



UNIVERSITY OF  
FLORIDA

E X T E N S I O N

Institute of Food and Agricultural Sciences

Hendry County Extension

PO Box 68 LaBelle, Florida 33975-0068

Phone (863) 674-4092

# SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

October 5, 2012

After a relatively dry summer, South Florida experienced a more typical rainfall pattern in September which was characterized by greater variations in rain amounts with the area under a generally moist west to southwest wind flow aloft.

Most of metro southeast Florida as well as inland portions of southwest Florida received near to above normal rainfall in September, while most of the eastern Everglades, western Collier County and areas right around Lake Okeechobee were below normal. Most areas ranged from 6 to 10 inches of rain for the month.

Increased cloud cover and rainfall helped keep temperatures near to slightly below normal during September. Lows were mostly in the 70's with daily high in the upper 80's and low 90's.

### FAWN Weather Summary

Date	Air Temp °F		Rainfall (Inches)	Ave Relative Humidity (Percent)	ET (Inches/Day) (Average)
	Min	Max			
<b>Balm</b>					
9/13 – 10/5/12	63.93	91.92	5.82	87	0.12
<b>Belle Glade</b>					
9/13 – 10/5/12	68.05	92.23	3.88	90	0.14
<b>Clewiston</b>					
9/13 – 10/5/12	70.54	91.51	3.82	86	0.13
<b>Ft Lauderdale</b>					
9/13 – 10/5/12	72.28	91.67	4.35	84	0.12
<b>Fort Pierce</b>					
9/13 – 10/5/12	68.95	92.53	5.78	88	0.12
<b>Homestead</b>					
9/13 – 10/5/12	70.5	92.30	6.06	88	0.13
<b>Immokalee</b>					
9/13 – 10/5/12	68.76	96.40	7.95	87	0.13

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**Some East Coast locations including parts of Miami-Dade, Broward and Palm beach Counties have received near record rainfall for the year.**

**Crops around are still looking good although some early tomatoes have lost a lot of lower leaves to bacterial spot.** A few strawberries are being planted around Plant City area. Rainy weather interfered with land prep and planting in many areas and has growers hoping for a few dry days.

**The National Weather Service forecast calls for a summer like weather pattern through this weekend before drier weather moves into the area next week.**

**Showers and thunderstorms are expected through Sunday in the interior and western sections of south Florida, including the western portions of the lake.** Drier conditions are expected toward the middle of next week as a cold front moves southeast and through south Florida late this weekend. Unfortunately, the front is not expected to bring any real cool air to the area only drier weather.

**For additional information, visit the National Weather Service in Miami website at <http://www.srh.noaa.gov/mfl/newpage/index.html>**

## **Insects**

### **Worms**

**On the East Coast, growers and scouts are reporting pretty high worm pressure in a number of areas.** Scouts report finding yellow striped armyworm coming off of weeds around some fields.

**Reports from the Manatee County area indicate that worms have been heavy around the full moon, with beet armyworm, fall armyworm, southern armyworm, fruitworm, hornworms and melonworms all showing up depending on the crop.**

**Around Southwest Florida, worms are plentiful and with some pretty high numbers in some places, mostly southern and beet armyworms but growers and scouts also reporting several fall armyworms and some fruitworms.** Melonworms are also around on cucurbits.

**Around Belle Glade, Dr Gregg Nuessly, Entomologist at UF/IFAS EREC reports fall armyworm is present on sweet corn right out of the gate on early plantings around Belle Glade.** Scouts report 75-100% infestation on some plantings.

**Although armyworms are active year round in our area, numbers are typically highest from August through October as cooler weather to our north pushes migrating moths southward.** Pheromone traps can help provide relative estimates of moth activity within an area.

**Hosts include many vegetables, agronomic crops and grasses.** Most armyworms go through five larval stages within 14 to 21 days (species and temperature dependent). Young caterpillars tend to congregate in the vicinity of hatching for about 24 to 48 hours, after which they migrate to different plants and/or feeding sites. Young worms scarify the leaves as they feed, leaving a thin, windowpane appearance. As they grow, their ability to consume plant tissue increases and they can chew large holes in leaves or strip an entire plant. Damage can be extensive.

**The different armyworms are similar in color, size and markings and can be difficult to tell apart.**

- The fall armyworm, (*Spodoptera frugiperda*), is probably the most damaging Florida armyworm. It may be light tan to shades of gray or green. The head capsule is usually shiny black or brown, with a

prominent yellow or white inverted Y marking on the front. The body has many black tubercles, or round, mole like structures. When fully grown, the caterpillar reaches 1 1/2".

- The beet armyworm, (*Spodoptera exigu*), is about 1 1/4" long when mature. The body is usually some shade of green but can vary, with prominent dark lateral bands running its full length. There is a single prominent black spot behind the head, about halfway up the side of the body and right above the second pair of true legs. Beet armyworms are often the most difficult to control.
- The southern armyworm, (*Spodoptera eridania*) is one of the more robust armyworms and is often called a "climbing cutworm." The mature larva can exceed 1 1/2" in length and can be either gray or pinkish. It strongly resembles the yellowstriped armyworm. The head capsule of the southern armyworm is usually yellow to orange in color. The lateral stripe on the side of the body is interrupted by a large dark patch at the beginning of the abdomen.
- The yellowstriped armyworm, (*Spodoptera ornithogalli*), has a brownish head with a pale yellow inverted V on the upper front. It has distinct bright yellow lines on the top of the sides of the body. It has two rows of black triangle shaped markings running the length of the body. A thin white line runs lengthwise through each series of dark triangles. The yellowstriped armyworm is more common in north Florida.
- **Tomato fruitworm/corn earworm:** (*Helicoverpa zea*) Larval color is variable, ranging from very dark to light green or pink with alternating longitudinal dark and light stripes. The skin is covered with short sharp micro spines. Adults are active at night, with a 1-1/2 in. wing span. Males display a cream colored forewing with orange or olive cast, while females have a light yellow brown forewing with indistinct vertical lines. Eggs are waxy white and ribbed, with a flat base, and are deposited singly usually on lower surfaces of leaves adjacent to or near flowers. Eggs hatch in 2 3 days.
- **Cabbage or soybean looper:** (*Trichoplusia ni* or *Pseudoplusia includens*) Larva are pale green with white line alongside of body and only 3 pair of prolegs. Mature size 1 – 1 1/4 in. Adult is a grayish brown moth that is active at night. Front wings marked near center with a figure 8 shaped, silver white spot. Eggs are greenish white, ridged but flattened laterally and are found singly on upper or lower leaf surfaces of upper canopy leaves. Hatches in 2 3 days.

**The Florida Tomato Scouting Guide has excellent color photographs to help you identify these and other common tomato pests.** It can be found on the web at <http://FTSG.ifas.ufl.edu/intro.htm>

**Scouting is extremely important in detecting worms early before they can do significant damage.** The Florida Tomato Scouting Guide indicates a pre-bloom threshold of 1 larva/6plants and post-bloom threshold of 1 egg mass or larva/field.

**Over the past few years, chemical manufacturers have produced a variety of new tools in the battle against armyworms so that growers now have a wide array of excellent worm control materials at their disposable these days.**

**Growers are reminded to rotate between products of different chemical classes to avoid the buildup of possible pest resistance.** The range of materials available to choose from makes this task relatively easy to do.

**Consult UF/IFAS recommendations for currently labeled insecticides for worm control in Florida vegetables.**

## Whiteflies

**Respondents in the Manatee/Ruskin area report that whiteflies are widely present with numbers remaining pretty steady but varying from location to location.** Scouts report finding seeing some pupae in younger plantings where heavy adult populations are present.

**Around Immokalee, whiteflies remain a threat.** Whitefly numbers have been up and down - some days up to 3/plant and then less in 20 plants depending on the weather. While it appears the rainfall may help lower adult numbers they often rebound within a few hours after the rain ends. Scouts also report finding low levels of nymphs developing on some of the older crops in the area.

**Reports from Palm Beach indicate that whitefly adults are fairly widespread in low numbers in many areas.** Scouts report finding some whitefly eggs and small nymphs coming in on some transplants.

**Reports from Homestead indicate that whitefly numbers are high in green beans; tomato growers adjacent to bean fields should be alert to this especially when beans are harvested causing whiteflies to move.**

### **Management of Whiteflies, Whitefly-Vectored Plant Virus, and Insecticide Resistance for Vegetable Production in Southern Florida**

#### **Recommendations:**

##### **A. Crop Hygiene**

Field hygiene should be a high priority and should be included as an integral part of the overall strategy for managing whitefly populations, TYLCV incidence, and insecticide resistance. These practices will help reduce the onset of the initial infestation of whitefly, regardless of biotype, and lower the initial infestation level during the cropping period.

1. Establish a minimum 2 month crop free period during the summer, preferably from mid-June to mid-August.
2. Disrupt the virus-whitefly cycle in winter by creating a break in time and/or space between fall and spring crops, especially tomato.

##### **B. Cultural Control Practices.**

Reduce overall whitefly populations, regardless of biotype, and avoid introducing whiteflies and TYLCV into crops by strictly adhering to correct cultural practices.

1. Use proper pre-planting practices.
  - a. Plant whitefly and virus-free transplants.
  - b. Delay planting new fall crops as long as possible.
  - c. Use determinant varieties of grape tomatoes to avoid extended crop season.
  - d. Use TYLCV resistant tomato cultivars where possible and appropriate, especially during historically critical periods of virus pressure. Whitefly control must continue even with use of TYLCV resistant cultivars because these cultivars can carry the virus.

- f. Use TYLCV resistant pepper cultivars when growing pepper and tomato in close proximity.
- g. Use ultraviolet light reflective (aluminum) mulch on plantings that growers find are historically most commonly infested with whiteflies and infected with TYLCV.

## **2. Post-planting practices.**

- a. Apply an effective insecticide to kill whitefly adults prior to cultural manipulations such as pruning, tying, etc.
- b. Rogue tomato plants with symptoms of TYLCV at least until second tie. Plants should be treated for whitefly adults prior to roguing and, if nymphs are present, should be removed from the field, preferably in plastic bags, and disposed of as far from production fields as possible.
- c. Manage weeds within crops to minimize interference with spraying and to eliminate alternative whitefly and virus host plants.

## **Insecticidal Control Practices for Whiteflies.**

### **1. Delay resistance to neonicotinoid and other insecticides by using a proper whitefly insecticide program.** Follow the label!

- a. Use neonicotinoids in the field only during the first six weeks of the crop, thus leaving a neonicotinoid-free period at the end of the crop.
- b. As control of whitefly nymphs diminishes following soil drenches of the neonicotinoid insecticide or after more than six weeks following transplanting, use rotations of insecticides of other chemical classes.
- c. Use selective rather than broad-spectrum control products where possible to conserve natural enemies and enhance biological control.

### **2. Soil applications of neonicotinoid insecticides for whitefly control.**

- a. For best control, use a neonicotinoid as a soil drench at transplanting, preferably in the transplant water.
- b. Soil applications of neonicotinoids through the drip irrigation system are inefficient and not recommended.
- c. Do not use split applications of soil drenches of neonicotinoid insecticides (i.e. do not apply at transplanting and then again later).

### **3. Foliar applications of neonicotinoid insecticides for whitefly control.**

- a. Foliar applications, if used instead of or in addition to soil drenches at transplanting, should be restricted to the first 6 weeks after transplanting. Do not exceed the maximum active ingredient per season according to the label.
- b. Follow scouting recommendations when using a foliar neonicotinoid insecticide program. Rotate to non-neonicotinoid insecticide classes after the first 6 weeks and do not use any neonicotinoid class insecticides for the remaining cropping period.

For more information, see **Management of Whiteflies, Whitefly-Vectored Plant Virus, and Insecticide Resistance for Vegetable Production in Southern Florida** at <http://edis.ifas.ufl.edu/in695>

### **Pepper Weevils**

**Growers and scouts in several areas report continue to report finding a few pepper weevils on plants that have been in the ground for less than 10 days.**

**Scouting efforts should concentrate on a search for adults in leaf whorls, flowers and fruit during morning hours.** Commercially available pheromone traps may also aid in early detection. Fruit and flower buds should be examined for damage and fallen fruit and buds examined for presence of larvae. Pheromone traps may also help growers detect first adult emergence or migration into the field.

**Spraying should commence at the first sign of weevils or with flowering in fields with a history of problems.** Vydate has been the standard control and has given pretty good results when sprayed weekly in trials at the Southwest Florida Research and Education Center although reduced susceptibility has been reported by some producers. A total of 24 pints can be applied for the season.

**Other products that have performed well in trials include Belay (Clothianidin), Capture (bifenthrin), Kryocide (cryolite), Assail (acetamiprid), Actara (thiomethoxam) and Venom (Dinotefuran).**

**Organic growers have few options – Pyganic may provide some control of adults.** Some growers report that tank mixes of Pyganic and diatomaceous earth may provide some synergy and enhance control. Application of products like Surround (kaolin clay) may help reduce egg-laying. Sanitation including removal and destruction of damaged and fallen fruit is an important control measure.

### **Broad Mites**

**A few broad mites are showing up on pepper in a number of places around South Florida.**

**Broad mites can affect a large number of hosts including vegetables such as basil, eggplant, green beans, potato, and tomato as well as a variety of fruits and ornamental plants.**

**This destructive pest attacks terminal leaves and flower buds and causes them to become malformed.** Broad mite feeding distorts plant tissue, causing leaves to become hardened, thickened and narrow, giving them a “strappy” appearance. The blooms abort and plant growth is stunted when heavy pressure is present.

**Mites are usually seen on the newest leaves and small fruit.** Leaves turn downward and turn coppery or purplish. Internodes shorten and the lateral buds break more than normal.

**Malformed terminal buds and stunted growth is often a telltale sign that broad mites are present.** Broad mites are extremely tiny and are impossible to see without a 10X or stronger hand lens. The mites may crowd into crevices and buds. Mites prefer the shaded side of fruit and the underside of leaves, which usually faces the plant, so scouts must be diligent and carefully inspect affected plants to detect these tiny creatures.

**A number of products such as AgriMek Oberon and Portal are labeled for control of this pest.** Sulfur, insecticidal oils or soaps are also effective and can be used by organic producers. Due to short life cycles, frequent repeated sprays may be necessary to obtain control.

## Leafminers

**Around Immokalee, leafminer activity seems to be starting earlier than normal.** Leafminer pressure has been heavy and some growers will most likely begin applying controls by next week.

**On the East Coast, leafminer are showing up on tomato and eggplant at treatable levels in some locations.**

**Leafminer pressure remains light in the Manatee/Ruskin area.**

## Cucumber Beetles

**A few cucumber beetles continue to be seen around Southwest Florida and in the Glades.** Around Belle Glade, Dr Gregg Nuessly reports that banded cucumber beetles have done well on spiny amaranth all summer and are ready to move to vegetables. He notes that the adults can cause lots of damage in a short time to newly emerged plants.

## Aphids

**A few aphids are showing up here and there but are little cause for concern except for watermelon growers where papaya ringspot virus is a concern.**

## **Diseases**

### Bacterial Spot

**Around Immokalee, growers are still fighting bacterial spot on a number of farms.** Some fields remain fairly clean but others are about covered up with lesions. It's still early to say how it will impact the final yields but some fields are showing enough foliage damage and infected fruit with infections that yield reduction is likely.

**On pepper, there is a little bacterial spot showing up in a few places, mostly in specialty varieties which lack genetic resistance.**

**Respondents on the East Coast report that bacterial spot incidence and occurrence in tomato is increasing.** Peppers remain pretty clean.

**Reports from the Manatee/Ruskin area indicate that bacterial spot is the main disease in tomato and has increased with recent rains.** In some of the more severely affected fields, lower leaves are blighted halfway up the plant.

**Growers and scouts report that some bacteria spot infected plants are still coming out of greenhouses.**

**Bacterial spot is one of the most serious diseases of tomato in Florida because it can spread rapidly during warm periods with wind driven rains, and because fruit symptoms reduce marketability.**

**Bacterial spot is caused by several species of *Xanthomonas* spp.** In Florida, the major species encountered on tomato is *X. perforans*.

**Symptoms of bacterial spot appear as small, water-soaked, greasy spots on infected leaflets.** On tomatoes, distinct spots with or without yellowing occur. Individual leaf spots may coalesce with each other, resulting in

the browning of entire leaflets. Fruit spots often begin as dark specks with or without a white halo. As spots enlarge, they become raised and scab-like.

**An integrated approach is needed to manage this disease.**

**Exclusion is the best means of managing bacterial spot on tomato.** Unfortunately, even the best bactericidal treatment offers only limited protection when environmental conditions are favorable for rapid disease development, especially during periods of heavy, wind-driven rains.

**Sanitation is important. Pepper and tomato volunteers and solanaceous weeds should be destroyed between crops.** Transplant houses should be located away from tomato or pepper fields. Purchase only certified disease-free transplants and seed.

**Since water movement spreads the bacteria from diseased to healthy plants, workers and farm equipment should be kept out of fields when fields are wet because the disease will spread readily under wet conditions.**

**No resistant tomato varieties are available commercially.**

**It is important to apply sprays before and during rainy periods.** If conditions are favorable, frequent spraying may not be sufficient to maintain bacterial spot below damaging levels.

**The traditional recommendation for bacterial spot control consists of copper and maneb or mancozeb.** The effectiveness of copper is limited, because of the widespread occurrence of copper tolerance among strains of *Xanthomonas*.

**In the past few years several new products have come on the market that have given good results in research trials when used in rotation or together with traditional controls such as copper.** These include Tanos (Dupont), Regalia (Maronne Bio-Innovations) and Serenade and Sonata (AgraQuest).

**Several recent trials have shown good control with the SAR elicitor Actigard (Syngenta).**

**Over the past few years, a number of growers and researchers have experienced success with the bacteriophage (bacterial virus) AgriPhage (Omnilytics) for the control of bacterial spot.** Success with AgriPhage requires a high level of management and sampling to detect new strains of bacteria and submit the samples to Omnilytics for reformulation.

**Some growers have also reported good results using Oxidate (Biosafe Systems) as a sanitizing agent following cultural operations or weather events favoring the development and spread of the disease.**

### **Target Spot**

**Low levels of target spot are showing up on tomato in a number of locations around South Florida.**

**Target spot is frequently misdiagnosed as in its early stages as symptoms are difficult to recognize and can be confused with bacterial spot and early blight.**

**The name derives from the bull's eye appearance that is often displayed in lesions caused by the disease.** Since concentric rings are not always visible and not all lesions with concentric rings are target spot, it is recommended that a laboratory diagnosis be obtained to ensure that a correct diagnosis is made.



**On tomato leaves and stems, foliar symptoms of target spot consist of brown-black lesions with subtle concentric rings giving them a target-like appearance.** These can sometimes be confused with early blight. With early blight, the lesions are often associated with a general chlorosis of the leaf.

**On tomato fruit, lesions are more distinct.** Small, brown, slightly sunken flecks are seen initially and may resemble abiotic injury such as sandblasting. As fruits mature the lesions become larger and coalesce resulting in large pitted areas.

**Currently, target spot is controlled primarily by applications of protectant fungicides.** It should be noted that tank-mix sprays of copper fungicides and maneb do not provide acceptable levels of target spot control. In recent trials, at the University of Florida fungicides were rated for efficacy as follows:

- 1) Switch, Inspire Super
- 2) Revus Top, Scala
- 3) Tanos, Endura, Quadris (and other strobilurins), Reason
- 4) Bravo (chlorothalonil)
- 5) Mancozeb, Copper

### **Early Blight**

**Early blight is showing up on tomato at very low levels in several locations around South Florida.**

### **Pythium**

**Pythium is present on beans, tomato, peppers and watermelons around South Florida and is causing some stand loss in places affected by heavy rains.**

**Pythium is often associated with root rots and pre-emergent and post-emergent damping off. One of the characteristics of tissue infected with Pythium spp. is the presence of water-soaked or greasy appearing tissue.** This is in contrast to the orange to red to dark, sunken lesions caused by *Rhizoctinia solani*.

**Infection with Pythium spp. also causes wilting of numerous crop species.** Plants affected by Pythium root and stem rots commonly exhibit yellowing of the lower leaves. Above ground portions may be affected.

**Excess fertilizer, flooded soils, insect feeding, and nematode feeding may also contribute to dysfunctional roots.** For accurate diagnosis, it is best to submit samples to a reputable diagnostic laboratory.

**Pythium is one of the Oomycetes or “water molds.”** It thrives in moist soils and multiplies and spreads rapidly under wet conditions. Although Pythium is capable of producing several spore types, zoospores and oospores are most important.

**Zoospores are mobile.** They are produced rapidly and in great numbers and contribute to the organism’s ability to cause disease almost “over-night.” Zoospores may be detected within half an hour after a site is flooded and can “swim” for up to 30 hours and move three or more inches through soil.

**Oospores are extremely durable and can survive in soil and infected crop debris for more than 10 years.** A number of broadleaf and grassy weeds may host Pythium spp. and serve as important sources of inocula.

**Resistant cultivars do not exist so control of Pythium depends on a variety of tactics.** Crops should be planted on raised beds in well-drained soils.

**Pre-plant soil fumigation is effective if applied correctly.** Soil solarization has successfully suppressed Pythium in some cases. Fumigant formulations containing chloropicrin are the most effective in providing control.

**If a solarization or a soil fumigant is used, raised beds are important since fumigated soil has minimal or no beneficial organisms to compete against pathogens.** Control is at best temporary as under the right conditions zoospores from un-fumigated soil may readily re-infest treated bed.

**A number of chemical treatments are available for the control of damping off. Seed treatments containing mefenoxam (Apron) work best.**

**Fungicidal drenches such as Ridomil Gold (mefenoxam) are effective for the suppression of seedling blights and root rots if applied before infection occurs.**

**Several biological control agents, including actinomycetes and other bacteria and fungi, are available commercially for suppression of Pythium and other soil borne pathogens.** Biological products like SoilGuard and Serenade Soil may also provide some control.

**Some aerial pythium has been reported on some beans in the Glades.**

**Aerial pythium can also affect other crops including tomato and pepper where symptoms appear as a watery rot on leaves, petioles, and stems.** Severe aerial pythium infections can result in plant death. Microscopic examination of symptomatic tissue will reveal the presence of mycelium and oogonia typical of Pythium spp. Aerial pythium is typically restricted to periods of unusually high rainfall.

### **Southern Blight**

**Growers and scout report find low levels on southern blight mostly consisting of single scattered plants in several locations.**

### **Tomato Yellow Leaf Curl Virus**

**Around Immokalee, some TYLCV has been detected in tomato, occurrence is scattered and incidence is mostly low but it has reached 5% in some isolated patches.**

**In the Manatee Ruskin area, tomato yellow leaf curl virus remains mostly low at less than 1% in most places although at least one report of fairly high virus incidence in a field has been received from the Plant City area.**

### **Groundnut Ringspot Virus/ Tomato Chlorotic Spot Virus**

**Growers and scouts report finding spotty amounts of tospoviruses out there on tomatoes around South Florida.** Whether it is groundnut ringspot virus or tomato chlorotic spot virus remains to be determined.

**Groundnut ringspot virus has been diagnosed in tomato fields across South Florida from Homestead to as far north as Manatee County.** Occurrence has been at mostly at low levels but has approached 2% infection rate in some fields. Infected seedlings have also been found in greenhouses.

**Foliar symptoms of GRSV include necrotic flecking/spots, irregular chlorotic areas and deformation (inward rolling) of leaflets. Necrotic lesions on stem and petiole epidermal tissues may also be present.**

**Fruit symptoms consist brown necrotic flecking and ringspotting. Fruit may be deformed, show uneven ripening and often have raised bumps on the surface.**

**Tomato chlorotic spot virus is new virus which was found in Florida on tomato last season in Miami Dade and Hendry counties.** It is similar but distinct from other tospoviruses, such as Tomato spotted wilt virus (TSWV) and Groundnut ringspot virus (GRSV), viruses with which some Florida tomato growers may be familiar.

**Early symptoms of infection are difficult to diagnose.** In young infected plants the characteristic symptoms consist of inward cupping of leaves and leaves that develop a bronze cast followed by dark necrotic spots.

**Tomato chlorotic spot virus causes necrosis in tomato leaves and stems, and causes ringspots and other deformations of the fruit.** This virus was found in necrotic plants which later died this past spring in Homestead.

**The two viruses can only be distinguished from each other by PCR testing and other genetic techniques.**

**Various species of thrips serve as the vectors of both GRSV and TCSV.**

**The use of virus-free transplants, insecticides to control thrips, rouging infected plants, SAR elicitors such as Actigard, and UV-reflective mulch will likely be effective managing both viruses.**

### **Downy Mildew**

**Respondents report that downy mildew is firing up in some watermelons and other cucurbits in multiple locations around South Florida.**

### **Gummy Stem Blight**

**Gummy stem blight is also reaching very serious levels in several watermelons fields around SW Florida.** Between downy mildew and gummy stem blight it is easy to see why most melons are grown in the spring.

### **Cucurbit leaf crumple virus**

**Cucurbit leaf crumple virus is widely present on squash and watermelon in several locations from Plant City to Immokalee.**

**On yellow straightneck squash and zucchini symptoms include thickened and distorted leaves, which also become curled and crumpled in appearance.** The symptoms on infected yellow squash differ to some extent from those on zucchini. The leaves of yellow straightneck squash plants become rounded on the edges while leaves of zucchini plants do not.

**Zucchini fruit do not show obvious symptoms, but the fruit from infected yellow straightneck squash were streaked with green, making them unmarketable.**

**Crumple leaf is spread by whiteflies.** Leaf silvering causing by feeding whiteflies is distinct from cucurbit leaf crumple disease and should be not be confused with it.

**Symptoms in watermelon include yellowing and crumpling of the leaves.**

**Where whiteflies are a problem, a soil-applied neonicotinoid insecticide such as imidacloprid (Admire®), thiamethoxam (Platinum®), or dinotefuran (Venom®) should be used at planting.** If a foliar application of

dinotefuran is used instead of a soil application, it is best to apply it in the first 30 days of the crop, before flowering. In addition to protecting bees, it also will help limit the exposure of the whitefly population to neonicotinoids during the latter part of the crop cycle.

**Crops should be monitored regularly for the presence of adult whiteflies.** An application of pymetrozine (Fulfill®) will reduce the number of adults and nymphs and can help slow virus spread into and within the crop. Other materials that can be used to reduce adult populations include endosulfan or a combination of bifenthrin and endosulfan. A new product, spiromesifen (Oberon®), is effective against immature stages of the whitefly as is buprofezin (Courier®), an insect growth regulator.

**Although spiromesifen and buprofezin affect only reproduction and survival of immatures, they can help reduce secondary spread within and between fields by slowing the increase of the whitefly population.**

## News You Can Use

### FFVA's Dan Botts to Be Inducted into Florida Ag Hall of Fame

The Florida Department of Agriculture and Consumer Services and the Florida Agricultural Hall of Fame Foundation announced Tuesday four agricultural leaders in Florida who will be inducted into the Florida Agricultural Hall of Fame.

FFVA's Dan Botts, vice president of industry resources, was included in the four.

“This is a richly deserved recognition of the tremendous contributions Dan has made to the betterment of Florida agriculture,” said FFVA President Mike Stuart. “We’re all extremely proud of Dan and look forward to his induction into the Florida Agricultural Hall of Fame.”

A news release announcing the inductees said, “For more than three decades, Botts has been a leader in pesticide policy and a vital advocate on behalf of Florida growers and minor crop producers. Through his leadership on national pesticide policy, Botts has ensured the continued availability of critical products, such as methyl bromide, that make growing fresh fruits and vegetables viable in Florida. Botts serves on many important government and agriculture industry committees, including the Florida Department of Agriculture and Consumer Services' Food Safety and Security Advisory Committee.”

Also inducted were former Florida Agriculture Commissioner Charles Bronson; Dr. Paul L. Nicoletti, a University of Florida veterinary researcher and professor; and the late Dr. Eugene Trotter, who established the Florida Leadership Program for Agriculture and Natural Resources at the University of Florida, which in 2002 became the Wedgworth Leadership Institute for Agriculture and Natural Resources.

The Agricultural Hall of Fame recognizes men and women who have made outstanding contributions to the state's agriculture industry.

## US Pesticide Usage

In 2007, the last year for which data are available, 857 million pounds of conventional pesticides were used in the United States. That amount was up slightly from 821 million pounds in 2006, but down about eight percent from the 926 million pounds used in 2000.

Conventional pesticides include herbicides, insecticides, fungicides and fumigants used in agricultural, industrial, government and home applications - and they account for about 17 percent of pesticide use in the United States. In 2007, 389 million pounds of specialty biocides such as disinfectants were used - up from 353 million pounds in 2000. This accounts for 8 percent of pesticides used in the U.S.

About 2,532 million pounds of chlorine and other chemicals used in water treatment were used in 2000; their usage increased to 2,609 million pounds in 2001 and is estimated to have remained steady. Such chemicals account for about 51 percent of pesticide use.

About 809 million pounds of wood preservatives such as creosote were used in 2000. This amount increased to 954 million pounds in 2007, about 19 percent of pesticide use in the United States.

Overall pesticide use in the U.S. increased from 4,928 million pounds in 2000 to 5,085 million pounds in 2007.

Broken down by active ingredient, herbicides account for the most usage of conventional pesticides, at 47 percent of U.S. pesticide usage (25 percent of worldwide usage). Insecticides account for 8 percent of U.S. pesticide usage (10 percent of the world market). Fungicides make up just 6 percent of U.S. pesticide usage (14 percent of worldwide usage). Thirty-nine percent of the pesticides used in the U.S. fall into a miscellaneous category, which includes nematicides, fumigants and chemicals such as sulfur, petroleum and sulfuric acid that are sometimes used as pesticides. (The Commercial Appeal, 8/19/12).

### **USDA cracking down on Fake Organic Products**

The U.S. Department of Agriculture is cracking down on businesses selling fake organic products. Most recently, a businessman with the largest organic fertilizer operation in the West pleaded guilty to fraud charges. Kenneth Noel Nelson, Jr., of Bakersfield, CA, pleaded guilty to four counts of mail fraud for selling organic fertilizer that was not organic. He faces 20 years in prison and a \$250,000 fine. He will be sentenced in November.

Nelson is one of the largest fake organic businessmen USDA has caught. According to the Department of Justice, his company, Port Organic Products Ltd., sold approximately \$40 million worth of the fertilizer from 2003 to 2009. He did not disclose to customers that the fertilizer contained aqueous ammonia and ammonium sulfate. His organic certification was obtained with false applications. Nelson's actions put many organic farming operations in jeopardy of losing their organic certification.

USDA investigators appear to be stepping up their enforcement of organic rules. Long criticized for not enforcing the rules, USDA is now beginning an "age of enforcement," according to USDA investigators. Organic groups appear pleased with the stronger enforcement.

In another case, Peter Townsley of California Liquid Fertilizer pleaded guilty to fraud for using banned chemicals in its "Biolizer XN" fertilizer, which was sold as organic. He is awaiting sentencing after the two-year investigation as a result. (AGProfessional, 8/13/12).

### **Up Coming Meetings**

**October 15, 2012**

**GAPs Food Safety Class**

**12 Noon – 2:30 PM**

SW Florida Research and Education Center  
SR 29 N  
Immokalee, FL 33935

Cost is \$60

For more information or to RSVP – 863-674-4092

**October 17, 2012**                      **UF/IFAS Farm Labor Supervisor Core Training Program\***                      **8:00 AM—5:00 PM**

Gulf Coast Research & Education Center  
14625 CR 672  
Wimauma, FL 33598-6101

**\*Multiple locations and dates as below.**

**October 19, 2012**                      **Core/ Private License Prep Class**                      **8:00 AM - 5:00 PM**

Hendry County Extension Office  
1085 Pratt Boulevard  
LaBelle, Florida 33935

Call 863-674-4092 to register

**November 4-6, 2012**                      **21st International Pepper Conference**

Naples Grande  
Naples, Florida

For more information, go to <http://www.conference.ifas.ufl.edu/pepper2012/>

**November 7, 2012**                      **Florida Ag Expo: Gulf Coast Research and Education Center**

Registration is now open. For more information and to register please visit:  
<http://www.floridaagexpo.com/>

**November 19-20, 2012**                      **Primus GFSI Food Safety Workshop**

SW Florida Research and Education Center  
SR 29 N  
Immokalee, FL 33935

**For more information, contact 863-674-4092 or email [gmcavoy@ifas.ufl.edu](mailto:gmcavoy@ifas.ufl.edu)**

## **UF/IFAS FARM LABOR SUPERVISOR CORE TRAINING PROGRAM**

This program will provide farm labor contractors and others involved with farm labor management with training in knowledge and understanding of legal compliance issues in four key areas:

**Agenda 8:00 am—5:00 pm**

### **MORNING SESSION**

**WAGE & HOUR - 2 hours - 8:00 am—10:00 am**

Violations, disclosure of pre-work conditions and rules of deductions, wage summary, minimum wage, hours worked

**HR COMPLIANCE** - 2 hours - 10:00 am—12:00 pm

Discrimination, temporary disabilities, pregnant women, sexual harassment, child labor, human trafficking

**LUNCH**—12:00—1:00 pm

**AFTERNOON SESSION**

**WPS, FIELD SANITATION, FOOD SAFETY** - 2 hours - 1:00 pm—3:00 pm

Pesticides, decontamination, postings, field sanitation regulations, food safety

**SAFE DRIVING** - 2 hours - 3:00 pm—5:00 pm

Vehicle maintenance, inspections, defensive driving, rural driving

Lunch provided with registration for at least 2 “Core” classes.

**DATES and LOCATIONS**

**Wimauma** - Wednesday Oct. 17th  
Gulf Coast Research & Education Center  
14625 CR 672  
Wimauma, FL 33598-6101  
(813) 634-0000

**Arcadia** - Tuesday Oct. 23rd  
Family Service Center  
310 W Whidden Street  
Arcadia, FL 34266-4193  
(863) 993-4846

**Sebring** - Tuesday Oct. 30th  
Bert J. Harris Ag Center, Auditorium  
4509 George Blvd  
Sebring, FL 33875-5837  
(863) 402-6540

**Belle Glade** - Wednesday Oct. 31st  
Everglades Research & Education Center  
3200 E Palm Beach Road  
Belle Glade, FL 33430-4702  
(561) 993-1500

(Additional dates and locations can be added on request)

**WHO:** Supervisors of farm workers: Labor contractors, crew leaders, growers, bus and van drivers, office staff: payroll and HR.

**LANGUAGE:** English or Spanish

**FEE:** \$ 10.00 per unit - \$ 40.00 per complete day

## **2012 Florida Ag Expo Program & Speakers**

### **UF/IFAS Gulf Coast Research and Education Center (GCREC)**

**Balm, FL**

**November 7, 2012**

7:30 - 8:15 a.m. Registration and Complimentary Breakfast/Vendor Booths Open

8:15 - 8:20 a.m. Welcome and Overview

Jack Rechcigl, Director, UF/IFAS, GCREC

8:20 - 9:00 a.m. Adam Putnam, Commissioner of Agriculture (Invited)

### **Marketing Forum**

#### **9:00 - 10:00 a.m. Session I - Developing New Market Potentials for Growers**

Moderator - Mike Stuart, FFVA

- How to make your product stand out to buyers (TBD)
- Farm to School Marketing Program - Robin Safley, FDACS
- Local Choice - Tracy Irani, UF/Scientific Thinking Educational Partnership (STEP), AEC Department

10:00 - 10:30 a.m. Refreshments/Vendor Booths Open

#### **10:30 - 11:30 a.m. Session II - How To Make Your Product Stand Out**

Moderator: Ted Campbell, Florida Strawberry Growers Association

- Gary Wishnatzki, Wish Farms (social media)
- Jessica Kerstein, Lipman Produce
- Greg Styers, Bejo Seeds

11:30 a.m. - 1:00 p.m. Lunch/Vendor Booths Open

### **New UF Varieties**

Moderator: Crystal Snodgrass, County Vegetable Agent, Manatee County Extension

1:00 - 1:15 p.m. Tomatoes, Sam Hutton, UF/IFAS, GCREC

1:15 - 1:30 p.m. Strawberry, Vance Whitaker, UF/IFAS, GCREC

1:30 - 1:45 p.m. Peaches, Jose Chaparro, UF/IFAS, Horticultural Sciences Dept.

1:45 - 2:00 p.m. Blueberries, James Olmstead, UF/IFAS Horticultural Sciences Dept.

2:00 - 2:15 p.m. Potatoes, Lincoln Zotarelli, UF/IFAS Horticultural Sciences Dept.

2:15 - 3:00 p.m. Refreshments/Vendor Booths Open

### **Pest Management** (CEUs available for the Pest Management session)

Moderator - Alicia Whidden, UF/IFAS

3:00 - 3:15 p.m. The Potential of Oil Seed Crops As Beneficial Rotation Crops For Florida Fruit and Vegetable Growers, Dan Chellemi, USDA ARS

3:15 - 3:30 p.m. Disease Update, Gary Vallad, UF/IFAS, GCREC

3:30 - 3:45 p.m. Insect Update, Hugh Smith, UF/IFAS, GCREC

3:45 - 4:00 p.m. Weed Management, Peter Dittmar, UF/IFAS Horticultural Sciences Dept.



**Field Tours** 10:30 a.m. and 1:00 p.m.

- Plant Pathology, Gary Vallad
- Entomology, Hugh Smith
- Tomato Breeding and Genetics, Jay Scott and Sam Hutton

**Walking tours of the greenhouses and horticultural crop research areas tour stops include:**

- Vegetable and small fruit horticulture mechanical harvesting
- Caladium variety trials
- Plant diagnostic laboratory operations
- Greenhouse studies for insect management on strawberry plants
- Greenhouse studies for whitefly management on tomato plants
- On-site wastewater (septic system) for passive removal of N
- Soilless culture for strawberry and vegetable production
- Demonstration of fruit and vegetable cooling methods

**For the Record....**

### **Pesticide Registrations and Actions**

- On July 19, the Florida Department of Agriculture and Consumer Services (FDACS) issued an SLN registration for the plant activator acibenzolar (Actigard®) for control of bacterial diseases in tomato and pepper transplant production trays. The number of the SLN is FL-120003. The EPA registration number for the Syngenta Crop Protection product is 100-922. (FDACS PREC Agenda, 9/6/12).
- Based on a request by IR-4, the EPA has approved tolerances for the herbicide s-metolachlor (Dual Magnum®). Tolerances of importance to the region include cilantro leaves and coriander seed. (Federal Register, 8/15/12).
- Based on a request by IR-4, the EPA has approved tolerances for the herbicide thifensulfuron (Harmony®). Tolerances of importance to the region include chicory roots and tops. (Federal Register, 8/29/12).
- Based on a request by IR-4, the EPA has approved tolerances for the herbicide pendimethalin (Prowl®). Tolerances of importance to the region include soybean vegetable (edamame), turnip greens, melon (subgroup 9A), leaf lettuce, small climbing vine except grape, and brassica leafy greens (subgroup 5B). (Federal Register, 8/29/12).
- Voliam Xpress - Effective immediately tuberous and corm vegetable uses have been removed from the Voliam Xpress Insecticide label and have been migrated to the Besiege Insecticide label. This would be of local interest mainly to potato and sweet potato growers. Besiege Insecticide is an alternate brand of Voliam Xpress and contains the same amounts and ratios of active ingredients. If you have any questions regarding this label change, please contact:

John Taylor, Agronomic Service Representative  
Syngenta  
Phone 561-694-8671  
Mobile 561-718-9492  
john.taylor@syngenta.com

## **Employment Opportunities**

### **Sprayer Operator**

Watercress Farms is a Florida agribusiness producing watercress and baby leaf salad crops. We are based in Myakka City and are looking for a sprayer operator with a current Private Applicators License. Experience with calibrations would be advantageous.

The hours will be variable through the season with the need to work weekends and holidays. Wage is negotiable given prior experience.

All response should be addressed to:

Rob Last  
Production Manager  
Watercress Farms Inc  
13060 Sugar Bowl Road  
Myakka City  
Florida  
Tel 941 219 9494  
E mail rob@watercressfarms .com

### **Irrigation Sales Position**

Job Title: Regional Accounts Sales Manager

Function: Sales

Reports to: Director of Sales

Direct Reports: None

Job Location: Field Based – Central / East Coast of Florida

Revision Date: October 2012

### **POSITION QUALIFICATION SUMMARY**

- The Regional Accounts Sales Manager Position is the main technical support and liaison for the existing company irrigation sales as well as direct account Sales responsibilities for assigned territory.
- This position is responsible for the marketing and sales of all products and services to new and existing clients within a defined sales territory/list of accounts. The Regional Account Manager is responsible for a minimum annual quota dependent upon territory assignment.

### **POSITION DETAILS**

- Responsible for the total irrigation strategic sales plan for assigned territory in Florida.
- Provides technical assistance for existing sales force and will be main liaison for all irrigation needs.
- Manage existing account portfolio, growing the business through account penetration as well as sign up new accounts
- Work closely with Sales Finance, Logistics and Transportation, managing sales cycle from start to finish.
- Establish and maintain relationships with existing and new accounts.
- Meet/exceed all agreed upon volume, revenue, margin, and other SIP objectives through the development and execution of strategic plans
- Responsible for improving customer satisfaction, and delivering internal and external value.
- Serving as a first point of contact for all customer requirements.

- Regular activities include face to face account visits, utilizing the sales process; follow-up letters/e-mails, prospecting via phone, e-mail or other medium; face-to-face sales calls; interaction with accounts and potential accounts at industry-sponsored events and trade shows.
- Entering client data into a CRM system and leveraging the system to generate additional contacts and sales
- Responsible for the accurate completion of paperwork as required by management.
- Participation in and completion of all applicable training -- including ongoing skill and knowledge development beyond initial sales training.
- Performs other duties as assigned.
- Monitor A/R monthly and immediately resolve outstanding A/R issues as needed
- Develop agendas, proposals, presentations for customer business reviews.
- Ensure weekly and monthly reports are accurate, complete and submitted on time.
- Update sales forecast monthly.
- Willingness to travel (up to 60%)

## QUALIFICATIONS

### Education Requirements and/or Preferences:

- Requires four-year college degree or equivalent experience. Agricultural Degree preferred
- Requires previous outside business to business sales experience
- Highly desirable 5+ years' experience in micro-irrigation

### Technical Skill Requirements:

- 5-10 years agriculture sales, preferably in micro-irrigation.
- Strong technical skills in drip irrigation systems and products
- Prior industry experience and account management preferred
- Demonstrated account relationship management skills
- Effective verbal and written communication skills, tactful
- Effective presentation and negotiation skills
- Strong interpersonal skills
- Organized and self-motivated
- Strong leadership skills

### Computer System/Skill Requirements:

- Strong MS Office skills required – with focus on Excel and PowerPoint
- Salesforce.com experience helpful

Please send resumes to: [flirrigationresumes@gmail.com](mailto:flirrigationresumes@gmail.com)

## Farm Land for Lease

Farm Land for lease in LaBelle area – contact Clyde Lavender at 863-673-2338

Farm Land for lease on Babcock Ranch, Hwy 31, Charlotte County. Rotational fields or permanent locations, phone 941-639-3958

## Websites

**Tomato Institute Proceedings** are available at [http://swfrec.ifas.ufl.edu/vegetable\\_hort/tomato\\_institute/](http://swfrec.ifas.ufl.edu/vegetable_hort/tomato_institute/)

**2012-2013 Vegetable Production Handbook for Florida** - provides complete information on Florida vegetable production, ranging from seed technology to integrated pest management to irrigation and pesticide safety. The handbook is produced as a reference for all individual vegetable commodities and cultural practices used and recommended in the state of Florida. Check it out at <http://www.thegrower.com/vegetable-production-handbook-for-florida/pdf/>

**Fruits and Veggies – More Matters** – promoting consumption of fruits and vegetables through education - The potential benefits associated with eating more fruits and vegetables stack up quickly: Reducing your risk of certain chronic diseases is only the beginning. - <http://www.fruitsandveggiesmorematters.org/>

**Know your Farmer/Know Your Food (Everyone Needs a Farmer)** - USDA-wide effort to strengthen local and regional food systems.  
<http://www.usda.gov/wps/portal/usda/knownyourfarmer?navid=KNOWYOURFARMER>

### **Quotable Quotes**

The best and most beautiful things cannot be seen or touched - they must be felt with the heart. - Helen Keller

And now these three remain: faith, hope and love. But the greatest of these is love. - 1 Corinthians 13:13

What good is it for a man to gain the whole world, yet forfeit his soul? - Mark 8:36

Looking for success in life..... "Whatever you do, work at it with all your heart, as working for the Lord, not for human masters." - Colossians 3:23

### **On the Lighter Side**

#### **How Adam Got Eve**

Adam was hanging around the garden of Eden feeling very lonely. So, God asked him, 'What's wrong with you?'

Adam said he didn't have anyone to talk to. God said that He was going to make Adam a companion and that it would be a woman.

He said, 'This pretty lady will gather food for you. She will cook for you, and when you discover clothing, she will wash it for you.

She will always agree with every decision you make and she will not nag you, and will always be the first to admit she was wrong when you've had a disagreement.

She will praise you! She will bear your children and never ask you to get up in the middle of the night to take care of them.

'She will NEVER have a headache and will freely give you love and passion whenever you need it.'

Adam asked God, 'What will a woman like this cost?' God replied, 'An arm and a leg.'

Then Adam asked, 'What can I get for a rib?'

Of course the rest is history.....!!!!

## The Pickle Jar

The pickle jar as far back as I can remember sat on the floor beside the dresser in my parents' bedroom. When he got ready for bed, Dad would empty his pockets and toss his coins into the jar.

As a small boy, I was always fascinated at the sounds the coins made as they were dropped into the jar. They landed with a merry jingle when the jar was almost empty. Then the tones gradually muted to a dull thud as the jar was filled.

I used to squat on the floor in front of the jar to admire the copper and silver circles that glinted like a pirate's treasure when the sun poured through the bedroom window. When the jar was filled, Dad would sit at the kitchen table and roll the coins before taking them to the bank.

Taking the coins to the bank was always a big production. Stacked neatly in a small cardboard box, the coins were placed between Dad and me on the seat of his old truck.

Each and every time, as we drove to the bank, Dad would look at me hopefully, "Those coins are going to keep you out of the textile mill, son. You're going to do better than me. This old mill town's not going to hold you back. "

Also, each and every time, as he slid the box of rolled coins across the counter at the bank toward the cashier, he would grin proudly. 'These are for my son's college fund. He'll never work at the mill all his life like me.' We would always celebrate each deposit by stopping for an ice cream cone. I always got chocolate. Dad always got vanilla. When the clerk at the ice cream parlor handed Dad his change, he would show me the few coins nestled in his palm. 'When we get home, we'll start filling the jar again.' He always let me drop the first coins into the empty jar. As they rattled around with a brief, happy jingle, we grinned at each other. 'You'll get to college on pennies, nickels, dimes and quarters,' he said. 'But you'll get there; I'll see to that.

No matter how rough things got at home, Dad continued to doggedly drop his coins into the jar. Even the summer when Dad got laid off from the mill, and Mama had to serve dried beans several times a week, not a single dime was taken from the jar.

To the contrary, as Dad looked across the table at me, pouring catsup over my beans to make them more palatable, he became more determined than ever to make a way out for me 'When you finish college, Son,' he told me, his eyes glistening, 'You'll never have to eat beans again - unless you want to.'

The years passed, and I finished college and took a job in another town.

Once, while visiting my parents, I used the phone in their bedroom, and noticed that the pickle jar was gone. It had served its purpose and had been removed. A lump rose in my throat as I stared at the spot beside the dresser where the jar had always stood. My dad was a man of few words: he never lectured me on the values of determination, perseverance, and faith. The pickle jar had taught me all these virtues far more eloquently than the most flowery of words could have done.

When I married, I told my wife Susan about the significant part the lowly pickle jar had played in my life as a boy. In my mind, it defined, more than anything else, how much my dad had loved me.

The first Christmas after our daughter Jessica was born, we spent the holiday with my parents. After dinner, Mom and Dad sat next to each other on the sofa, taking turns cuddling their first grandchild. Jessica began to whimper softly, and Susan took her from Dad's arms. 'She probably needs to be changed,' she said, carrying the baby into my parents' bedroom to diaper her. When Susan came back into the living room, there was a strange mist in her eyes.

She handed Jessica back to Dad before taking my hand and leading me into the room. 'Look,' she said softly, her eyes directing me to a spot on the floor beside the dresser. To my amazement, there, as if it had never been removed stood the old pickle jar, the bottom already covered with coins. I walked over to the pickle jar, dug down into my pocket, and pulled out a fistful of coins. With a gamut of emotions choking me, I dropped the coins into the jar. I looked up and saw that Dad, carrying Jessica, had slipped quietly into the room. Our eyes locked, and I knew he was feeling the same emotions I felt.

Neither one of us could speak.

This truly touched my heart. Sometimes we are so busy adding up our troubles that we forget to count our blessings. Never underestimate the power of your actions. With one small gesture you can change a person's life for better or for worse.

**Note: State and local budgets cuts are threatening to further reduce our funding – if you are receiving currently receiving the hotline by mail and would like to switch over to electronic delivery – just drop me an email. It is much quicker and you will get the hotline within minutes of my completing it and help conserve dwindling resources at the same time. Thanks to those that have already made the switch.**

**Contributors** include: Joel Allingham/AgriCare, Inc, Jeff Bechtel/Syngenta Flowers, Bruce Corbitt/West Coast Tomato Growers, Gordon DeCou/Agri Tech Services of Bradenton, Fred Heald/The Andersons, Sarah Hornsby/AgCropCon, Cecil Howell/H & R Farms, Bruce Johnson/General Crop Management, Barry Kostyk/SWFREC, Dr. Mary Lamberts/Miami-Dade County Extension, Leon Lucas/Glades Crop Care, Chris Miller/Palm Beach County Extension, Mark Mossler/UF/IFAS Pesticide Information Office, Gene McAvoy/Hendry County Extension, Alice McGhee/Thomas Produce, Dr. Gregg Nuessly/EREC Chuck Obern/C&B Farm, Dr. Monica Ozores-Hampton/SWFREC, Dr. Rick Raid/ EREC, Dr Ron Rice/Palm Beach County Extension, Dr Pam Roberts/SWFREC, Dr. Nancy Roe/Farming Systems Research, Wes Roan/6 L's, Dr. Dak Seal/ TREC, Kevin Seitzinger/Gargiulo, Ken Shuler/Stephen's Produce, Crystal Snodgrass/Manatee County Extension, Dr. Phil Stansly/SWFREC, Dr Gary Vallad/GCREC , Mark Verbeck/GulfCoast Ag, Alicia Whidden/Hillsborough County Extension, Dr Henry Yonce/KAC Ag Research and Dr. Shouan Zhang/TREC.

The **South 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  
County Extension Director / Extension Agent IV  
Regional Specialized Agent - Vegetables/Ornamental Horticulture

Hendry County Extension Office  
PO Box 68  
LaBelle, Florida 33975  
Web: <http://hendry.ifas.ufl.edu/>

863-674-4092 phone  
863-673-5939 mobile - Nextel 159\*114449\*  
863-674-4637 fax  
[GMcAvoy@ifas.ufl.edu](mailto:GMcAvoy@ifas.ufl.edu)

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***Thomas Produce Company***

Of South Florida  
Grower and Shippers of Quality Vegetables  
9905 Clint Moore Road  
Boca Raton, Florida 33496

Shawn Barley

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**Big W Brand Fertilizer**

(863) 441-9255 cell

Carol Howard

***Mobley Plant World***

1351 W Cowboy Way  
LaBelle, Florida 33935  
Phone 863-675 -2020

Fred Heald

***Farmers Supply Inc***

710 Broward Street  
Immokalee, FL 34142  
Phone 239-657-8254 Fax 239-657-2005

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David Pensabene: Production Manager  
Naples Operations  
Phone 239-353-0300 Fax 239-353-3407

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Todd Villars: West Florida - 863-532-0937  
Sam Monroe: East Florida - 772-473-0873

Dr. Nancy Roe

***Farming Systems Research***

5609 Lakeview Mews Drive  
Boynton Beach, Florida 33437  
Phone 561-638-2755

Ed Early

***DuPont Agricultural Products***

5100 South Cleveland Avenue  
Fort Myers, Florida 33907  
Phone 239-332-1467 Mobile 239-994-8594

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Phone 561-746-3740 Fax 561-746-3775

Stacey Howell

***Bayer CropScience***

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Naples, FL 34120  
Phone (239) 353-6491 Cell (239) 272-8575

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Palm City, Florida 34991  
Phone 772-221-0653 Fax 772-221-0102

Bart Hoopingarner

***Gowan Company***

3605 162nd Ave East  
Parrish, FL 34219  
Phone 941-776-1105 Cell 941-737-7444

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Cody Hoffman  
**Syngenta Crop Protection**  
1505 Paloma Dr.  
Fort Myers, FL 33901  
Cell 321- 436-2591

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Safe Natural Effective  
Vegetable Bacteria Control  
Dave Cole - 561-261-1545  
Tony Swensen - 801-808-2132

Ryan Richards  
**Marrone Bio Innovations**  
863-517-4829 cell  
[r-richards@marronebio.com](mailto:r-richards@marronebio.com)

Brent Beer  
**Beer Leveling &  
Land Development**  
Office 863-675-1663 863-673-3173 cell  
158\*17\*43857 Nextel

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Chuck Goodowns - 352-538-4471

Scott Houk  
**Dow AgroSciences LLC**  
Phone 239-948-3999  
Email [sehok@dow.com](mailto:sehok@dow.com)

**FMC**  
**FMC Corporation APG**  
Ron Palumbo  
Cell 305-304- 7941  
Nextel Agnet 14772  
[Ronald.Palumbo@fmc.com](mailto:Ronald.Palumbo@fmc.com) [www.fmccrop.com](http://www.fmccrop.com)

Steve Mike Dave  
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Phone 239-229-5734 Fax 239-368-0969

Sarah Hornsby, CCA  
**Agricultural Crop Consulting, Inc**  
Scouting: Manatee, Hillsborough, Collier  
Office/Fax 941-776-1122  
Cell 941-713-6116  
Email: [AgCropCon@aol.com](mailto:AgCropCon@aol.com)

Donald Allen  
**AGLIME SALES INC**  
1375 Thornburg Road  
Babson Park, Florida 33827-9549  
Office 863-638-1481 Fax 863-638-2312  
Mobil 863-287-2925

**OxiDate®** BioSafe Systems LLC  
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**AgraQuest Inc**  
Ted Geltz  
Central Florida Regional Sales Manager  
407-405-4982 cell  
[tgeltz@agraquest.com](mailto:tgeltz@agraquest.com)



Special Thanks to the **generous support** of our **sponsors**; who make this publication possible.

Garry Gibson  
**BASF Corporation**  
1502 53rd Avenue  
Vero Beach, Florida 32966  
Office 772-778-4646 AGNET 21726  
w.garry.gibson@basf.com

**ORO AGRI**  
Pesticides and Spreader Oils  
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Reese Martin [rmartin@oroagri.com](mailto:rmartin@oroagri.com)  
UAP/Agriliance/Helena

**Valent USA**  
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Sarah Markle 863-673-8699

Jack Kilgore  
239-707-7677  
**Natural Industries Inc**  
[info@naturalindustries.com](mailto:info@naturalindustries.com)  
**Actinovate® AG**  
Biological Fungicide

Chuck Obern  
**C & B Farm**  
CR 835  
Clewiston, FL 33440  
Office 863-983-8269 Fax 863-983-8030  
Cell 239-250-0551

Scott Allison  
**Diamond R Fertilizer**  
PO Box 1898  
LaBelle, FL 33975  
(863) 675-3700  
[sagator@aol.com](mailto:sagator@aol.com)

Jay Hallaron  
**Chemtura Corporation**  
321-231-2277 cell 407-256-4667 cell  
[jay\\_hallaron@cromptoncorp.com](mailto:jay_hallaron@cromptoncorp.com)

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**KAC Agricultural Research**  
Scouting, Consulting  
Research  
386-736-0098 work 386-527-1124 cell  
[HDYONCE@msn.com](mailto:HDYONCE@msn.com)

**Grower's Management, Inc**  
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