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Special Reports:

Request for Proposals

The North American Bramble Growers Research Foundation Inc. (NABGRF) is seeking proposals for raspberry and blackberry research for the year 2011. All bramble/caneberry proposals will be considered, however preference will be given to proposals related to food safety, germplasm development, pest management strategies, marketing, and cultural management to improve yield and quality. Specific priorities for 2011 are in the process of being developed by the NABGRF Research Committee, and these (as well as the full list of suggestions below) will be posted on our website soon.

Since 1999, NABGRF has funded a total of 53 proposals totaling \$108,156. In 2010, we funded six proposals for a total of \$21,052, one of the largest amounts in our history. In general, funding for individual projects is expected to range of \$2000-\$5000. For the past three years the Foundation has been able to award higher level of total funding than in previous years due to contributions by nurseries to NABGRF's Nursery Contribution Program.

Proposals will be reviewed by the Research Committee of NABGRF at the North American Raspberry and Blackberry Conference, January 5-7, 2011 in Savannah, GA. The Research Committee will forward its recommendation to the NABGRF Board of Trustees. Final funding decisions are made by the Board of Trustees. Awards will be sent out in February 2011. *The deadline for proposals is December 10, 2010.* Submissions should be made by the electronic submission system in the "Research Foundation" section of the NARBA website (www.raspberryblackberry.com/local.cfm?doc=webdocs/NABGRF_ProposalGuidelines.htm).

Broad Mites Damaging Blackberries in Arkansas

By Donn Johnson
(Department of Entomology)
Chris Vincent and Elena Garcia
(Department of Horticulture)

Identification (Fig. 1): The broad mite is found world-wide, but is usually in greenhouses. *Adult*: length of 0.1 mm (male) to 0.2 mm (female), eight legs, and translucent to pale brown. *Nymph*: is smaller with six legs. *Egg*: 0.08 mm long, oval and covered by 29 or more whitish bumps.

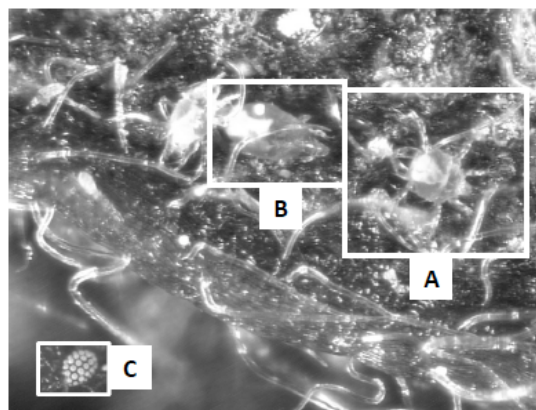


Figure 1. Broad mite, *Polyphagotarsonemus latus* (Banks) on leaves of 'Prime-Ark 45': A) adult males with characteristic long legs, B) more clear adult female and C) oval egg with characteristic raised spots (Photo: Chris Vincent, U of AR)

Biology: Female broad mites lay 30 to 76 eggs on the leaf surface over an 8- to 13-day oviposition period. Quiescent female larvae become attractive to the males which pick them up and carry them to the new foliage.

Hosts: Broad mites not only damage this new host, primocane blackberry, but were reported to damage many other fruit and vegetable crops (Gerson 1991): bittermelon, Chinese waxgourd, chiso, chrysanthemum, cucumber, edible gourds, eggplant, green beans, guava, hyotan, macadamia, mango, papaya, passion fruit,

pepper, pikake, plumeria, poha (ground cherry), pumpkin, tomato, watercress, winged bean, and yardlong beans.

Damage: Broad mites attack primocane-fruiting blackberries growing in the field or hoop houses causing terminal leaves to be stunted and curled, and floral buds to abort (Fig. 2). Do not confuse broad mite injury with herbicide injury, nutritional (boron) deficiencies or physiological disorders.



Figure 2. Distorted growth of blackberry terminal (Photo by M. E. Garcia)

Detection: Weekly in July and August, use a hand lens (10X magnification) to inspect for broad mites or eggs on the underside of smaller, curled terminal leaves (Peña and Campbell 2005).

Management: Minimize miticide usage by incorporating biological and cultural methods into your pest management program.

Cultural control: Broad mites are very sensitive to heat. Destroy broad mites in potted plants in greenhouse by lowering infested plants into water held at 109 to 120°F for 15 minutes.

Biological control: Release predatory mite (*Neoseiulus cucumeris*) for biological control of broad mites (Weintraub et al. 2003). A listing of commercial suppliers of biological mite control agents is available at the following Web site: <http://www.cdpr.ca.gov/docs/pestmgt/ipminov/bensuppl.htm>.

Chemical Control: At least four miticides are labeled against spider mites on blackberry but none mention this new pest, broad mites: bifenthrin (Bifenthrin 2 EC or Brigade 2 EC), hexythiazox (Savey 50 DF), or azadirachtin (Aza-Direct). Insecticidal oils or soaps may prove to be just as effective as miticides: JMS Stylet Oil, Ecotrol or M-pede (potassium salts of

fatty acids). Spraying oils should be limited to cooler nighttime or daytime periods to minimize phytotoxicity.

Literature Cited:

Broad mites. Online at:

<http://ipm.ncsu.edu/InteriorScapes/insect.html#L4P>

Gerson, U. 1992. Biology and control of the broad mite, *Polyphagotarsonemus latus* (Banks) (Acari: Tarsonemidae). Exp. Appl. Acarologia 13: 163-178.

Peña, J.E., and C.W. Campbell. 2005. Broad mite. EDIS Online at: <http://edis.ifas.ufl.edu/pdf/IN/IN34000.pdf>

Weintraub, P.G., S. Kleitman, R. Mori, N. Shapira, and E. Palevsky. 2003. Control of the broad mite (*Polyphagotarsonemus latus* (Banks)) on organic greenhouse sweet peppers (*Capsicum annuum* L.) with the predatory mite, *Neoseiulus cucumeris* (Oudemans). Biol. Control 27:300-309.

IR-4 Selects 2011 Small Fruit Projects

Roger, B. Batts
Field Researcher Director,
NC State IR-4 Field Research Center

The USDA IR-4 Project, a cooperative effort between USDA, land-grant universities and the crop protection industry, held its annual Food Use Workshop on September 14-16 2010 in Summerlin, NV. The mission of the IR-4 Project is to develop data to support registration of pest control products for growers of specialty crops. At this meeting, IR-4 and EPA personnel, university researchers and extension specialists, and other stakeholders gather to discuss and select the most pressing pest control needs for these growers, based upon product/crop combination requests that are submitted to IR-4. In order for a product to be eligible for registration, several testing criteria are required by EPA so that a proper risk evaluation can be conducted. One of these requirements is to determine the amount of product, when applied at timings and rates that will be labeled, that will be in/on the commodity at the time of harvest. This residue testing is where a majority of IR-4 efforts are dedicated. The following projects involving small fruits were selected for residue trials in 2011.

Crop	Product	Trade Name/Type	Comments
Caneberry	Pendimethalin	Prowl H ₂ O/ Herbicide	Broadleaf and grass weeds
Blueberry (High bush)	Pendimethalin	Prowl H ₂ O/ Herbicide	Annual weeds
Blueberry	BYI 02960	Experimental/ Insecticide	Blueberry maggot, aphids
Grape	Mesotrione	Callisto/ Herbicide	Annual broadleaf weeds, yellow nutsedge

Once a protocol is developed and initiated for a project, IR-4 attempts to have all field and lab data summarized and submitted to EPA within 30 months. After the data are reviewed, EPA will establish a maximum residue level (MRL), often referred to as a 'tolerance', for this product/crop combination and the manufacturer may add the use to the product label.

To track these, or any other IR-4 food crop studies, click on the link below to access the IR-4 food crop database:

http://ir4.rutgers.edu/FoodUse/Food_Use.cfm

Grape Community of Practice

Sara E. Spayd
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Department of Horticultural Science
NC State University, Raleigh

Two years ago, USDA funded, through the Specialty Crops Research Initiative, development of a Grape Community of Practice (GCoP). The GCoP is Directed by Dr. Eric Stafne at Oklahoma State University (for a more detailed overview of the project see:

<http://www.reeis.usda.gov/web/crisprojectpages/220176.html>). The GCoP will provide a national science based repository for information on table, juice and wine grape production for the eXtension program. The site will be accessible to members of the eXtension community as a resource for answering viticultural questions. It will not be accessible to the general public.

Ed Hellman (Texas A& M University), Keith Striegler (University of Missouri), and Kathleen

Kelsey (OK State) are Co-Directors and Lane Greer (OK State) is the Extension Associate serving as Project Coordinator. Original collaborators represent a breadth and depth of the US Viticulture Extension Specialists: Andy Allen (U. Missouri); Lorraine Berkett (U. Vermont); Bruce Bordelon (Perdue U.); Rhoda Burrows (South Dakota State U.); Jodi Gee and Tim Weigle (Cornell U.); William McGlynn and Damon Smith (OK State U.); Paul Read (U. Nebraska); Bill Shoemaker (U. Illinois); Patty Skinkis (Oregon State U.); Fritz Westover (Texas AgriLife Ext. Ser.); Jim Wolpert (U. California, Davis); and Sara Spayd (NC State U.). Additional Extension Specialists have joined the GCoP since its inception.

When released, the GCoP website will provide a knowledge base for the eXtension community on all aspects of grape production. The site will contain a collection of frequently asked questions with answers (FAQ), ask an expert, and short articles to add content. Information will be subject to two peer reviews before posting. Our goal is to launch the website by December 31, 2010. Site development will continue well beyond the initial launch.

Louisiana Passes Strawberry Label Law

From The Packer, in an online article
by Doug Ohlemeier on June 18, 2010

A new Louisiana law requires that all strawberries sold in the state — including those grown in Florida and California — have a "farm of origin" label on consumer packages. House Bill 430, signed by Gov. Bobby Jindal on May 26, applies only to strawberries but could be applied to other commodities such as citrus, tomatoes and seafood, said Louisiana Agriculture Commissioner Mike Strain.

While technically a law, the specific wording and scope of what's covered hasn't been finalized. A commission within the Louisiana Department of Agriculture & Forestry and the Louisiana Strawberry Marketing Board would develop the rules with legislative oversight, possibly by September.

"This came from the strawberry farmers," said Strain. "With this buy fresh, buy local push, when our consumers buy berries, we want them to have the option of buying fresh and local

Louisiana berries. You will see this in the future on all produce and will see this moving into national policy.”

Strain said labels listing the name and address of the farms producing the berries could be incorporated into shippers’ labels. He said he didn’t think the labeling change would be difficult for out-of-state shippers and said the state would provide a mechanism or template for such labeling.

Potential headaches

Ted Campbell, executive director of the Florida Strawberry Growers Association, Dover, said state-specific labeling requirements would cause packinghouse headaches. “Any differentiation by state in labeling requirements is very challenging at the packer level for any commodity,” said Campbell, who reserved further comment until reading more about the law.

Carolyn O’Donnell, communications director with the California Strawberry Commission, Watsonville, said shippers there also want to know more about the law. “We are waiting to find out what they’re expecting to do in terms of labeling and how that may be different from the way California labels its berries now,” she said. “We do support traceback to the container.”

While many states promote agricultural products, Robert Guenther, senior vice president of public policy for the United Fresh Produce Association, Washington, D.C., said he hasn’t seen other states institute laws similar to Louisiana’s.

“Our goal is to move consumption of all fresh produce,” Guenther said. “We want to make sure we are not trying to divide the industry by commodity, state or region. While we think it’s important for states to promote and be proud of their products, to start mandating regulations on commodities entering their states in terms of commerce, I’m not sure if that would move the ball forward on increasing overall consumption of fresh fruits and vegetables.”

The U.S. Department of Agriculture doesn’t report Louisiana’s strawberry acreage, but the state’s agriculture department said 89 growers in 2009 produced 870,475 flats from 397 acres with a \$17.4 million value. According to the USDA’s National Agricultural Statistics Service, a preliminary value of California’s 2009 fresh strawberry crop is \$1.58 billion; Florida’s is \$313.6 million.

Production, centered in the eastern area of the state north of New Orleans near Ponchatoula, La., generally begins in December and peaks in March with smaller volumes running through May.

Louisiana shoppers consume a majority of production, Strain said.

Marketing board member Kevin Liuzza, owner of Kevin Liuzza Farms LLC, Independence, LA, said such labels should be on all foods.

“Our main concern here is for the consumers,” he said. “Consumers should want to know what farm their berries came from. Something sounds fishy if your farmers don’t want to have their names on their strawberry boxes.”

Mark Murai, president of the California Strawberry Commission, said the commission supports traceback to the farm level.

“The commission expects that the Louisiana regulations will be in harmony with ongoing national labeling and traceability efforts,” Murai said. “The commission continues to work with national and regional trade and produce associations to harmonize labeling requirements for all fresh produce.”

An Invasive Stink Bug

Part of this report is drawn from a web article by Jerry Brust, University of Maryland Extension, at www.hgic.umd.edu/content/timelytips.cfm Reprinted from The Bramble, Autumn 2010 issue. NARBA web site (<http://www.raspberrylblackberry.com/>)

The brown marmorated stink bug (BMSB) *Halyomorpha halys* was accidentally introduced into the United States in shipping containers arriving from Asia. The first confirmed specimen was collected in Allentown, PA in October 2001. Since becoming established in Pennsylvania, the BMSB has spread throughout the mid-Atlantic as far south as Virginia. It also has been found in several southern and Midwestern states. It had mostly been considered a homeowner nuisance pest, but, reports University of Maryland Extension agent Jerry Brust, “That has all changed this year. Fruits such as apple, peach, and raspberries have been attacked in western

and to a lesser degree in north central Maryland.”



Stink Bug Damage

Comments NARBA Vice President Nathan Milburn, who farms in Elkton, Maryland, “I saw some damage last year, I’m guessing maybe 10%, but this year, I’d say 80% damage in all my fruit. They can very easily shut your operation down. The berries in peak season look like they do at the end of the season. We had a good early harvest, but are having to shut down early. The only controls are contact sprays and there is no residual chemical to treat them. They are incredible flyers and they fly in from outside even if you do treat. You can control them with pyrethroids, but we try to do a strict IPM operation and I really don’t want to have to spray weekly with something that will kill everything.”



Brown Marmorated Stink bug eggs

Says Brian Butler, Extension Agent in Carroll County, Maryland, “I am working Josephine raspberries in tunnels and outside at the Western Maryland Research and Education Center in Keedysville, MD. We are experiencing over 90% loss in the outdoor planting. The numbers of BMSB are so high here that picking has become a very uncomfortable endeavor.



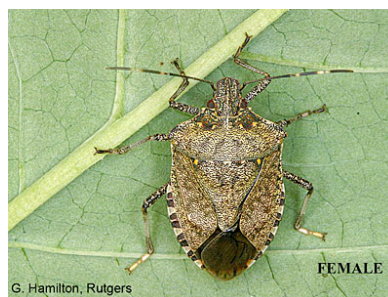
Brown Marmorated Stink bug

“They are feeding on the fruit as nymphs and adults which causes the fruit to completely shrivel but not come free from the receptacle. This makes a real mess as they begin to mold. Less severe damage to the drupelets is also bad enough to render the fruit totally unmarketable.



Female Brown Marmorated Stink Bug

“Another interesting problem is that the nymphs can fall into the containers while picking and will crawl into the fruit so when one eats the fruit they are also getting a stinkbug nymph.” The BMSB also feeds on vegetables, notes Jerry Brust. “The damage from BMSB feeding is especially bad on some vegetables where it can deform the fruit more severely than other stink bug species. Whether this is due to greater amounts or different types of enzymes in its saliva is not known. The BMSB also seems to more readily introduce yeast contaminants into its feeding sites that further degrade the fruit.” The worst vegetables for damage appear to be tomato and pepper.



Female Brown Marmorated Stink bug

The BMSB adults emerge from overwintering sites during late May through the beginning of June. They mate and lay eggs June through August and probably into September. The eggs hatch into small black and red nymphs that go through five molts throughout July and August. Adults begin to show in mid-August. Their flights for overwintering sites (often in homes, in large numbers) start in mid-September and continue through October.

Writes Jerry Brust, “ I do not know if BMSB populations will continue at these extraordinarily high levels in the next couple of years. We had a perfect storm develop this summer for the BMSB population to explode: a severe drought early in the summer and extreme heat. These two factors literally dried up the usual wild plant hosts not only of BMSB but also other pests as well and drove them into our fruit and vegetable fields. The dry weather appeared to be conducive to BMSB survival as their population exploded in August. We probably will not have these same conditions next year and will hopefully not see these high populations again. However, we just don't know enough to predict accurately what the situation will be in the coming years.”

Their range is expected to spread.

*For more information, visit
www.hgic.umd.edu/content/brownstinkbug.cfm,
which also has links to several related sites.*

Herbicide Options for Small Fruit Growers Will Expand in 2011!

W. E. Mitchem
Extension Associate
NC State Univ., Clemson Univ., and
Univ. of Georgia, Cooperatively

As we head into fall my self and Dr. Katie Jennings are working on the 2011 herbicide recommendations and there will be several things in next years recommendations that will affect small fruit producers and thus far it is all GOOD news!

This past spring a new Rely formulation (Rely 280) was introduced into the market place by Bayer CropScience. Rely 280 is a more concentrate formulation of glufosinate than Rely 200 and as a result Rely 280 has a lower use rate. The use rate for Rely 280 ranges from 48 to 82 fl. oz./acre limiting total use for the season to no more than 164 fl. oz./acre for blueberry plantings and 246 fl.

oz./acre for grape vineyards. I occasionally get questions pertaining to the use of Rely as a spot spray. The recommended concentration of Rely 280 for spot spray applications is 1.7 fl. oz. per gallon of water. If you use Rely on your farm make sure you adjust the use rate for the formulation you are using. I have seen incidence of crop injury as a result of growers failing to adjust the rate when using more concentrate formulations of Rely.

Matrix FNV (rimsulfuron) was registered for use in grape vineyards a few years ago by DuPont Ag Products. When tank mixed with oryzalin (Surflan) or diuron (Karmex), Matrix FNV is an effective option for preemergence weed control in vineyards. Cost has limited Matrix FNV's utilization in the Southeast but with MANA and Cheminova marketing rimsulfuron as well growers may see cost being less of an issue. Pruvion (manufactured by MANA) and Solida (manufactured by Cheminova) are registered for use in vineyards offering two additional rimsulfuron options for growers to consider.

SelectMax (clethodim) has been registered for use in non-bearing blueberry and caneberry plantings for several years. Thanks to support from the IR-4 program a tolerance for clethodim on blueberry and caneberry was established this past spring. According to Valent, manufacturer of SelectMax, a label containing these new uses along with a use for bearing peach orchards will be issued this fall.

International Issues and Growing Concerns for New Nematode Problems

By J.W. Noling,
University of Florida CREC, and
Alicia Whidden,
Hillsborough County Cooperative Extension,
Edited from an article in the
Florida Berry/Vegetable Times,
June 2010

In addition to production levels near half of what is typically observed, the death and destruction caused by sting nematodes was obvious in many [Florida] fields. The damage observed would likely have been higher if a warmer season had prevailed. In addition to sting nematodes, we also observed a number of fields in which late season problems appeared to be caused by or at

least associated with root-knot nematodes, presumably the northern root-knot nematode, *Meloidogyne hapla*.

Meloidogyne hapla is referred to as the northern root-knot nematode because it commonly occurs in cooler environments. It is however also found in the tropics and subtropics, usually at cool and high elevations. In addition to galling, typical symptoms on strawberry parasitized by *M. hapla* include plant stunting, reduced runner production, depressed yields, shortened life of the plantings. Previous research has also demonstrated the importance of secondary infection caused by other disease pathogens penetrating the root system via wounds, and that these secondary invaders are often more important than direct damage caused by root-knot nematodes.

Meloidogyne hapla is a common nematode pest of strawberries in the northeastern U.S. where the nematode reduces crown vigor and fruit yield, often without producing diagnostic above-ground symptoms. During this past season we recovered root-knot nematode from soil and root tissue from a number of different fields. Dramatic levels of decline were not always evident. In one field, at season's end, however, we observed the collapse of strawberry plants under droughty conditions, which was associated with high soil densities of a *Meloidogyne* species (we did not confirm species as *M. hapla*). *M. hapla* is, however, thought to be the only root species hosted by strawberry.

In general, root-knot nematodes can only move relatively short distances in soil. In most instances, they are spread into new areas as hitchhikers in soil or on equipment between fields or within infected plant materials which are then transported great distances and then planted to soil. The presence of *M. hapla* should be of concern to us here in Florida since it is known to reside within imported bare-root transplants and because it has been demonstrated to over-summer readily and increase in number over time on strawberries and other plant hosts. Sanitation, accomplished by identifying and eliminating *M. hapla* from planting stock is probably the single most important nematode management tactic. Rotation with non-host species has been reported to be effective, although successful use of rotation requires knowledge of the host status of a large number of plant species, including a wide variety of weeds. Previous research has also identified a number of highly resistant strawberry genotypes, which if needed, can provide a readily exploitable source of resistance to *M. hapla*.

Most plant-parasitic nematodes are controlled by preplant fumigation. We are fortunate that due to routine soil fumigation, nematodes (sting or root-knot) are typically not observed to be a significant problem in Florida strawberry except where problems of fumigant misapplication occur. Other problems (about which we can only speculate at this moment) have also occurred when infected transplants from Canadian nurseries were set into fumigant-treated soils, which offer a very favorable environment for the population increase of the introduced root-knot nematodes. Greater problems obviously can occur when soil densities of endemic (resident) populations are augmented by the addition of those nematodes within infected root tissues on incoming bare-rooted transplants from Canada.

We don't know if most Florida growers are aware that the Telone® products (Telone II, Telone C-17, Telone C35, Inline, Telone EC) will only be available for the next two growing seasons in Canada. After November 2011, these Telone products will no longer be registered and will not be available for sale or use in Canada. The loss of Telone in Canada was ultimately decided by the manufacturer, Dow AgroSciences, who simply decided the Telone business in Canada was not big enough to support product re-registrations costs demanded by the Canadian government. The question now becomes, What will Canadian strawberry nurseryman do to manage nematodes? The most immediate concern is relying upon other less nematode-effective fumigants, which would then promote a potential increase in numbers of nursery fields and overall numbers of incoming nematode infected transplants.

The use of certified planting stock (bare-root transplants produced in fumigated fields) combined with soil fumigation of fruiting fields has been the primary management technique for plant diseases, weeds, and nematodes on strawberries. During the past 40 years, the use of soil fumigation had become an accepted practice for many commercial strawberry transplant producers in Canada. The practice, particularly when methyl bromide was used, greatly improved plant growth and runner production. It also served to minimize international transport of nematode pests to various U.S. locations. Currently, *M. hapla* is not considered a "quarantine pest" though Canada must meet USDA APHIS nematode

requirements for potato cyst nematodes. We believe it is possible that the soil sampling report that each Canadian nurseryman must acquire for phytosanitary certification for potato cyst nematodes could be expanded voluntarily to include counts of *Meloidogyne hapla* and other species if present. A voluntary expansion of the USDA APHIS phytosanitary certification program in Canada to insure that fields are also *M. hapla* free would offer some assurance to Florida growers that the plants purchased from certified growers are not only true to variety, but apparently free from significant nematode pests besides the potato cyst nematode.

It is not clear to us how widely distributed *M. hapla* is in the Canadian strawberry nursery industry or how widely distributed *M. hapla* currently is in Florida strawberry acreage. Particularly with the loss of Telone next year in Canada, further research and surveys may be needed to determine the significance of the problem, document possible interaction with other soil pathogens and the environment, and to determine the role played by unsanitary imported transplants in compounding nematode problems for Florida growers. It is possible that in years to come, strawberry growers who travel to Canadian nurseries to inspect purchased plants may want to demand phytosanitary inspection to include testing for nematodes within nursery fields from which runners have been grown prior to digging and shipment to Florida. Without post-plant chemical measures, there remains no effective means of managing nematode populations and their damage once introduced.

Bramble (Caneberry) Seasonal Checklist

Gina Fernandez, Small Fruit Specialist
North Carolina State University

This checklist was originally developed for blackberry growers in North Carolina. Many of the items apply to raspberry production as well. You may have to adjust your work activities either earlier or later depending on your location. For more detailed information, check the Southern Region Integrated Bramble Management Guide and the Southeast Regional Bramble Production Guide at: <http://www.smallfruits.org/SmallFruitsRegGuide/index.htm>

FALL

Plant growth and development

- ✓ Primocanes continue to growth but slow down
- ✓ Flower buds start to form
- ✓ Primocane leaves senesce late fall

Pruning and trellising

- ✓ Spent floricanes should be removed asap
- ✓ Optimal time to prune is after the coldest part of the season is over. However pruning can start in late fall if plantings are large (late winter for smaller plantings).
- ✓ Start trellis repairs after plants have defoliated

Weed management

- ✓ Many summer weed problems can be best managed in the fall and winter using preemergent herbicides. Determine what weeds have been or could be a problem in your area. Check with your states agricultural chemical manual and local extension agent for the best labeled chemicals to control these weeds.

Insect and disease scouting

Continue scouting for insects and diseases.

Remove damaged canes as soon as possible.

- ✓ Check the Southern Regional Bramble integrated Management Guide for recommendations.
<http://www.smallfruits.org>
- ✓ Also check out Hannah Burracks blog. She posts timely information on insects of interest.
<http://ncsmallfruitsipm.blogspot.com/>

Planting

- ✓ Growers in warmer areas (e.g. extreme southeastern NC) can plant in December. Preparations for winter planting should have already been made. If you have questions about winter planting please contact me at the above email address.
- ✓ Prepare list of cultivars for next years new plantings.

Fertilizer

- ✓ Take soil tests to determine fertility needs for spring plantings.

Marketing and miscellaneous

- ✓ Order containers for next season
- ✓ Make contacts for selling fruit next season

Make plans to attend Grower meetings in Savannah and Myrtle Beach! Blackberries and raspberries are part or all of these programs.

- ✓ The 2011 North American Blackberry Conference will be held in Savannah, Georgia, on January 5-7, 2011, in association with the Southeast Regional Fruit and Vegetable Conference.
<http://www.raspberryblackberry.com/local.cfm?doc=webdocs/ConferencePreview.htm>
- ✓ 25th Annual Southeast Vegetable & Fruit Expo in cooperation with South Carolina Fruit, Vegetable and Specialty Crop Association. Myrtle Beach, South Carolina. Tuesday, November 29 thru Wednesday, December 1, 2010 <http://www.ncvga.com/>

Quarterly Strawberry Plasticulture Checklist

Gina Fernandez, Small Fruit Specialist
North Carolina State University

This checklist was originally developed for growers in North Carolina. You will have to adjust your work activities either earlier or later depending on your location. For more detailed information, check the Southern Region Integrated Strawberry Management Guide and the Southeast Regional Strawberry Plasticulture Production Guide at:

<http://www.smallfruits.org/SmallFruitsRegGuide/index.htm>

Fall (Sept-Nov)

- ✓ Fumigate (or apply compost) early Sept in NC, and put down plastic
- ✓ Plant ryegrass in aisles (1 bu/acre) before you punch holes in plastic
- ✓ Plant in October (most of NC), use overhead irrigation as needed for plugs or fresh dug plants
- ✓ Check for dead plants and reset asap
- ✓ Watch for pest injury, including deer
- ✓ Fall irrigate only if soil is dry
- ✓ Hand weed emerging winter weeds
- ✓ Watch for pest injury, including deer
- ✓ Fall irrigate only if soil is dry
- ✓ Consider placing row covers on plants first 10 days of Nov. for additional flower development this fall and higher yields next spring (optional) apply beneficial mites shortly after planting
- ✓ Inspect plants late fall and winter for crown development, you should see 2-3 crowns

- by December in a normal year
- ✓ Protect plants and plastic from deer

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Editor and Contributor..... Tom Monaco

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