



UNIVERSITY OF
FLORIDA

E X T E N S I O N

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SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

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After a mostly warm and dry winter pattern, several cold fronts hit the area in late February and early March dropping temperatures to near freezing on three occasions in many normally colder areas. Most areas escaped any significant crop damage from the cold but Belle Glade was not so fortunate and reports indicate that temperatures dipped as low as 25 degrees Monday March 5 in some locations away from Lake Okeechobee ruining a few thousand acres of crops and potentially costing growers millions of dollars.

In many locations, strong winds accompanying the fronts battered crops tearing up plants and affecting quality. Growers report severe twisting and stem damage on young watermelons.

All areas reported significant precipitation for the period with most places reporting between an inch to over two inches of rain for the period.

FAWN Weather Summary

Date	Air Temp °F		Rainfall (Inches)	Ave Relative Humidity (Percent)	ET (Inches/Day) (Average)
	Min	Max			
Balm					
2/11 – 3/11/13	31.65	86.83	1.01	75	0.09
Belle Glade					
2/11 – 3/11/13	31.99	87.82	2.31	79	0.1
Clewiston					
2/11 – 3/11/13	34.78	89.08	2.55	75	0.1
Ft Lauderdale					
2/11 – 3/11/13	43.66	89.42	1.65	73	0.1
Fort Pierce					
2/11 – 3/11/13	35.5	87.37	1.08	75	0.1
Homestead					
2/11 – 3/11/13	37.52	86.05	1.35	80	0.1
Immokalee					
2/11 – 3/11/13	31.56	90.34	2.37	77	0.1

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Crops coming to market include cucumbers, eggplant, green beans, herbs, leafy greens, peppers, sweet corn, squash, tomatoes, and various specialty items. Volumes have been moderate and prices have been decent.

The National Weather Service forecast indicates that moist air will come just ahead of the approaching cold front, which could result in some additional cloud coverage and scattered showers over the northern half of the area today.

For the longer term, cooler, drier air is expected in the wake of the frontal boundary with overnight lows dipping into the 40s over the interior locations to the 50s farther east toward the southeast Florida coast, which will be several degrees cooler than normal. Temperatures will begin to moderate back toward normal for the weekend as high pressure builds eastward over the region and the low-level flow shifts to the northeast.

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

Insects

Whiteflies

Growers and scouts around Immokalee report that whitefly pressure is on the increase in most places. Scouts indicate that whiteflies are numerous and viruliferous. Whiteflies are present on tomatoes, peppers, eggplant, squash and melons. Reports indicate growers are spraying like crazy for whitefly control.

Reports from Homestead indicate that whiteflies are abundant in host crops like tomatoes, beans, eggplants and cucurbits among others.

Respondents in Palm Beach indicate that whitefly pressure is moderate with some hot spots being reported.

Reports from the Hillsborough/Manatee area indicate that growers are battling whiteflies in a number of locations. Reports indicate many of these are “hot” and in some instances appear to becoming off fall crops which were not destroyed.

As crops reach completion growers should strive to disrupt the virus-whitefly cycle in winter by creating a break in time and/or space between fall and spring crops, especially tomato by destroying the crop quickly and thoroughly, killing whiteflies and preventing re-growth.

- a. Promptly and efficiently destroy all vegetable crops within 5 days of final harvest to decrease whitefly numbers and sources of plant begomoviruses like TYLCV.
- b. Use a contact desiccant (“burn down”) herbicide in conjunction with a heavy application of oil (not less than 3 % emulsion) and a non-ionic adjuvant to destroy crop plants and to kill whiteflies quickly.
- c. Time burn down sprays to avoid crop destruction during windy periods, especially when prevailing winds are blowing whiteflies toward adjacent plantings.
- d. Destroy crops block by block as harvest is completed rather than waiting and destroying the entire field at one time.

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

Leafminers

Around Immokalee, leafminer pressure remains variable between locations but seems to be declining overall

Reports from the East Coast indicate that leafminer pressure is leveling off in tomato, eggplant and other crops.

Around Homestead, leafminers are present on a variety of crops, but not in damaging levels in most cases. Growers are applying various insecticides and have been effective in keeping populations under control.

In the Manatee/Ruskin area, respondents indicate that some growers are treating for leafminers.

Worms

Around Southwest Florida report indicate that worm pressure has increased slightly and scouts are finding new hatches of beet armyworms, southern armyworms, loopers, fruitworms, melonworms and pickleworms.

Due to widespread spraying for whiteflies, worms have not been a major issue in most places.

In the Manatee Ruskin area, respondents reports some worm activity in tomatoes primarily beet armyworms and pinworms.

Around Palm Beach County reports indicate that worm pressure is mostly low.

Respondents in Homestead report that worm pests (fall armyworm, beet armyworm and diamondback moth) are active on a variety of crops. Diamondback moths are abundant on cabbage. Growers report that *Bacillus thuringiensis* based insecticides alone or in a program have been effective in managing DBM. Coragen applied at planting as a soil drench is providing season-long control of FAW on sweet corn.

Aphids

Growers and scouts around Southwest Florida report that aphids are still around but appear to be slowing down. Colonies have been established in several potato, pepper and eggplant fields.

Respondents report low to moderate aphid pressure in the Homestead area.

Around Palm Beach County, aphid pressure is variable with few winged aphids being reported but aphids remain a problem on a variety of leafy greens.

Because some of the virus diseases transmitted by green peach aphid are persistent viruses, which require considerable time for acquisition and transmission, insecticides can be effective in preventing disease spread in some crops.

Transmission of nonpersistent viruses such as cucumber mosaic virus can sometimes be reduced by coating the foliage with vegetable or mineral oil. Oil seems to be most effective when the amount of disease in an area that is available to be transmitted to a crop is at a low level. When disease inoculum or aphid densities are at high levels, oils may be inadequate protection.

Hundreds of natural enemies have been recorded and these are value in reducing damage potential.

Excessive and unnecessary use of insecticides should be avoided. Early in the season, aphid infestations are often spotty, and if such plants or areas are treated in a timely manner, great damage can be prevented later in the season. In some cases, use of insecticides for other, more damaging insects sometimes leads to outbreaks of green peach aphid.

Softer pesticides including insecticidal soaps such as M-Pede), nicotinoids like Admire, Provado, Assail and others including Beleaf, Movento and Fulfill will provide good control help reduce impact on beneficials.

Resistance to some insecticides has been reported in some aphid populations. Rotating pesticide materials may effectively help slow the development of resistance.

Thrips

Growers and scouts report that western flower thrips population are increasing on a number of farms in Palm Beach and are “bad” in some locations. Crops affected include pepper and eggplants and some tomatoes where respondents report seeing etching on fruit.

Around Homestead, melon thrips are becoming abundant in a number of areas and are causing damage on bean, squash, cucumber, eggplants and pepper. A few flower thrips are present on tomato, squash and bean but numbers remain low and little disease transmission has been reported in these crops.

Regular field scouting is essential as western flower thrips are difficult to detect and control because of their small size and tendency to hide in protected plant parts.

Adults can move long distances on air currents to find new food. Adults and larvae also can be transported on transplants.

Few insecticides are effective in controlling western flower thrips - *F. occidentalis*. The key to managing resistance is to reduce selection pressure by rotating between insecticides with different modes of action and reducing the number of insecticide applications.

Western flower thrips have been known to develop resistance rapidly on repeated exposure to one class of insecticide. If poor control is encountered after an insecticide application, do not simply apply the same product again at a higher rate or shorter spray interval and hope for better control. Determine if poor control resulted from application error, equipment failure or unfavorable environmental conditions during or after application. If none of these occurred, the population may be developing resistance.

Western flower thrips cannot be managed with insecticides alone. Consult UF/IFAS recommendations for currently labeled insecticides for western flower thrips control in Florida vegetables.

Natural enemies, such as minute pirate bugs (*Orius* spp.), lacewings and predatory mites (*Amblyseius* spp.), play an important role in controlling western flower thrips populations. One minute pirate bugs (*Orius* spp.) per 180 WFT will suppress WFT; 1 *Orius* per 50 WFT will keep WFT under control without spraying. Growers should avoid the use of broad spectrum insecticides such as pyrethroids when WFT are present. Broad-spectrum insecticides kill not only western flower thrips, but also natural enemies and harmless native organisms that compete with the pest for resources. The result: After a brief decline in western flower thrips populations, the pest comes back in force, and may develop insecticide resistance.

Cultural methods should not be neglected. Since thrips pupate occur in the soil, new plantings of tomatoes, eggplants, and peppers should not be planted following, near or adjacent to old, infested plantings.

The use of UV reflective mulches which help repel thrips and other insects in combination with reduced risk insecticides has proven an effective way to reduce losses from tomato spotted wilt in tomato.

Research shows that a light application of kaolin clay discourages thrips by making it tough for thrips to feed and breed on pepper leaf tissue.

Pepper Weevils

Growers and scouts report that pepper weevils seem to be established in just about all pepper fields.

Reports from East Coast growing areas indicate that pepper weevils remain mostly low but pressure has been constant.

Low numbers of weevils are present on pepper around Hillsborough County.

Spider mites

Spidermites pressure is increasing in a several locations across south Florida on eggplant, tomatoes and a few cucurbits and they have been treated in a few locations. Flare ups are often due to change in management practices especially use of broad spectrum chemicals, irrigation, etc.

Respondents around Plant City report that mites are increasing on strawberries especially where conventional pesticides are being used but note that mite populations are stable on bio-controlled farms using predator mites.

Broad Mites

Growers and scouts report they are still seeing some broad mite activity in peppers and eggplants around SW Florida with some occasional flare-ups being noted.

On the East Coast, broad mites remain an issue in pepper and to a lesser extent on eggplant.

Low levels of broad mites are also present around Homestead.

Silk Fly

Respondents around Homestead report that silk flies are abundant and are causing significant damage to sweet corn.

Around Belle Glade, growers should be on the lookout for an increase in silk fly numbers in corn fields following the warming of temperatures due to the amount of decaying frost burnt tissue resulting from last week's freeze.

Diseases

Late Blight

Around Immokalee, growers are still battling late blight. Growers and scouts report that late blight has slowed down in general but there are still some new hot-spots flaring up and a few fields have moderate defoliation from late blight. Late blight in potatoes has been much less active.

Reports from the East Coast indicate that mostly low levels of late blight are present in conventional tomatoes but note that incidence is high in a number of organic fields.

Respondents indicate that late blight is also present on some tomatoes in Homestead.

Reports also indicate that late blight was present in Osceola and Brevard counties before the cold weather hit. With the disease possibly being that far north and it would be good for North and Central Florida growers to be on the lookout for late blight.

Dr. Pam Roberts at UF/IFAS SWFREC reports that initial characterization of late blight isolates from this area this season appears to be the US-23 genotype

This type is sensitive to mefenoxam although two out of twenty isolates were identified as intermediate in our lab assays. None of the LB isolates have been resistant to mefenoxam thus far which is consistent with the US-23 genotypes. The most recent finds were from Homestead area and east coast.

Growers would be well advised to scout susceptible crops carefully as foggy mornings with cool nights and warm days) are conducive to disease development.

Late blight is caused by the fungus *Phytophthora infestans*, which is a pathogen of potato and tomato. This disease can spread quickly and devastate a tomato or potato field within a few weeks if not properly controlled.

The disease thrives under cool and wet conditions. Temperatures between 50 and 80 F combined with moist conditions such as rain, fog, heavy dews, or relative humidity above 90 percent are conducive for disease development. Night temperatures in the mid-fifties with daytime temperatures from the mid-fifties to mid-seventies are ideal for this disease.

Since the disease can spread so rapidly, growers should scout their fields thoroughly each day, especially when cool and wet conditions conducive to disease development prevails.

Late blight symptoms on leaves appear as irregularly shaped brown to purplish lesions with indefinite border lesions that can span veins. The lesions may be seen any time of day, on any stage of plant growth and on leaves of any age. Velvety, white fungal growth may appear on the lower surface of affected leaflets early in the morning before leaves dry and/or in the lower canopy.

On stems, purplish lesions may be found anywhere on the stem. Cottony, white growth of fungus on stems with lesions can often be seen early in the morning and/or in the lower canopy. Stems with lesions are brittle and break easily. Lesions are confined to epidermis and cortex. Leaf rolling and wilting is often associated with stem lesions and purpling of leaflets may occur in some varieties.

Begin a spray program with fungicides if late blight is in your area or weather conditions are suitable for late blight development. After harvest, kill infected foliage to minimize tuber infection.

Spray coverage and application frequency are critical to staying to ahead of late blight. Younger fields that are rapidly growing are at greater risk. Tomatoes between 2nd and 3rd tie are frequently the size tomatoes that get into trouble.

Tomato growers should purchase disease-free transplants. Observe your fields thoroughly each day, especially when cool and wet weather prevails.

Currently, fungicides are the most effective means of controlling late blight and will remain the primary tool until cultivars with resistance to this disease become available. Fungicides slow the rate at which the disease develops in the field by creating a protective barrier on the foliage.

Just applying a chemical, however, does not necessarily equate with effective disease control. Relative effectiveness of a product, coverage, and timing must be factored into the equation for maximum benefit.

Numerous fungicide products are registered for late blight control. Protectants, as the name implies, protect foliage from infection by spores. Protectant chemicals must be well distributed over the leaf surface and must be applied before spores land on leaves. They are ineffective against established infections.

PROTECTIVE applications of chlorothalonil are your first line of defense for managing late blight. Timing is critical - applications must be made when conditions are conducive for disease development and before infection occurs!!!

Systemic products become distributed locally within plant tissues and protect foliage from infection by spores. They may kill some established infections and may suppress production of new spores. Even a short break in spray schedules, despite what is said regarding some of the newer fungicides, can result in a dramatic increase in blight under the conditions we have had during the past two weeks.

Fungicides for Late Blight

Product	Brand Name	FRAC Number
chlorothalonil	many brands	M5
maneb/mancozeb	many brands	M3
cyazofamid	Ranman	21
cymoxanil	Curzate	27
strobilurins	Quadris, Cabrio, Flint	11
fluopicolide	Presidio	43
famoxadone + cymoxanil	Tanos	11 + 27
mandipropamid	Revus	40
Dimethomorph	Acrobat, Forum	40
mefenoxam**	Ridomil	4
propamocarb	Previcur Flex	28
zoaxamide + mancozeb	Gavel	22 + M3

** Resistance documented in many races

Consult current UF/IFAS recommendations for labeled fungicides for the control of late blight.

In Florida, it has been observed that seldom does a widespread late blight epidemic occur on tomatoes in the Manatee-Ruskin area unless the disease was present in the Immokalee area and/or Dade County. Since late blight has been confirmed in in both locations, growers in other areas are advised to adhere to a preventative spray program.

See USABlight for more info and photos - <http://usablight.org/lateblight>

Lettuce downy mildew

Lettuce downy mildew is present and increasing on lettuce in the Glades. Dr Rick Raid, Pathologist at EREC advises everyone growing lettuce to be on a PREVENTATIVE program. The phosphites are good tools but should be used in a program with maneb and other compounds that are more efficacious against downy mildew.

The list of fungicides currently labeled for lettuce downy mildew control includes maneb, fosetylAl, metalaxyl, and several copper compounds along with several newer compounds such as Actinovate, Presidio, Previcur Flex, Reason, Revus, and Tanos, that have been added to growers control options.

Resistance in *B. lactucae* to the fungicide metalaxyl was reported in Florida during 1989, and therefore its efficacy may be somewhat reduced. Due to downy mildew demonstrated ability to develop resistance, growers are advised to rotate chemistries to avoid problems - FRAC numbers on labels will help avoid using similar active ingredients repeatedly.

Basil Downy Mildew

Basil downy mildew has also been very active around South Florida. Growers must be on a preventative program, protecting the crop soon after emergence and regularly thereafter. Quadris, Ranman, and the phosphites are the best labeled products, and an effective program will likely need all three, as sprays must be at least weekly, perhaps more often with heavy pressure.

Growers should be aware of a new foliar disease (*Alternaria* blight) which has been reported on basil in South Florida. See below.

Downy Mildew of Crucifers

Dr Rick Raid reports that downy mildew is rampant on cole crops including cabbage, broccoli, arugula and others and advises growers to begin spraying early with phosphonics and other labeled products.

Infections begin as irregular yellow patches on leaves; these chlorotic lesions later turn tan to light brown. If conditions are favorable, white fluffy growth of the fungus develops on the undersides of leaves. If disease development is extensive, leaves may take on a blighted effect as a result of numerous infection sites. Systemic infections can cause internal black streaks and patches to form in stems and floret branches of broccoli and cauliflower. Early symptoms on transplants may resemble bacterial leafspot symptoms. Severely diseased seedlings may be stunted or die.

The fluffy growth on leaves produces sporangia that are easily disseminated by wind and water to other plants, resulting in rapid disease development under suitable environmental conditions. The sporangia are short lived, but the fungus also produces resting spores, called oospores, that can survive from one season to another in crop residue or soil.

The disease is controlled by rotation to non-cruciferous crops, control of cruciferous weeds (such as mustards, winter cress, shepherdspurse, london rocket) tolerant varieties and the timely application of fungicides. Fungicide applications are very effective if applied early. Fungicides should be alternated to reduce development of resistance.

Downy Mildew of cucurbits

Around Homestead, respondent indicate that downy mildew has been severe on some cucurbits.

Growers and scouts in SW Florida report that downy mildew is present in watermelons and cucurbits at mostly low levels.

Growers and scouts in the Palm Beach area report downy mildew is present in squash and cukes.

Early symptoms include angular chlorotic lesions on the upper surface of the leaf – these often appear water soaked when observed from below early in the morning.

Downy mildew is favored by:

- Cooler Temps 59-77°F
- High relative humidity (> 90%)
- Periods of extended leaf wetness including heavy morning dew and foggy mornings

Spores are easily dispersed by wind and rain.

Dr Vallad advises that downy mildew is showing resistance to a number of chemicals including the strobilurins (Quadris, Cabrio, and Flint), fluopicolide (Presidio), mandipropamid (Revus), dimethomorph (Acrobat, Forum) and mefenoxam (Ridomil).

Cyazafamid (Ranman), cymoxanil (Curzate), propmacarb (Previcur Flex) and zoaxamide+maneb (Gavel) remain good choices to rotate with protectant fungicides such as chlorothalonil and mancozeb.

Alternaria on Basil

Dr Richard Raid, Pathologist at UF/IFAS EREC reports finding new very aggressive Alternaria blight on basil around South Florida. He reports that this disease is possibly seed-borne.

Reports in the literature indicate that in the summer-autumn 2010, basil plants belonging to the cv Genovese grown soilless and in open field in Piedmont (Northern-Italy) showed symptoms of a new leaf spot. Affected plants showed black-brown leaf spot normally circular, usually 1 to 50 mm in diameter surrounded by a yellow halo, frequently located on the tips and margins of leaves. At later stages leaves may turn brown and die. *Alternaria* sp. was consistently isolated from leaf tissues of symptomatic plants. The ITS region of rDNA of the isolate was amplified using the primers ITS1/ITS4 and sequenced. The 523 bp segment obtained showed that the pathogen belongs to *Alternaria alternata*.

This is the first report of *Alternaria alternata* on basil in Italy and in Europe. Recently the same pathogen has been described on basil in Japan. It is not yet known if this is the same disease.

Sclerotinia

Growers and scouts report that sclerotinia continues to affect lettuce producers around Belle Glade.

Around Immokalee, sclerotinia has reared back up some tomatoes although not as bad as earlier in the season.

A common indicator of Sclerotinia diseases is the presence of white, cottony-like mycelium of the fungus when weather conditions are cool and moist.

Another good indicator of Sclerotinia diseases is the presence of small, black sclerotia (resting structures) of the fungus. Sclerotia can form on the surface of plant parts as well as inside the stems of pepper and tomato. The sclerotia enable the fungus to survive from season to season and are the source of inoculum to infect crops.

Management Methods:

Four to five weeks of flooding of fields that have a history of Sclerotinia diseases during the summer rainy season may help reduce the numbers of viable sclerotia, thereby reducing the amount of disease in succeeding crops.

Recycled irrigation tail water may move sclerotia to fields where sclerotia are not present.

Timing is also a critical issue of fungicide applications is critical and growers should try to apply during periods of long cool, wet weather which is also favorable for other foliar pathogens.

In beans, fungicides including DCNA/dicloran (Botran 5F), PCNB (Blocker 4F), boscalid (Endura), Iprodione (Rovral 4F, Nevado 4F, and Enclosure 4), fluazinam (Omega 500 F), cyprodinil/fludioxinil (Switch), and thiophanate methyl (Topsin) applied at bloom stage have been effective in controlling white mold.

Boscalid (Endura), DCNA/dicloran (Botran 5F), Iprodione (Rovral 4F, Nevado 4F, Enclosure 4), and cyprodinil/fludioxinil (Switch) have been used with good results in lettuce.

For potato, Boscalid (Endura), DCNA/dicloran (Botran 5F), PCNB (Terraclor F), Iprodione (Rovral 4F, Nevado 4F, and Enclosure 4), fluazinam (Omega 500 F), and thiophanate methyl (Topsin M WSB) are recommended for Sclerotinia control.

In tomato, choices are limited to azoxystrobin (Heritage, Quadris) and pyraclostrobin (Cabrio) and Priaxor (a premix of Cabrio and fluxapyroxad) on tomato and pepper. Unfortunately use of these products may exacerbate problems with target spot. Thiophanate methyl (Topsin) used to be labeled (SLN) on tomato but is not anymore. The other SDHI fungicides (Endura, Fontellis) work well at suppressing Sclerotinia, but are not specifically labeled for Sclerotinia on tomato and pepper yet.

Biologicals like Contans WG, Regalia, Rhapsody, Serenade Max and Sonata are also labeled and may provide various degrees of control alone or in combination with other fungicides. Contans WG is specifically aimed at limiting the seasonal carryover of sclerotia and must be applied prior and following the cropping season...it will not provide much control once the crop is in the ground.

Target Spot

Low levels of target spot continues to show up on tomato in a number of locations around South Florida and is moving up into lower plant canopies in a number of places.

Target spot is widely present in tomato fields around SW Florida and continues to defoliate some mature tomatoes from the inside out.

Target spot remains mostly low on the East Coast.

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.

As we move later into the season and plant canopies develop, we often see target spot take over from bacterial spot as the predominant foliar problem in tomatoes.

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

Dr. Gary Vallad Pathologist at UF/IFAS GCREC advises growers not to use strobilurins for target spot management due to widespread resistance to strobes and notes that in some instances it can actually make disease worse. Gary also advises seeing some early signs of resistance to SDH inhibitors. These include Endura, Fontelis, Luna and Priaxor.

Bacterial Spot

Around Immokalee, growers and scouts report that bacterial spot infections flared up on tomato and pepper fields following recent rains but note that cooler weather has helped slow things down.

Respondents in Palm Beach County report low levels of new bacteria on beans and tomato behind recent rains. Bacterial spot is also continuing to creep along in older pepper fields where it is established.

Around Homestead, bacterial spot is widely present in tomato and pepper.

Alternaria

Growers and scouts report seeing more Alternaria (black mold) on older tomato around South Florida.

Powdery Mildew

Powdery mildew is widespread on squash, cucumbers and beans in Palm Beach and Immokalee. Reports indicate that pressure has increased in recent weeks and is high in older squash. Growers have reported good results with Torino fungicide on squash.

Low levels of powdery mildew have also been reported on peppers, tomatoes and eggplants on both coasts.

Respondents report that powdery mildew is also causing problems on cucurbits in Homestead.

With cucurbit powdery mildew is kicking into gear in many locations, a broad spectrum protectant such as chlorothalonil should prove useful along with some of the more effective powdery materials, alternating or tank-mixing these depending on pressures and susceptibilities.

Powdery mildew traditionally becomes an increasing problem on watermelon as the season progresses so growers should be on the lookout as we move into warmer drier weather.

On watermelon, leaves may yellow from powdery mildew growing on the bottom side of the leaf. In Florida, it is often difficult to detect the powdery mycelia without a microscope and often yellowing foliage is the only symptom visible to growers. Cucurbit powdery mildew in some areas has become resistant to strobilurin and DMI fungicides. The recommended fungicides for powdery mildew are Quintec, Pristine, or Switch.

Gummy Stem Blight

Growers are reporting low levels of gummy stem blight on watermelon and cucumbers around South Florida.

Fusarium

Growers and scouts in the Manatee Ruskin area report lots of issues with Fusarium wilt since temperatures have warmed up. Incidence in some fields has reached high levels of incidence (40 – 60% in some places).

Fusarium is also becoming common on tomatoes around Immokalee.

Rust

Growers and scouts are reporting low levels of rust on green beans around Belle Glade.

Northern Corn Leaf Blight (NCLB)

Dr Rick Raid, Pathologist at UF/IFAS EREC reports that northern corn leaf blight (NCLB) is present and increasing on sweet corn in the Glades.

Triazoles and strobilurins both give control, with some of the pre-mixtures of these two classes giving superior control.

NCLB produces a long, elliptical lesion, while those of northern corn leaf spot tend to be shorter, oblong, and sometimes target like in appearance.

Tomato Yellow Leaf Curl Virus

Around Immokalee, TYLCV is widely present but seems to be either really bad or not much of a problem with little in between. There are hotspots with near 100% symptoms scattered around. Occurrence of TYLCV distribution seems match up pretty closer with areas where whiteflies have been a problem.

Growers and scouts in Manatee/Hillsborough are also facing TYLCV issues and reports indicate that some farms in Wimauma and the Myakka area are experiencing fairly high infection levels.

Reports indicate that TYLCV is present at low levels in Palm Beach County.

Respondents indicate that TYLCV is increasing in Homestead.

Groundnut Ringspot Virus

Growers and scouts are reporting finding low levels of mostly scattered single plants infected with GRSV around South Florida.

Tomato Chlorotic Spot Virus

Very low levels of tomato chlorotic spot virus (TCSV) continue to be found around South Florida.

Tomato chlorotic spot virus 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. The genus of Tospoviruses takes its name from the discovery of the Tomato spotted wilt virus (TSWV) in Australia in 1915.

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. The symptoms are nearly identical to those of groundnut ringspot virus and laboratory diagnosis is necessary to distinguish on from the other.

Bean Golden Mosaic

Bean Golden Mosaic Virus is present on beans around Homestead.

Cucurbit leaf crumple virus

Low levels of cucurbit leaf crumple virus is showing up in watermelons around Southwest Florida.

News You Can Use

Happy 100th Anniversary of the Haber-Bosch process

Early in the 20th century German Chemist Fritz Haber developed the first practical process to convert atmospheric nitrogen to ammonia, which is nutritionally available to plants. He was awarded the Nobel Prize in Chemistry in 1918 for this work. Haber's work with nitrogen fixation was said, "To make bread available out of air." Today, fertilizer generated by the Haber process is estimated to be responsible for sustaining one-third of the earth's population."

New Tomato Suspension Agreement with Mexico

Fresh tomatoes imported from Mexico have been governed by suspension agreements since 1996. On March 4, 2013, a new Tomato Suspension Agreement went into effect. The agreement suspends the antidumping investigation into whether Mexican tomatoes were being sold into the U.S. market at less than fair value.

The new tomato suspension agreement approved by Mexican growers representing 85% of exports to the U.S. became official on March 4, a little over a month after the department proposed increases to floor prices on Mexican tomatoes.

Spurred by the Florida tomato industry's allegations about Mexico dumping product below production cost, the agreement sets floor prices for Mexican tomatoes during the summer and winter, with four price levels covering open field/adapted environment, controlled environment production, and loose and packed specialty tomatoes.

For some products, the floor price more than doubled. The previous floor prices for all Mexican tomatoes — whether grown in fields, greenhouses or shadehouses — was 21.69 cents per pound in the winter and 17.2 cents per pound in the summer.

The agreement sets new prices:

- Open-field and “adapted-environment” tomatoes are 31 cents per pound in the winter and 24.58 cents per pound in the summer.
- Controlled-environment tomatoes are 41 cents per pound in the winter and 32.51 cents per pound in the summer.
- Loose specialty tomatoes are 45 cents per pound in the winter and 35.68 cents per pound in the summer.
- Packed specialty tomatoes have minimum prices of 59 cents per pound in the winter and 46.79 cents per pound in the summer.

So far this year, a cold winter in Mexico has kept the lid on volumes and most of the markets have held above the floor prices.

Watermelon Diseases and Control Tips.

Gummy stem blight often starts on old leaves near the crowns of plants inside the rows. Leaf spots are dark brown and start on leaf edges. The gummy stem blight fungus in southeast is largely resistant to strobilurins (Group 11 fungicides), Topsin M, and Pristine. Growers should use tebuconazole, Inspire Super, or Switch in place of Pristine to manage gummy stem blight. However, do not make more than three applications of Group 3 fungicides per season to reduce the risk of resistance.

Leaf spots of anthracnose are smaller and more angular (pointed) than gummy stem blight spots. Look for ½ to 1-inch-long narrow, reddish brown spots on the vines. Anthracnose fruit rot starts as round, sunken spots that usually are found on the belly of the fruit. Cabrio is the best fungicide to spray for anthracnose; Topsin M also controls it.

Powdery mildew appears during dry spells near harvest as white powdery spots on the top or bottom of leaves. Often, leaves may yellow from powdery mildew growing on the bottom side of the leaf. In Florida, it is often difficult to detect the powdery mycelia without a microscope and often yellowing foliage is the only symptom visible to growers. Cucurbit powdery mildew in some areas has become resistant to strobilurin and DMI fungicides. The recommended fungicides for powdery mildew are Quintec, Pristine, or Switch.

Downy mildew can spread very quickly after infection on unsprayed crops. Chlorothalonil and mancozeb provide some protection from initial infection, but they are not enough to stop downy mildew once it starts in a field. Cucurbit downy mildew is resistant to Ridomil Gold and strobilurin (Group 11) fungicides. Apply fungicides specific for downy mildew as soon as it is found.

1) Spray Early. Start with protectant chemicals as soon as transplants are set in the ground.

2) Rotate Fungicide Products. There are two basic types of fungicides: protectant (or contact fungicides) and systemic (fungicides that are absorbed by leaves). Use a protectant for the first several sprays. Use systemic fungicides mid- to late season, when their ability to get into leaves is useful during wet periods. Do not make more than three applications of Group 3 fungicides per season to reduce the risk of resistance.

3) Spray Schedule - match the spray schedule to fit general weather conditions. During wet periods, spray every 5 to 7 days. Spray mancozeb every 5 days during wet humid weather. Spray intervals may be increased

during dry conditions. The new chlorothalonil label limits the spray interval to 7 days for watermelon. If leaves stay wet for 48 hours, apply a systemic fungicide.

Apply fungicides before a predicted rain or wet conditions (fogs, heavy dews) rather than after. As long as the fungicide dries on the leaves before rain starts, it will protect plants from new infections.

Excerpted from a piece by Dr Tony Kenaith, Clemson University on the National Watermelon Growers Association website

MANDATORY SOIL FUMIGANT TRAINING FOR CERTIFIED APPLICATORS

Vegetable growers wishing to use fumigants in the future should be aware that updated soil fumigant product labels, which came out on Dec 1, 2012, **requires**, as a condition of use, certified applicators to successfully complete an EPA- approved training program. This training must be completed before you can legally apply fumigants bearing the new label.

Below is a link to a webpage includes the EPA-approved registrant soil fumigant training programs, as well as state-specific EPA-approved alternatives to the registrant training programs. Currently the web based EPA training program is the only option for Florida growers.

EPA required registrants to develop and implement training programs for certified applicators supervising soil fumigant applications. This training must be completed every 3 years.

EPA-approved training program for certified applicators using methyl bromide, chloropicrin, chloropicrin and 1,3-dichloropropene, dazomet and metam sodium and potassium

<http://www.fumiganttraining.com/>

EPA-approved training program for certified applicators using dimethyl disulfide (DMDS)

<http://paladin.trainingmine.com/>

This page includes approved training programs and links to other resources for soil fumigant certified applicators, and approved Fumigant Safe Handling information for soil fumigant handlers. (NOTE: Fumigant product labels include the following link to this web page

http://www.epa.gov/pesticides/reregistration/soil_fumigants/soil-fum-handlers.html#certified

The site also contains fumigant specific training for methyl bromide, chloropicrin, 1,3-dichloropropene, and dazomet.

Employers and the Affordable Care Act.

Several growers are wondering how so-called Obama Care may affect them.

The Employer Mandate to provide insurance for workers is right now slated to begin 1-1-2014. Several other provisions of the health care law have already had their deadlines “moved back,” so this date may or may not be the effective date for employers to provide health care to workers. The indications are for a business to be considered an “Eligible Employer” you must have over 50 workers, who work more than 30 hours a week, and more than 120 days in a calendar year.

There is some discussion about part time workers being added together to become Full Time Equivalent (FTE’s) toward your total worker number. If you are mandated (meet the criteria) to provide health care for

your workers, then you can only charge them up to 9.5% of their gross salary for the insurance premium. If you assume a \$350 weekly paycheck, you can then only charge back for the insurance \$33 weekly.

It is currently uncertain what new insurance coverage will cost. Folks on Medicaid and workers that already have health insurance through another program can opt out of your policy. Your regular workers can refuse to participate in the health care program (which some will do when they find out you'll be taking money out of their checks) but if they do – they will get a \$750 penalty when they file their taxes for 2014.

If you are deemed to be an “Eligible Employer” and do not provide your workers health insurance, the fines levied against you are very steep (indicated to be \$2,000 per employee per year).

This promises to be a major issue for Ag employers and at present no one knows for sure what growers will need to do! Here's the best source of info on the whole business of the 1-1-2014 Employer Mandate for health insurance. A lot of reading – but delivered in a good format.

<http://www.irs.gov/uac/Affordable-Care-Act-Tax-Provisions>

This is the IRS web site. Remember this is more of a tax issue than anything to do with health care. If you currently have a group health policy for your business you should talk to that agent. If not, you should probably contact your CPA.

Will try to keep you informed about this issue – but for some parts of the law, they still haven't written the rules yet!

<http://www.irs.gov/pub/newsroom/reg-138006-12.pdf> - some more info

Up Coming Meetings

March 19, 20, 2013 Core and Private Applicator Training and Exams

Manatee County Extension Service
Parish, Florida

Core 10am-12pm March 19, Private 10am-12pm March 20, Manatee County Extension Service, Palmetto, FL. Two separate exam prep classes will be held to help you prepare for the Core and Private Applicator RUP license exams. Exams will be offered immediately following the classes. However, you do not have to take the exams the same day. You may schedule a time to take the exams at your convenience. You may take one class without the other, if needed.

If you are already a license holder, 2 CEUs in Core and 2 in Private are offered for both classes, respectively. Light snacks will be offered. For details and registration visit: <http://coreprv121012.eventbrite.com/>

March 18-19, 2013 2013 Hydroponics Short Courses - or March 22-23, 2013

UF/IFASSuwanee Agricultural Extension Center
Live Oak, Florida

Details to be announced

March 26, 2013 Strategies for Minimizing Salinity Problems and Optimizing Crop Production

Agenda:

1. 1:00-1:15 Pre-test
2. 1:15-1:25 Mr. Scott Taylor – Welcome and Introductions
3. 1:25-1:40 Dr. Dan Cantliff – Overview of Program
4. 1:40-2:10 Dr. Jeff Ullman – Soil Salinity in Agricultural Systems: The Basics
5. 2:10-2:40 Dr. Mark Clark – Sources of Salinity in Irrigation Water and Strategies to Minimize
6. 2:40-3:10 Dr. Lincoln Zotarelli – Fertilizer as a Source of Salinity on Potato Production
7. 3:10-4:00 Dr. Stephan Grattan (UC-Davis) – Strategies to Minimize Crop Loss under Saline

Conditions

8. 4:00-4:30 Dr. Brian Boman – Minimizing fruit crop loss caused by saline stresses
9. 4:30-4:50 Post-test and survey
10. 4:50 Adjourn.

Available statewide through polycom at participating REC's and Extension Offices

March 27, 2013 Irrigation Workshop

8:30 AM – 1:30 PM

UF/IFAS Southwest Florida Research and Education Center
SR 29 N
Immokalee, Florida

This meeting will focus on a number of aspects of successful irrigation management. To register, call 863-674-4092 or email dcabrera@ufl.edu

April 5, 2013

Food Safety Update for Cantaloupe Growers:

9:30am-3:30pm

What do the new developments mean to me?

UF/IFAS Gulf Coast Research and Education Center.
Wimauma, Florida

Detailed agenda to follow. Please contact Alicia Whidden to register at awhidden@ufl.edu or 813-744-5519 ext. 54134

For the Record....

Pesticide Registrations and Actions

• Based on a request by IR-4, the EPA has approved a pepper (bell and non-bell) tolerance for the insecticide thiacloprid (Calypso®).

Opportunities

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

National Commodity-Specific Food Safety Guidelines for Cantaloupes and Netted Melons

<http://www.cantaloupe-guidance.org/sites/default/files/docs/Natl%20Cantaloupe%20Guidance.pdf>

EPA-approved Fumigant training program for certified applicators using methyl bromide, chloropicrin, chloropicrin and 1,3-dichloropropene, dazomet and metam sodium and potassium -

<http://www.fumiganttraining.com/>

EPA-approved training program for certified applicators using dimethyl disulfide (DMDS) -

<http://paladin.trainingmine.com/>

Quotable Quotes

“Normal is an illusion. What is normal for the spider is chaos for the fly” - Morticia Addams.

Most of the important things in the world have been accomplished by people who have kept on trying when there seemed to be no hope at all. - Dale Carnegie

Feeling sorry for yourself, and your present condition, is not only a waste of energy but the worst habit you could possibly have. - Dale Carnegie

Develop success from failures. Discouragement and failure are two of the surest stepping stones to success. - Dale Carnegie

Flaming enthusiasm, backed up by horse sense and persistence, is the quality that most frequently makes for success. - Dale Carnegie

Courage is what it takes to stand up and speak; courage is also what it takes to sit down and listen. - Winston Churchill

On the Lighter Side

Old Guy and a Bucket of Shrimp

This is a true story, Hope you appreciate it and want to pass it along.

It happened every Friday evening, almost without fail, when the sun resembled a giant orange and was starting to dip into the blue ocean.

Old Ed came strolling along the beach to his favorite pier. Clutched in his bony hand was a bucket of shrimp. Ed walks out to the end of the pier, where it seems he almost has the world to himself. The glow of the sun is a golden bronze now.

Everybody's gone, except for a few joggers on the beach. Standing out on the end of the pier, Ed is alone with his thoughts...and his bucket of shrimp.

Before long, however, he is no longer alone. Up in the sky a thousand white dots come screeching and squawking, winging their way toward that lanky frame standing there on the end of the pier.

Before long, dozens of seagulls have enveloped him, their wings fluttering and flapping wildly. Ed stands there tossing shrimp to the hungry birds. As he does, if you listen closely, you can hear him say with a smile, 'Thank you. Thank you.'

In a few short minutes the bucket is empty. But Ed doesn't leave. He stands there lost in thought, as though transported to another time and place.

When he finally turns around and begins to walk back toward the beach, a few of the birds hop along the pier with him until he gets to the stairs, and then they, too, fly away. And old Ed quietly makes his way down to the end of the beach and on home.

If you were sitting there on the pier with your fishing line in the water, Ed might seem like 'a funny old duck,' as my dad used to say. Or, 'a guy who's a sandwich shy of a picnic,' as my kids might say. To onlookers, he's just another old codger, lost in his own weird world, feeding the seagulls with a bucket full of shrimp.

To the onlooker, rituals can look either very strange or very empty. They can seem altogether unimportant maybe even a lot of nonsense.

Old folks often do strange things, at least in the eyes of Boomers and Busters.

Most of them would probably write Old Ed off, down there in Florida . That's too bad. They'd do well to know him better.

His full name: Eddie Rickenbacker. He was a famous hero back in World War II. On one of his flying missions across the Pacific, he and his seven-member crew went down. Miraculously, all of the men survived, crawled out of their plane, and climbed into a life raft.

Captain Rickenbacker and his crew floated for days on the rough waters of the Pacific. They fought the sun. They fought sharks. Most of all, they fought hunger. By the eighth day their rations ran out. No food. No water. They were hundreds of miles from land and no one knew where they were.

They needed a miracle. That afternoon they had a simple devotional service and prayed for a miracle. They tried to nap. Eddie leaned back and pulled his military cap over his nose. Time dragged. All he could hear was the slap of the waves against the raft..

Suddenly, Eddie felt something land on the top of his cap. It was a seagull!

Old Ed would later describe how he sat perfectly still, planning his next move. With a flash of his hand and a squawk from the gull, he managed to grab it and wring its neck. He tore the feathers off, and he and his starving crew made a meal - a very slight meal for eight men - of it. Then they used the intestines for bait. With it, they caught fish, which gave them food and more bait.....and the cycle continued. With that simple survival technique, they were able to endure the rigors of the sea until they were found and rescued (after 24 days at sea...).

Eddie Rickenbacker lived many years beyond that ordeal, but he never forgot the sacrifice of that first life-saving seagull... And he never stopped saying, 'Thank you.' That's why almost every Friday night he would walk to the end of the pier with a bucket full of shrimp and a heart full of gratitude.

Reference: (Max Lucado, "In The Eye of the Storm", pp..221, 225-226)

PS: Eddie started Eastern Airlines.

The Bagpiper

As a bagpiper, he played many gigs. Recently he was asked by a funeral director to play at a graveside service for a homeless man. He had no family or friends, so the service was to be at a pauper's cemetery in the back country. Not being familiar with the backwoods, he got lost and, being a typical man, didn't stop for directions.

The bagpiper finally arrived an hour late and saw the funeral guy had evidently gone and the hearse was nowhere in sight. There were only the diggers and crew left and they were eating lunch.

He felt badly and apologized to the men for being late. He went to the side of the grave and looked down and the vault lid was already in place. Not knowing what else to do, he started to play.

The workers put down their lunches and began to gather around. He played his heart and soul out for this man with no family and friends. He played like he never played before for this homeless man.

And as he played 'Amazing Grace,' the workers began to weep. They wept, he wept, and they all wept together. When he finished he packed up his bagpipes and started for his car. Though his head hung low, his heart was full.

As he opened the door to my car, he heard one of the workers say, "I never seen nothin' like that before and I've been putting in septic tanks for twenty years."

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.

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