This newsletter is intended for people interested in commercial fruit and vegetable production, business planning and North Carolina Cooperative Extension Service meetings throughout North Carolina. For back issues of this newsletter please go to the Jones County Extension website and click on the Commercial Horticulture, Nursery & Turf menu option on the left side of the website. The website address is: http://jones.ces.ncsu.edu

Upcoming Workshops, Tours & Meetings

December 5, 2006, Prawn Production Information Workshop. Lenoir County Extension Center. Contact Mike Frinsko or Mark Seitz at the Jones County Extension Center for more information at 252-448-9621.

December 5-7, 2006, Certified Crop Advisor Training. Onslow County Extension Center. 20 hours of Certified Crop Advisor Recertification Credits will be offered. Contact the Onslow County Extension office at (910) 455-5873 to register.


General Information

Alternative Crop Options: PRAWN

If you are interested in learning about the prawn industry, what is involved, and the resources required to get into this business, an informational meeting will be held Tuesday, December 5, 2006, at the Lenoir County Cooperative Extension Center in Kinston, NC. Additional meetings are expected to be held in January and February at locations yet to be determined.

Muscadine Grape Production Opportunity:

Reminder: Dole Foods in Kannapolis, NC is interested in speaking to growers who are considering producing fresh market muscadine grapes. Dole has specific fresh market varieties they are looking for. If you are interested in such a venture please contact Peter Gilmore at Dole Foods at (704) 273-1195 for more information.
Congratulations to the Onslow County Farmers Market Association Board of Directors and vendors for their first place display at the Onslow County Fair this year. You did a great job!

**Business Planning & Management**

**FACT in Jones County**

The FACT program (Farmers Adopting Computer Training) is a personal computer training program for small farmers. The program was developed by NC A & T State University and is being run in cooperation with NC State University, NC Cooperative Extension and Lenoir Community College, Jones County & Lenoir County Campuses.

FACT was developed by NC A & T State University to train limited resource farmers to use computer technology to improve their access to larger markets through the Internet and to improve their ability to communicate with the rest of the world. FACT students will receive basic computer skills starting with turning it on and include keyboard training, training in Microsoft Word, Microsoft Excel and Internet.

Classes are free of charge, and will begin as soon as a minimum of six people register. We currently have two people interested from Jones County and need four more. Classes will be held at the LCC Jones County campus. You can get more details about this program at the Jones County Extension office.

**Regional Farmers Market Association**

I have been doing a lot of writing about marketing, business planning and farmers markets. In conjunction with that, I have been working with prawn farmers this fall to assist them in learning new marketing methods and helping them expand their existing marketing channels. I also attended a three day conference in Burlington, Vermont, in September, where I heard many talks on agriculture tourism and how it is improving the economies of farms across the US.

The programs in Vermont highlighted a number of very successful regional agritourism marketing efforts being implemented throughout the US. In an attempt to bring a regional approach to agritourism to Jones County and eastern NC, Cooperative Extension hosted a regional meeting of farmers markets vendors and farmers market board members to meeting on October 17, 2006, to discuss the idea of how regional tourism with farmers markets might improve their visibility in the area.

Sixteen people representing the Onslow County, New Bern, Washington and Wilmington Riverside Farmers Markets attended a short meeting to discuss the idea of forming a regional farmers market association. The intent was to use this group to coordinate farmers market advertising on a regional basis, as well as share ideas and coordinate events about farmers market festivals and activities.

After two hours of training and discussion this group learned about the value of understanding:

- community demographics and how they can affect sales
- farmers market specialties: Asian vegetables, southern vegetables, traditional vegetables, homemade crafts...
- problems that are common to all markets: generating revenue, increasing and growing vendor numbers, how to utilize advertising channels, maintaining or increasing local government support
- who they are competing against: Food Lion, Whole Foods, Harris-Teeter, vendor on the other side of the market.

The hope is that this organization can go back to their local market, share ideas with vendors and board members and improve their visibility and economic (& social) standing in the community. It is also hoped that this group, using email and other means of communication, can pool their resources to write grant applications that might benefit all markets.

If you think this is something you are interested in being a part of please let me know. Projects such as this are never easy to start or maintain and
require a lot of volunteer effort to sustain. However, working on a regional basis in today’s high speed world is necessary for organizations with common interests and limited resources to use in order for them to expand and grow.

Business Management:

I have a mental block this month regarding any new and creative, academic business topics to regale you with. I started to write a very technical article about accounting and risk analysis, and then I came to my senses for two reasons. One, I’m not sure I understand the topics I started to write about well enough to be a credible author, and two, I’m not sure how much value either of those topics would offer you.

For those reasons, I will not write a business management article this month with the hopes that by December the business management “light bulb” will click back on in my brain and I’ll come up with something in December that will dazzle you enough to turn you all into millionaires.

If there are any burning issues or topics you would like me to cover, feel free to contact me and tell me what they are. If I don’t hear from anyone I’ll go back to finding topics that ‘might’ interest you, and hope you get something out of them.

Crop Production

Managing Post-Harvest Handling Damage in Sweet Potatoes and Other Vegetables

The 2006 fall Sweet Potato Field Day and Open House was held on October 4, 2006, at the Cunningham Research Farm in Kinston, NC. A number of research projects covering weed, insect and fertilizer management, as well as plant breeding and micropropagation were on display.

In addition to these projects, at team of researchers from Louisiana State University and NC State University: Dr. Chris Clark, LSU; Dr. Gerald Holmes, NCSU; Brooke Edmunds, NCSU Graduate Student; Erica Gray, LSU Research Associate; and Dr. Donald Ferrin, LSU; participated in an extensive survey of 466 sweet potato packing lines across LA and NC The goal of this survey was to "examine the effects of packingline design and practices on the susceptibility of sweetpotato roots to postharvest rots (i.e. Rhizopus soft rot).”

Poorly handled sweetpotatoes result in bruised and skinned roots. These open wounds increase the potential for infection by fungal organisms during storage. These infections can lead to a significant increase in storage loss and decreases the overall profitability of growing sweet potatoes or any other crop. Once you have produced the crop and spent the money to harvest it, losing it in storage as a result of poor post-harvest handling is THE most expensive kind of crop loss you can incur.

While the results of this study are preliminary and have not yet been equated to an actual amount of loss in storage as a result of poor handling, they do demonstrate a number of important factors that all growers should be aware of.

1) Harvest handling starts in the field. Workers should understand that all fruit and vegetables are living breathing organisms and that bruising and scaring of the sweetpotato skin results in cell tissue damage. Bruises or scrapes that come from careless handling are not completely unavoidable but can be minimized if proper handling practices are used.

Why are bruises and scrapes so critical? Cell tissue damage in any stored crop: sweet potato, Irish potato, cantaloupe, apples, bananas – does not matter what crop, increases the amount of cell respiration. During cell respiration some studies suggest there is an increase in the amount of sugar present in the area around the wound. Combined with the water that is present in the flesh of the product, this mixture creates an ideal environment for fungal organisms to grow.

In addition these exudates attract insects and trigger attacks by fungal organisms which lead to decay and ultimately a loss of quality. Train

your employees and family members to understand the affect of drop height on the not only the visual quality but also on the long term storage of the crop. Demonstrate to them with a handful of roots how throwing roots 1, 2 or 10 feet to a bin leads to damage and how severe that damage can be.

2) **Inspection padding.** Inspections must be done regularly, and not just once per year. If you handle hundreds of pounds of sweet potatoes a day over a six or eight month storage season, or if you are mechanically grading blueberries for six weeks, over time the padding on your line will be compressed and lose its ability to absorb the energy that occurs when a piece of fruit or vegetable is dropped, bounced, bumped or scraped on bare metal. The higher the fall or the faster the speed at which a piece of produce hits a grading bar or the wall of a storage hopper, the greater the amount of bruising. Inadequate padding cannot reduce the impact energy sufficiently to minimize the amount of damage that will occur to that piece of produce.

Because of this you should inspect your grading lines daily and watch for compressed or worn pads. Do not hesitate to replace or add a piece of foam padding. Remember foam padding is cheaper than losing a crop in storage because of fungal infections brought on by bruise damage and cheaper than losing a customer because you delivered bruised, low-quality produce.

Everyone in the fruit and vegetable industry must consider implementing measures to reduce handling damage. Remember quality starts at harvest and losing quality in storage is the most expensive loss you can incur.

**Insect Management in Collards**

September and October are prime times for collard production. Unfortunately it is also the prime time of year for diamondback moths and whitefly invasions to occur. These are two very resilient insect pests that can cause considerable damage in collards.

**Diamondback moth (DBM).**

This insect was introduced from Europe many years ago and is considered the most serious pest of crucifer crops around the world. Dr. Ken Sorensen at NCSU, retired, has an excellent publication on the biology and management of this insect pest. This publication is titled “Diamondback Moth: Vegetable Insect Note 11”. It can be found online at the following website: [http://www.ces.ncsu.edu/depts/ent/notes/Vegetables/veg011e/veg011e.htm](http://www.ces.ncsu.edu/depts/ent/notes/Vegetables/veg011e/veg011e.htm). If you wish to have a hard copy of this publication call me at the Jones County Extension office and I will be happy to get one to you.

Dr. Sorensen’s publication was originally written in 1993 and was last revised in 1996. While the biology of the DBM and the severity of the damage from it have not changed, the products available for control of this insect have.

The *1993 North Carolina Agriculture Chemicals Manual* [Note this reference is to the 1993 NC Ag. Chem. Manual not the 2006 NC Ag. Chem. Manual] indicated products such as Dipel, Javelin WG, Phoedrin 4 EC and Ambush were all registered for control of DBM. These and other products gave growers a wide range of products to use to control DBM. Because of the buildup of insecticide resistance, changes in company or government regulation or economics, some of these registrations and applications are no longer labeled or effective.
The 2006 NC Agriculture Chemical Manual (http://ipm.ncsu.edu/agchem/5-10.pdf) lists the following products for use in controlling DBM.

<table>
<thead>
<tr>
<th>Insect</th>
<th>Chemical and Formulation</th>
<th>Amount per Acre</th>
<th>Active Ingredient per Acre</th>
<th>PHI (Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBM</td>
<td>Bacillus thuringiensis (Crymax) WDG (Dipel) 2X (Dipel) (Xentari) WDG</td>
<td>0.5 to 1.5 lb. 8 oz. 1 pt. 0.5 to 1.0 lb</td>
<td>0.5 lb to 1.5 lb. 0.5 lb to 1.0 lb</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>emamectin benzoate (Proclaim)</td>
<td>2.4 to 4.8 oz. 12 oz. 0.20 gal water</td>
<td>0.0075 to 0.015 lb</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>pyrethrins &amp; PBO (Pyrenone)</td>
<td>3 to 6 oz</td>
<td>---</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Spinosad (Spintor)</td>
<td>0.47 to 0.94 lb.</td>
<td>0.0075 to 0.015 lb</td>
<td>1</td>
</tr>
</tbody>
</table>

In addition the 2006 Ag Chem Manual also indicates the following “Precautions & Remarks…”

Insecticide resistant populations, becoming widespread in North Carolina, may not be controlled with most registered insecticides. To manage resistance avoid transplants from GA & FL, and avoid repeated use of the same materials for extended periods of time. Do not allow populations to increase to large densities before treatment. Use a spreader/sticker.2

Whitefly

DBM, it too has shown signs if resistance to many of today’s insecticides. Whitefly is another insect whose management improves if treatment is started early, before insect populations are high and multiple generations are present.

Another excellent online information page on whitefly control is available from Dr. Bruce Barrett at the University of Missouri Cooperative Extension at: http://muextension.missouri.edu/explore/agguides/pests/g07275.htm

The 2006 NC Agriculture Chemicals Manual lists asetimiprid (Assail) at a rate of 2.5 to 4.0 oz per acre, or 0.047 to 0.075 lbs active ingredient per season. The preharvest interval on this product is seven (7) days. This product should be applied against adults before nymphs are present. As with the products registered for DBM control, a spreader/sticker is also recommended.3

If you have questions about any of the upcoming meetings, business strategies, or crop production management issues, please call me at the Jones County Extension Center at (252) 448-9621. I can also be reached by email at: Mark_Seitz@ncsu.edu.

Sincerely,

Mark Seitz
Extension Area Specialized Agent
Agriculture– Commercial Horticulture