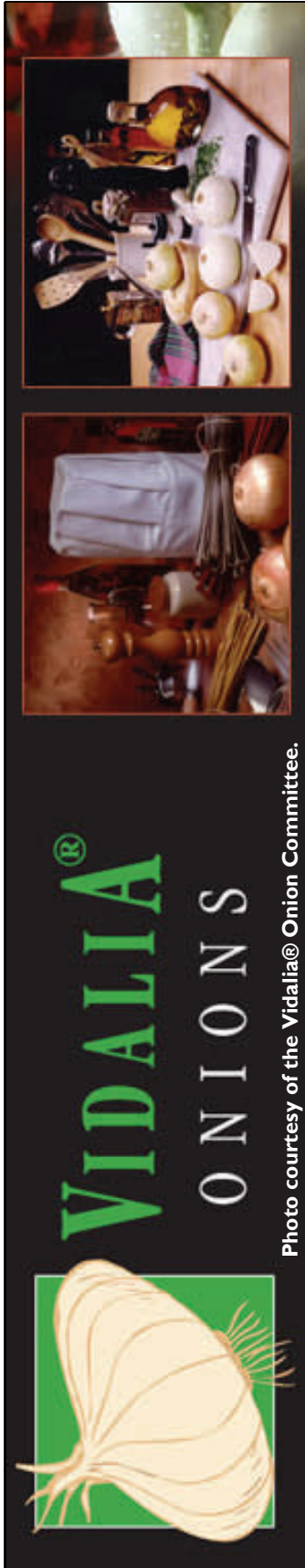


Photo courtesy of the Vidalia® Onion Committee.

## What makes an onion “sweet”?

When people find out I've worked with the Vidalia Onion industry, they always give me their “arm-chair” opinion as to why those onions are so sweet in flavor. First off, I'll give you a little history lesson. Onion cultivation dates back to over 4,000 years ago, making it one of the oldest vegetable crops. Some of the earliest records came from the walls of pyramids, were onions were used in burial ceremonies in ancient Egypt. There are over 500 species of onions. However, characteristics of pungent odor and taste commonly associated with onions are not present in all cultivars.

The Vidalia onion industry is one supplier to the sweet onion market. The Vidalia onion is a sweet-tasting “Yellow Granex” hybrid, and gets its name from the small eastern Georgia town of Vidalia, where it is grown. In the 1930's, a farmer named Mose Coleman found that onions grown in Toombs County, Georgia were sweet instead of pungent. Sold at the Vidalia State Farmer's Market, people began to refer to them as “Vidalia” onions. Production increased as the popularity of the onions spread. In 1986, the Vidalia onion was given legal status and its 20-county production area was defined. Under a federal marketing order, only those onions grown within the production area can be classified as Vidalia onions. In 1990, the Vidalia onions were named Georgia's Official State Vegetable.

Now, back to that sweet flavor... Onions get their distinct odor and flavor from sulfur taken up from the soil. Onions cells have no odor until they are cut or bruised.

Upon cutting or bruising, the enzyme alliinase reacts with flavor precursor compounds present in the tissue to give rise to tearing and pungent flavors.

Species of the genus *Allium* differ in flavor precursor content. The flavor precursors are sulfur-based compounds: S-methyl, S-propyl, S-propenyl, and S-allyl cysteine sulfoxides. Onions are characterized by high proportions of S-propyl and S-propenyl cysteine sulfoxides. The lacrimatory, or tear-producing effect in onions comes from the hydrolysis of S-propenyl cysteine sulfoxide.

Several factors contribute to onion flavor development, starting with the genotype or variety. Short-day onions grown in southern climates of the U.S. are characteristically mild in flavor, as compared to long-day cultivars grown in the North. Environmental factors also contribute to pungency in onions. Onions grown at higher temperatures develop faster and are more pungent. Greater amounts of soil water (or irrigation) present during onion development act to dilute pungency. Sulfur nutrition probably plays the most important role in onion flavor development. Sulfur is used primarily in onion growth, but when the growth requirements are met, the available sulfur is

**By Dr. Dean Kopsell**

transferred to flavor precursors (pungency). Studies show that increases in sulfur nutrition will result in increased onion pungency. So, how do I answer those who ask why Vidalia growers can produce such sweet onions? I say they start with the right type of onion, they grow them in the winter and spring when temperatures are cooler, they grow them on sandy soils that don't hold sulfur fertilizers very well, and lastly, all of the Vidalia acreage is irrigated. To grow mild onions yourself, hold back on sulfur fertility, give your onions plenty of water, and make sure to start with mild-tasting cultivars.

*Dr. Dean Kopsell is an assistant professor of vegetable crop physiology in the Plant Sciences Department at the University of Tennessee. Corresponding author's email: [dkopsell@utk.edu](mailto:dkopsell@utk.edu).*

*The Vidalia onion growers are a great example of a successful grower cooperative, of sorts, like our own 'Grainger Co. Tomatoes' taken a step further. Also, an ideal example of clever marketing, with name recognition—from their logo to their promotional photos. For more information on Vidalia onions, go to the official website: [www.vidaliaonion.org/commercial/about-vidalia-onion-committee.aspx](http://www.vidaliaonion.org/commercial/about-vidalia-onion-committee.aspx).*



Photo by Lori Grice and courtesy of the Vidalia® Onion Committee.

[www.LoriGrice.com](http://www.LoriGrice.com)

## Question of the Week

**Q:** I have a question on growing onions from seed. One of the larger vegetable growers, who brings a large variety of vegetables to our farmers market, asked me about the possibility of doing that to cut production cost in raising onions. Do you have any information on this? -J.B.

**A:** For the answer to this week's question, I turn to our onion growing experts down at the University of Georgia. George E. Boyhan, Darbie Granberry, W. Terry Kelley and Reid L. Torrance wrote the 'Transplant Production' section of the [UGA Onion Production Guide](#) and this is what they had to say: Short-day onions can be grown from both seed and transplants, but growing onions directly from seed has largely been abandoned be-

cause of several problems. First, onion seed is very small and requires adequate, even moisture during the critical germination process. This is difficult to provide during the extremely hot and dry conditions of the September/October planting season in South Georgia.

**Keep in mind that South GA will remain warmer in the Fall and experience a milder winter than we will in TN.**

Finally, direct-seeded onions in South Georgia are more prone to bolting or developing seed stems. This is particularly true if they are seeded early (Sept. and early Oct.) and there is cold weather in the latter part of the season, particularly in March. Direct seeding onions in late Oct. or early Nov. to avoid seed stem development

may not give the plants sufficient time to develop and withstand potential frost and freezing temperatures. Transplants are produced in the fall for winter transplanting. Seed are sown beginning in September. Therefore, transplant production should begin at least one month prior to sowing seed in the plant beds.

For more information on growing onions and producing transplants, download the UGA Cooperative Extension Service 'Onion Production Guide,' at: <http://pubs.caes.uga.edu/caespubs/pubcd/B1198.htm>.

**Do you have a vegetable question?**

**Send it to:**  
[awszelak@utk.edu](mailto:awszelak@utk.edu).

1 ounce=9,500 onion seeds

Seeds will remain viable for 1 year.

Photo and onion seed facts courtesy of Texas A & M University.



## Crop Report

This week took me down to Amish Country in Lawrence Co. for some farm visits. The Amish Auction is in full swing there, with plenty of tomatoes, squash, zucchini, okra, and beans. Some will have canteloupes within a week and sweet corn is also on the way. The Lawrence Co. agent, Wendel Smith, does quite a bit of vegetable growing himself. He is trying once again this year for the a record-breaking giant pumpkin, and is trialing 24 other varieties of pumpkin.

On the east side of the state, the Scott Farm has plenty to harvest. Today they were busy picking sweet corn, so that Food City will be stocked for the 4th of July BBQ's. They started their

corn from transplants early in the Spring to get a jump on the market. Also, the slicing and pickling cucumbers were ready to harvest. At the Scott Farm they use a trellising system for their cucumbers (see photo at right). This not only helps the harvesters when picking, but also reduces disease, produces straighter cukes, and yields more #1's when they are graded out. They have a portable washing and packing station right in the field, so fruit are only handled once. Yellow squash was also being picked and the half runner beans were soon to follow. For the last several years, they have been growing some of their tomatoes in a strip-till system. Strip-tilling into a

cover crop can help to reduce weed pressure and disease in the crop and also help to conserve moisture. Last year, one of their strip-till fields produced the highest quality tomatoes of all the fields that they grew. Strip- and no-till vegetable production has great potential in Tennessee and has been underutilized.

Remember as the harvest season progresses and heats up, harvest in the morning, when it is cool and keep the crop out of the sun and get it into a cooling facility, if available, as soon as possible after harvest. For many crops, such as sweet corn, removing the field heat will greatly increase its storage potential and help to maintain its quality.



## Upcoming Events

### **TN Agricultural Enhancement Program– Producer Diversification Cost Share Program**

Applications accepted: **July 2 - August 31** (postmarked)  
Additional details at [www.state.tn.us/agriculture/enhancement/growth.html](http://www.state.tn.us/agriculture/enhancement/growth.html).

### **Sunbelt Ag Expo Field Day**, July 10, 2007, Moultrie, GA

For more information visit [www.sunbeltexpo.com](http://www.sunbeltexpo.com) or call 229.985.1968.

### **Summer Celebration**, July 12, 2007, West Tennessee Research and Education Center, Jackson, TN

For more information, visit: <http://agriculture.tennessee.edu/news/FieldDays/>.

### **National Association of County Agriculture Agents Annual Meeting/Professional Improvement Conference**, July 15-19, 2007, Grand Rapids, MI

For details, visit [www.naccaa2007.msu.edu](http://www.naccaa2007.msu.edu).

### **Small Business Development Workshop**, July 17, 2007, Agricultural Information Technology Center on TSU main campus, Nashville, TN

Pre-registration is required by July 13, 2007 to get number of attendees as well as a number for lunch. Please call Ms. Linda Buchanan at 615-963-1827 to reserve your seat and lunch.

### **Building and Sustaining Effective Community Food Projects- A Training Facilitated by Southern SAWG**, July 25-26, 2007, Nashville, TN

For more information, contact Keith Richards at [keith@ssawg.org](mailto:keith@ssawg.org) or 479-587-0888.

### **2007 Annual Small Farm Expo/Small farmer Recognition Program**, August 2, 2007, TSU Research and Demonstration Farm, Ashland City, TN

For more information and registration, contact Hilda Gooch at 615.963.5530 or [agooch@tnstate.edu](mailto:agooch@tnstate.edu).

### **Steak and Potatoes Field Day**, August 7, 2007, Plateau Research and Education Center, Crossville, TN

For more information, visit [www.agriculture.utk.edu/news/FieldDays/](http://www.agriculture.utk.edu/news/FieldDays/).

### **Potato Association of America 91st Annual Meeting**, August 12-16, 2007, Idaho Falls, ID

For details visit [www.conferences.uidaho.edu/PAA](http://www.conferences.uidaho.edu/PAA).

### **NC State University Asparagus Twilight Meeting**, August 16, 2007, Roxboro, NC

Learn about growing and marketing asparagus, including site and soil considerations, fertility requirements, insect, disease, weed control, harvesting, marketing, and cost of growing. For more information, contact Carl Cantaluppi at [carl\\_cantaluppi@ncsu.edu](mailto:carl_cantaluppi@ncsu.edu) or call 919.603.1350.

### **Sunbelt Ag Expo- 30th Anniversary Show**, October 16-18, 2007, Moultrie, GA

For more information visit [www.sunbeltexpo.com](http://www.sunbeltexpo.com) or call 229.985.1968.

### **International Irrigation Show**, December 9-11, 2007, San Diego, CA

For details, call 703.536.7080 or visit <http://www.irrigation.org>.

### **Tennessee Fruit and Vegetable Association Convention**, December 9-11, 2007, Nashville Airport Marriott, Nashville, TN

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