Hurricane Irene battered vegetable crops in SW Florida. The storm hit Florida on the afternoon of October 15 striking land at Cape Sable and moving north east ward across the Everglades and then out into the Atlantic the following day. Growers are reporting widespread crop damage across SW Florida. Although crop damage has been reported across the region, wind and storm related damage was highest in the Devils garden area in the eastern part of Hendry County and was lighter as one moved westward across the area.

The FAWN weather station in Immokalee recorded only 1.48 inches of rain from Irene with highest sustained wind speeds of 27 mph. Reports from growers have indicated much higher winds than this with gusts of 85 MPH or more being reported from the Devils Garden area and gusts of 45 – 50 mph around Immokalee. Rain totals also vary widely with 3 – 4 inches being reported from some sites.

Significant wind burning and tearing of foliage has been reported widely. Margins and edges of fields were the worst affected as were large open fields where wind run was great. In some locations on the eastern side of our area, an average of 20% of plastic mulch was blown off beds. In a few places, worse case scenarios saw up to 50% of plastic mulch blown away by the storm. The most affected fields were those that had been planted but not yet staked. Where stakes were in place, they seemed to help hold down the plastic on beds.

Early pepper plantings nearing harvest where laid over in some places and lost significant leaf area resulting in substantial sun burning. Fruit scarring on eggplant, melons, pepper, and tomato is being observed widely where fruit was present. Tearing and wind burn resulted in severe damage of bean foliage in most places. Stem breakage on young peppers nearing bloom and young tomato nearing first tie as high as 10% has been noted in some fields. On some sites, blowing sand was reported to have buried young plantings on open beds. Roofs on several plant houses were lost as the result of the storm but overall no major structural damage was noted. In at least two locations, narrow swaths of complete destruction across planted fields due to probable tornadoes was observed.

Over-all vegetables in southwest Florida took a “lickin” but will go on “tickin.” The long-term affect of Hurricane Irene on crops will be determined greatly by the weather conditions over the next couple of weeks as well as growers ability to implement and an aggressive and effective disease control program. Sunny days and dry conditions will be most welcome.
**Wet field** conditions continue to plague growers although there has been much less rainfall over the past two weeks as compared to the previous reporting period. Daytime temperatures remain in the high 80’s to low 90’s, while nighttime lows have been mainly in the low 70’s with a few readings in the high 60’s.

**A few observations** resulting from Hurricane Irene may be of benefit to growers for protecting future plantings. Overall fields protected by **windbreaks** appear to have suffered **substantially less damage** than those plantings where there were no windbreaks. While no windbreak will save crops from the devastation of a full blown hurricane with sustained winds of 75 mph or more, the presence of windbreaks can make a big difference in the level of over-all crop damage at lower wind speeds. It is well known that strong winds of even 15 – 20 mph blowing for even a few hours duration can cause injury to vegetable crops by twisting and whipping plants around, sand blasting, plant desiccation and cold damage. In a presentation at the 1998 Florida Agricultural Conference and Trade Show, Bob Hochmuth with the UF/IFAS Suwannee Valley Research and Education Center, reported that according to USDA statistics, wind damage was the leading category of crop damage caused by natural phenomena across the United States. Properly designed and located **windbreaks** are an **important component** of a **crop management** strategy for high value vegetable crops. Where possible growers can benefit by incorporating windbreaks into their vegetable cropping system.

Attention to **plastic laying technique** should also be considered. Well-anchored plastic with nice J-shaped curl at the edges placed deeply enough to form a substantial cup filled with well packed soil will help hold mulch in place under high winds.

**Worms** are **still widespread** across the area although all respondents have noted a definite decline in numbers from the high populations being reported a few weeks ago. Despite the decrease in worm pressure, several respondents have noted an increase in egg masses in some fields, which may signal a rebound in worm pressure. By all reports, **beet armyworms** continue to be **most numerous** but a variety of other worm species are being seen sporadically.

Gregg Nuessly and Matthew Hentz have operated a series of pheromone traps for five economically important moth pests at the Everglades Research and Education Center in Belle Glade for many years. Archived and current data from this operation is available at the [EREC Moth Pheromone Trap Data](http://www.ifas.ufl.edu/~erecweb/ephtrda.htm) web site at http://www.ifas.ufl.edu/~erecweb/ephtrda.htm. This information may be of interest to growers, scouts and consultants for use in forecasting pest populations.

**Broad mites** are still widely present on pepper in a number of locations across the area. Infestations are sporadic but seem to be gradually increasing by most reports. Pepper and eggplant producers are advised to be on the lookout for this pest. As with most pests, scouting to detect early infestation is important. Kelthane or dicofol, micronized sulfur (i.e. Thiolux) and AgriMek have all given good results locally. It should be noted that none of these materials kills eggs or seems to have enough residual to kill all hatching larvae. Therefore, to achieve control it is necessary to make two applications about 5 days apart to allow time for eggs to hatch and target emerging larvae.

Low **whitefly** numbers continue to be reported across the area at this time. There have been several disturbing rumors of growers considering second applications of Admire or it’s analog Provado for extended whitefly control. Despite the efficacy of Admire in controlling whitefly, growers are strongly advised to follow up with alternative chemistries later in the season. The manufacturer, as well as leading entomologists and IPM specialists, recommends **rotation of control methods**. IGRs are good choices for controlling whiteflies later in the season. Non-chemical IPM strategies such as quick destruction of crop residues and crop free periods are also important tools in battling whiteflies.

**A slight increase** in **leaf miner** activity has been noted in tomato but threshold levels have not been reached at any location. A **few aphids** are starting to show up here and there on pepper but no problems are being reported
to date. A few thrips have also been seen in pepper and tomato flowers but again at very low levels and do not pose a problem at this time.

There have been some isolated reports of mole crickets and fire ants causing problems in wetter fields where they apparently have moved into raised beds as they seek drier ground.

As expected, given the favorable weather conditions, bacterial leaf spot has exploded in many areas. A number of respondents are reporting moderate to high incidence of bacterial leaf spot in pepper and tomato. In the worse cases, significant leaf drop in pepper has been observed, while in tomato bacteria has moved rapidly and aggressively high into the canopy. In such cases with some older plantings, it is feared that bacteria may begin to affect fruits.

Despite these worse case scenarios, many other growers are reporting low to moderate bacterial leaf spot, and others are reporting no bacteria present in their fields. The next few days should indicate the extent of the bacteria problem. Cooler drier weather that is anticipated behind the cool front moving south today should provide growers some relief. While copper/manzate sprays remain the main weapons against bacteria, some growers have reported very good control with phage. This has generally been on smaller plantings where it is possible to apply the product across the acreage very early in the morning to avoid deactivation of the bacteriophage, which is a living organism and subject to dehydration and attack by UV radiation in sunlight. Some reports indicate that use of Keyplex DP has assisted in control.

A few more reports of tomato yellow leaf curl virus have come in. In all cases, these have been isolated plants across widely scattered locations. Whitefly suppression and roguing infected plants upon identification are the main tools in fighting this disease during the growing season. Growers are also advised to make sure that transplants are obtained from areas away from sources of TYLCV infection.

Gummy stem blight is widely present in fall watermelon and squash. Incidence is low to medium at most locations. In one location where the field was quite advanced, incidence has been rated at medium to high and has caused significant crop damage.

There have been a quite a few reports of pythium causing problems with damping-off on young pepper and tomato on wetter sites.

Reports of phytophthora continue to be received from a number of widely scattered sites. Affected crops include pepper, squash, watermelon and variety of minor crops. For the most part, incidence is low and occurrence sporadic. There has been one report of serious crop damage has been reported on watermelon nearing maturity, where phytophthora fruit rot has caused significant losses.

Potato planting has started up in southwest Florida; excessive soil moisture has resulted in seed pieces rotting in the field on some sites.

“Tomato little leaf” has been observed in at least two fields in the area. Tomato little leaf is a non-parasitic disease of tomatoes that causes virus-like symptoms in tomato. It occurs on wet soils and is apparently caused by the release of amino acid analogs by soil microorganisms under wet conditions. These compounds are taken up by plant causing the expression of virus-like symptoms. Control consists largely of managing soil moisture to avoid water logging. Maintaining soil pH below 6.3 or less can also reduce development of the problem. Affected plants generally resume normal growth once soil moisture levels become more favorable.

Scattered reports of fusarium crown rot on tomato have been received.

News you can use – Burt McKee of UAP speaking at a recent growers meeting advised growers that the use of soil or similar absorbent material one of the best and most economical methods of cleaning up pesticide spills
on the farm. This simple technique involves the use of soil to absorb the spilled material followed by the application of the contaminated soil to a labeled crop at the labeled rate. Be sure to use the personal protective equipment specified on the label before attempting the cleanup. The beauty of this method is its ease, low cost, and availability. Note: while this method is legally approved in Florida, it may not be legal in other states. McKee advised against the use of absorbent pads and other such means of cleaning up chemical spills as this will result in the creation of hazardous waste which will require disposal in an approved haz-mat site by an approved operator at exorbitant cost to the grower.

Up-Coming Meetings

Nov 3, 1999 Q and A for Agricultural Employers and Contractors – 7 PM
US Dept of Labor and Florida Department of Labor
SW Florida Research and Education Center
Hwy 29 N, Immokalee, Florida
For more information contact: Dianne Milford @ 954-356-6929 ext. 14

Nov 20, 1999 Complying with the Worker Protection Standard - 10 AM - Noon
Dale Dubberly: Bureau of Compliance
SW Florida Research and Education Center
Hwy 29 N, Immokalee, Florida
Contact: Sheila Griffith @ 941-674-4092

Web sites Pest Management/IPM Newsletters in the United States and Territories
http://ipmwww.ncsu.edu/opmppiap/ipmnews.htm
Links to dozens of Pest Management/IPM Newsletter web sites in the United States and US Territories – including the SW Florida Pest and Disease Hotline.

UF Department of Entomology and Nematology Buggy Software web site
http://www.ifas.ufl.edu/~ent1/software/fasulo.htm. In addition to other things, this site has links to a number of free tutorials that you can use to earn CEUs. Most tutorials will allow you to earn one CEU in the CORE category.

Contributors include: Tom Barfield/Clifkeen Ag, Skeeter Bethea/Joiner and Sons Farms, Earl Bone/Pero Family Farms, Frydy Cole/Thomas Produce, David Harloff/Pacific Tomato Growers, Fred Heald/Farmers Supply, Sarah Hornsby/AgCropCon, Leon Lucas/Glades Crop Care, Gene McAvoy/Hendry County Extension, Alice McGhee/Thomas Produce, Chuck 0bern/C+B Farrn, Dr. Pam Roberts/SWFREC, Wes Roan/6 L's, Kevin Seitzinger/Gargiulo, Jay Shivler/ F& F Farm, John Stanford/LNA Farms, Dr. Phil Stansly/SWFREC, Tim Nychk/Nychk Brothers Farm, and Dr. Charlie Vavrina/SWFREC.

The SW Florida Pest and Disease Hotline is compiled by Gene McAvoy and is issued on a biweekly basis by the Hendry County Cooperative Extension Office as a service to the vegetable industry.

Gene McAvoy
Extension Agent II
Vegetable/Ornamental Horticulture 941-674-4092 phone
Hendry County Extension Office 941-860-8811 mobile
PO Box 68 941-674-4097 fax
LaBelle, FL 33975 gmcavoy@gnv.ifas.ufl.edu
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**Thomas Produce Company**  
Of South Florida  
Grower and Shippers of Quality Vegetables  
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Boca Raton, Florida 33496

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7100 Twin Eagle Lane  
Fort Myers, Florida 33912  
Phone 941-561-8733  Mobile 941-994-4657

**KeyPlex**  
PO Box 11094  
Naples, FL 34101  
Phone 941-910-4837  Fax 941-514-0168

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Immokalee, FL 34142  
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