

Georgia Extension Vegetable News

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the product. Sample labels will be made available in PDF format.

Managing Yellow and Purple Nutsedge Between Spring and Fall Vegetable Crops

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New Telone Products Registered

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The long awaited labels for Dow AgroSciences drip-applied Telone products have finally arrived. I just received word that both Inline (compare to Telone C-35) and Telone EC (compare to Telone II) were granted Section 3 (Federal) labels about two weeks ago. These materials will give growers who utilize second and third crop plastic and drip tape the option of treating for nematodes and soilborne diseases by injecting Telone products directly through the drip tape. This should be the best option for controlling nematodes on second or third crop plastic. In talking with some of the Dow industry reps., the higher rates should be used for both products when high nematode pressure is evident. Also, do not exceed the 1500 ppm concentration while injecting as damage to drip tape may occur. Injection times should exceed 4 hours for proper and safe distribution of

Vegetable producers often are very concerned about controlling nutsedge species during the production of a spring and/or a fall crop; however, managing nutsedge between these two seasons is usually overlooked.

Should growers even be concerned with the additional cost of managing nutsedge when a crop is not being produced? Research over the past several years has focused on the growth and reproduction of nutsedge species. A single parent purple nutsedge tuber can produce at least 29 additional tubers in 3 months and 323 tubers in 6 months. With these numbers and keeping in mind that each new tuber is also producing, expansion from a single tuber is tremendous. Similar results were noted with yellow nutsedge where a single parent yellow nutsedge tuber produced 22 tubers in 3 months and 135 tubers in 6 months. Therefore, in most field situations where nutsedge is a concern, methods to help minimize nutsedge reproduction in between spring and fall vegetable crops.

Unfortunately, in vegetables and even in-between vegetable crops, few options are available to

effectively control nutsedges. Repetitive tillage operations are very effective in managing nutsedge, but this practice is, of course, not acceptable with most plasticulture operations. Thus, growers are often limited to herbicides. Both glyphosate (Roundup, others) and paraquat (Gramoxone, Boa) could be applied as non-selective herbicide applications to help manage nutsedge reproduction between crops. However, neither glyphosate nor paraquat are terribly effective in controlling nutsedge, although data suggest that glyphosate has the greatest long term impact in managing nutsedge reproduction. Many glyphosate labels recommend an application of 3 lb ai/A of glyphosate for the control of yellow and purple nutsedges; however, our data suggest that sequential applications of 1.5 lb ai/A would likely be the best choice. The benefits from sequential applications is better control of existing nutsedges as well as control or suppression of nutsedges that emerge after the first application.

It is important to remember when applying glyphosate or paraquat over plastic during any part of the season, at least 0.5 inch (preferably in a single event) of rain is needed to wash the herbicide off the plastic before planting the next crop.

Admire and Provado Received a Section 3 (Federal) Label for use on Succulent and Edible Podded Beans, and Turnip Tops

David Adams
Extension Entomologist - UGA

Bayer corporation received a federal label for the use of Admire and Provado on succulent and edible podded beans and turnip tops. Even though the turnip top label is a bonus, the succulent and edible podded bean label replaces the need for procurement of an emergency exemption and can be used more timely for silverleaf whitefly(SLWF) management. The Provado label of course gives us the alternative to use imidacloprid as a foliar spray. However, the soil applied Admire gives

better efficacy on whitefly because of the systemic activity absent with foliar sprays of Provado.

Update on the Pursuit of Emergency Exemption for Knack on Succulent Beans

David Adams
Extension Entomologist - UGA

We have submitted a package for the use of Knack, Valent's IGR, for control of SLWF on snap beans. It has just been submitted and will take EPA an undetermined amount of time to determine its legal issuance. Florida secured this emergency use on their 00-01 bean crop, and I feel confident that we will be successful also. If it is not received in a timely fashion, we will ask for a crisis exemption until it is officially issued under the Section 18. **It is not legal at this time to use Knack on succulent beans.**

The overall deficit of using Admire and Knack on snap beans is just that, a 'deficit'. I am not sure our return on beans is sufficient to pay for the full treatment with both materials. However, the grower can add this to his production costs and tell us if he can get his investment back. All we can do is support the procurement of the options.

So far, SLWF has been slow to develop probably due to the recent changes in the climatic conditions. If showers are frequent, maybe we will not build as large populations as over the past two years. Cotton is the signal crop, so watch it closely to get an idea of the overall strength of the whitefly potential.

Vegetable Cooling Methods

Paul Sumner
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Many vegetables can be cooled with several types of coolers. Selection of the best type of cooler for a particular operation depends on several considerations, such as the mix of commodities handled, the length of

the cooling season, the need for fast cooling, and so on. Table 1 compares the common cooling methods.

Table 1. Comparisons of product effects for common cooling methods.		
	Typical cooling time (hr)	Product moisture loss (%)
Forced Air	1-10	0.1-2.0
Hydro	0.1-1	0-0.5
Vacuum	0.3-2	2.0-4.0
Ice	0.1-0.3*	No data
Room	20-100	0.1-2.0

* Top icing can take much longer.

Forced-air cooling is widely used for fruit-type vegetables. Most perishable commodities can be effectively cooled with this method. Its main disadvantage is water loss, which can be minimized by cooling as fast as possible after harvest and using high airflow rates in the cooler.

The next cooling method used is **hydrocooling**, which is used for root, stem, and flower vegetables. Produce exposed to adequate water flow cools quickly with no moisture loss. In some cases, wilted product may actually gain some moisture. The main disadvantages of hydrocooling are that recirculated water must be carefully disinfected to prevent spread of decay organisms; packaged produce must use water-resistant containers. In addition, wax-dipped, corrugated fiberboard is significantly more expensive than untreated fiberboard and is not easily recyclable.

Vacuum coolers are used mainly for vegetables that lose water easily, such as leaf vegetables. Short cooling times are needed to spread the high capital cost of this equipment over enough product. Vacuum coolers are often made portable so they can be used year around as production areas change.

Ice cooling is limited to a few commodities that have been traditionally cooled with this method. Broccoli and leafy greens are often ice cooled. Although the product is often wetted by the melting ice, decay spread is usually not a problem because water is not recirculated in the system. Ice cooling is expensive, and water from ice melt is a nuisance. Ice increases gross package weight and usually reduces the amount of product that can be shipped in a truck.

Room cooling is very slow and limited to situations where the product is individually exposed to cold air. It is well suited for to finish cooling a product that has been cooled within a few degrees of optimal temperature during packaging.

After perishables are cooled, they should be immediately placed in cold storage to prevent product reheating. In many of the other cooling operations, it is not feasible to leave product in long enough for each piece to reach desired temperature. Cold storage also allows some final cooling to be obtained.

Most perishable products should be cooled as quickly after harvest as possible. Field packed vegetables are cooled upon arrival at the cooling and storage facility. Products packed in a packing house can be cooled as soon as they arrive at the pack house or after they are packed. Cooling on arrival ensures minimum time at field temperature and allows short-term storage before packing to provide more even product flow to the packing operation. Product that will be sorted out in the packing operation is unnecessarily cooled and product usually rewarms a bit during packing and must be re-cooled.

Rewarming of cooled produce can be reduced by enclosing the packing facility to reduce air movement. As an alternative, dumping and palletizing operations can be done in refrigerated areas to shorten the time that produce is exposed to warm air. Compared with hand packing, mechanized packing equipment greatly speeds packing and reduces product heating.

Fresh Produce Retailers Demanding Certification

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and

William C. Hurst
Extension Food Scientist

Recent foodborne illness outbreaks, thought to have been caused by salmonella-contaminated cantaloupes from Michoacan, Mexico, reinforced the importance of effective on-farm food safety programs. Unfortunately, these contaminated cantaloupes resulted in one death and 30 illnesses in half a dozen states. It is thought that the contaminant - *Salmonella poona* - was on the outside of the rind and was transferred to the flesh by knives used to cut the melons. Reportedly, the "suspect" production region in southern coastal Mexico appears to be "beyond the reach of typical third-party safety certification". This particular food illness outbreak is viewed by many as further evidence supporting the notion that imported produce is more likely than domestic produce to be contaminated with human pathogens. In addition, this outbreak will undoubtedly provide even more ammunition for advocates of "country of origin" labeling.

Although domestic production was not implicated, U.S. growers and packers are being impacted by this incident. Grocers and other fresh produce retailers have intensified their demands for third party certification of food safety practices on farms and in packing/shipping facilities. U.S. growers and packers maintain that we already have one of the safest food supplies of any country in the world. Many, probably most, consumers wholeheartedly agree. Considering the quantity of fresh produce consumed in the U.S., the occurrences of foodborne illnesses caused by microbial contamination is relatively low. However, that is of little consolation to someone who has a family member die or suffer serious illness from eating contaminated produce. Nutritionists, other health professionals, the U.S.

Dietary Guidelines, the Food Guide Pyramid and the National Cancer Institute's Five a Day Program all recommend increased consumption of fruits and vegetables. This has helped foster acceptance of the notion that produce is inherently "good for you". That such a product could cause serious illness or death, is generally perceived as unacceptable. No one in the industry would knowingly grow/pack/ship produce that is not safe to eat. Furthermore, most of the growers and packers in the industry can not afford the almost limitless costs and vast economic losses incurred from providing an unsafe product to the consuming public. Implementation of effective on-farm food safety programs and other prudent practices that demonstrate "due diligence" is critical.

Progress is continuing with the On-farm Food Safety Program we initiated last year. All the planned Regional and District Agent Training programs have been completed. Development of the On-farm Food Safety Training CD is almost completed and should be available for distribution to agents by the end of July. This comprehensive CD and accompanying script incorporate all the aspects of food safety that were covered in the regional training sessions and should be an effective core resource for individual county food safety training targeting growers, packers and farm workers. In addition, we have collaboratively developed and submitted along with North Carolina State University faculty a grant proposal seeking funds to provide county agents conducting food safety programs with needed water testing equipment.

If you are aware of any Food Safety programming needs not currently being addressed, please let us know.

Organic Acres in Georgia

George Boyhan
Extension Horticulturist - UGA

The Farmgate survey for 2000 has been completed and sent out. It is also available on the web at: <http://www.agecon.uga.edu/~caed/pub-index.html>. Look under Annual Reports to find the 'Vegetable Acreage and Value Estimates 2000'.

I had requested some additional information that did not get into the report, but was collected in the survey. One of these was the number of organic acres currently in production in Georgia. The total number of acres was 314 acres in 22 counties. The lowest number of acres listed was 1 and the highest was 65. The average number of acres was 14.3. The counties with organic production by and large centered around large metropolitan areas such as Atlanta (See figure 1).

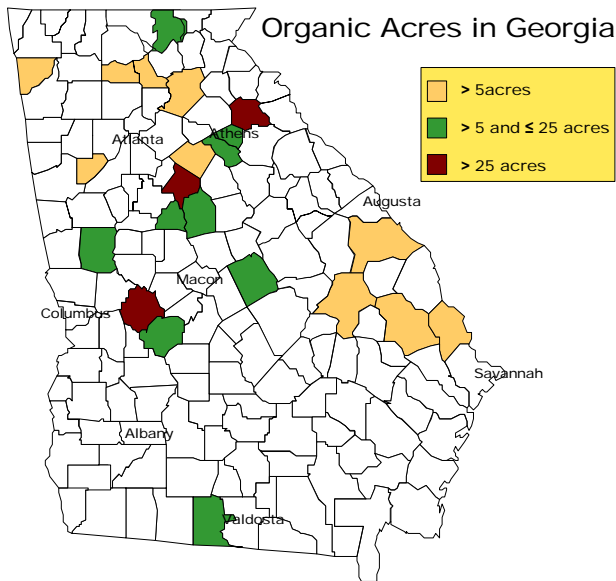


Figure 1. Organic production in Georgia by county.

Most of the organic farms I have visited had limited acreage in actual vegetable production, usually 1-5 acres. The farms themselves may have been larger, but most of the acreage was not devoted to vegetable production. Vegetable production by organic methods generally is accomplished with small-scale intensive production methods. Weed control in particular is difficult because organic production relies on mechanical methods only.

Since this is the first year surveying for this information its usefulness may be limited until we have several surveys to see how this industry is developing and maturing.

Texas Approves Sweet Corn and Green Bean Shipments Under New European Corn Borer Certification Program

David Adams
Extension Entomologist - UGA

For the remainder of 2001, Texas has agreed to allow Georgia sweet corn and green bean shipments into their state with certification that they have been processed and free of European corn borer. The processing part of this agreement is an exception to their existing rules. Processing by their definition is that sweet corn and snap beans have to have been hydrocooled, disinfected and shipped in chilled or refrigerated condition to Texas. A Phytosanitary certificate from the origin state department of agriculture must accompany each shipment. The contact person for the Georgia Department of Agriculture is Barry Smith in Tifton at (229) 386 - 3464.

In 2002, it is likely that an ECB trapping program will have to be implemented on both crops slated for Texas. This will be very similar to the California Program originally on beans and now on sweet corn.

Tifton Plant Disease Clinic

Jason Brock
Plant Disease Diagnostician -UGA

The welcomed rains across the state created situations conducive plant disease development, especially foliar disease. The number of gummy stem blight samples and the first confirmation of fruit blotch (cantaloupe) are of particular note. As growers approach harvest and plants are maturing, certain problems can be anticipated. With cucurbits, older crown leaves will decline with little to no damage observed on the newer growth. What might appear to be a disease could be attributed to "old age". To be sure of the nature of the problem, submit a sample to the plant disease clinic. Be sure to include as much information as possible.

The following is a summary of the commercial vegetable samples diagnosed since the May newsletter.

Cantaloupe:	Fruit Blotch Gummy Stem Blight Physiological disorder No disease (2)
Eggplant:	Unknown
Lima Bean:	Alternaria Leaf Spot
Okra:	Unknown
Onion:	Slippery Skin
Pepper:	Anthrachnose
Potato:	Rhizoctonia Canker
Snap Bean:	Fusarium Root Rot Pythium Pod Blight Insect Injury Unknown
Southern Pea:	Bacterial Leaf Spot
Squash:	Potyvirus Over-fertilization No disease Unknown (2)
Sweet Potato:	Chemical Phytotoxicity Rhizoctonia solani
Tomato:	TSWV (4) Chemical Phytotoxicity Unknown
Watermelon:	Alternaria Leaf Blight (2) Fusarium Wilt (2) Gummy Stem Blight (6) Potyvirus Pythium sp. Chemical Phytotoxicity (4) No disease (5)

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