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SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

January 8, 2013

A strong cold front just before Christmas dropped temperatures in some of the normally cooler interior locations into the low 30's. FAWN Weather Stations reported that temperatures dipped below freezing in some locations in South Florida for a brief period on the morning of December 23. Palmdale recorded a low of 29 degrees and Immokalee - 30 degrees. Growers reported frost in a number of locations. Damage was reported on some sensitive crops such as beans, cucumbers and squash in a few locations and growers also reported some damage to the tops of tomatoes and other vegetables around interior Collier/Hendry/Glades counties.

Conditions have been mostly dry although some places did see some rain this past weekend. Foggy mornings have kept diseases active. Temps this past week have been unseasonably warm.

FAWN Weather Summary

Date	Air Temp °F		Rainfall	Ave Relative Humidity	ET (Inches/Day)
	Min	Max	(Inches)	(Percent)	(Average)
Balm					
12/16/12 – 1/8/13	33.11	82.13	1.47	81	0.05
Belle Glade					
12/16/12 – 1/8/13	33.21	84.52	0.32	84	0.06
Clewiston					
12/16/12 – 1/8/13	35.44	84.78	0.59	83	0.06
Ft Lauderdale					
12/16/12 – 1/8/13	43.70	84.13	0.12	76	0.06
Fort Pierce					
12/16/12 – 1/8/13	35.29	82.83	0.75	81	0.06
Homestead					
12/16/12 – 1/8/13	38.94	83.75	0.01	82	0.06
Immokalee					
12/16/12 – 1/8/13	30.15	87.60	0.25	81	0.06

Wishing you all the best for a Happy, Healthy and Prosperous New Year

Crops coming to market include cucumbers, eggplant, green beans, herbs, leafy greens, peppers, sweet corn, squash, tomatoes, and various specialty items. Fall crops have pretty much finished up in the Manatee Ruskin area as the center of production moves to south Florida. Volumes have been moderate and prices have been favorable. Growers report some increases in culls from small, cat faced and cracked fruit along with wind/cold burn resulting from the cold weather in December.

The National Weather Service extended forecast indicates that a strong mid/upper level high will build from the Bahamas across south Florida, which will gradually dry out the atmosphere as well as keep temperatures warm with highs reaching into the 80s (the upper 80s in a few spots over interior Collier county) and lows will remain a good 10-15 degrees above normal. High temperature records could be broken in interior and western areas of South Florida.

Increasing low level winds will likely limit fog formation over the next few days. Breezy east/southeast winds will prevail Wednesday through Thursday, making it feel not as hot as temperatures/dew points would suggest.

Little change is forecast through the upcoming weekend...as the subtropical high prevails and unseasonably warm temperatures continue. East/southeasterly winds will keep conditions mostly dry with no more than a slight shower chance. Models indicate this pattern will persist into the early part of next week.

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 in report that whitefly pressure has increased significantly in several areas around Southwest Florida over the past few weeks as adults migrate from old fields which are being terminated. Whiteflies are moving into newly planted fields rapidly in many areas including new watermelon plantings. Counts range from low of 1/plant to as many as 30/plant (in some cases on small plants, less than 2 weeks in ground).

Reports from Homestead indicate that whitefly numbers are high in a number of crops

Reports from Palm Beach indicate that whitefly numbers are generally low but are increasing on tomato, beans, pepper eggplant, and other crops in some places.

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 activity continues to increase and is severe in some places while in others it seems to have subsided and scouts report increased beneficial activity. Numbers have reached threshold levels and growers are treating tomatoes in a number of places.

Some reports indicate that while Coragen is still working it seems to be missing some and growers report uptake appears to be affected by cold weather. Field reports indicate that Trigard is still performing well.

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

As we approach the time of year that leafminers become more prevalent, growers and scouts should be aware that leafminer populations tolerant to chlorantraniliprole, the active ingredient in Coragen and other products, have been detected in a number of places including SW Florida.

Dr. Phil Stansly, Entomologist at UF/IFAS SWFREC writes it is important to realize, that Coragen, just like all other insecticides, is subject to selection for resistance.

Phil advises that it is a good rule of thumb not to use it more than once in a crop and not to apply it to successive generations of pests. Coragen is a terrific product and as such has been used frequently by many growers. The result is that we are seeing some tolerance to the product cropping up in vegetable leafminer populations. The best strategy would be to not make that second application of Coragen or any other product containing chlorantraniliprole such as Voliam Flexi or Durivo or other group 28 products such as Belt. In addition, he reminds growers that the next generation of group 28 products containing cyantraniliprole will soon be available but could likely be compromised by the over-exposure of pest populations to chlorantraniliprole.

Aphids

Growers and scouts around Southwest Florida report that aphids are still around but note that pressure has eased up over the past few weeks.

Respondents report high aphid numbers on host crops around the Homestead area.

Around Palm Beach County, winged aphids remain active in a variety of crops including tomatoes, cilantro and other herbs as well as variety of leafy greens.

As aphid densities increase on host plants, winged forms are produced, which then disperse to alternate hosts. Winged green peach aphids attempt to colonize nearly all available host plants. They often deposit a few young and then again take flight. This highly dispersive nature contributes significantly to their effectiveness as vectors of plant viruses.

In Florida, this cycle repeats continuously, though in the northern areas of the state the aphid development rate slows greatly during the winter.

The life cycle varies considerably. Development can be rapid, often 10 to 12 days for a complete generation, and over 20 annual generations per year may occur in mild climates.

Parthenogenic reproduction is favored where continuous production of crops provides suitable host plants throughout the year, or where weather allows survival on natural (noncrop) hosts. The average temperature necessary for survival of active forms of green peach aphid is estimated at 4 to 10º C. Plants that readily support aphids through the winter months include beet, Brussels sprout, cabbage, kale, potato, and many winter weeds.

Broadleaf weeds can be very suitable host plants for green peach aphid, thereby creating pest problems in nearby crops. Common and widespread weeds such as field bindweed, lambsquarters, and redroot pigweed are often cited as important aphid hosts

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.

<u>Worms</u>

Around Southwest Florida report indicate that worm pressure continues to be patchy and with scouts finding new hatches of southern and beet armyworms, fruitworms hornworms and loopers. A few pinworm eggs have also been reported in tomato.

Reports from the Glades indicate that fall armyworm worm are active and pressure remains steady.

Around Palm Beach County reports indicate that warmer temps over the past few weeks have resulted in an increase in armyworm egg laying activity and new hatches on a range of crops.

<u>Broad Mites</u>

Broad mites continue to flare up in peppers and eggplants around SW Florida, possibly due to warmer temperatures.

On the East Coast, broad mites remain a problem in pepper and to a lesser extent on eggplant. They have reached moderate to high levels in a number of places.

Pepper Weevils

Growers and scouts report that pepper weevil is now established in several pepper around SW Florida and have reached serious levels in some older pepper and are now beginning to show up into younger plantings.

Reports from East Coast growing areas indicate that pepper weevils are still hard to find in most places.

Cornsilk fly

Around Belle Glade, reports indicate that cornsilk fly activity is highest around the lake. Respondents note that maggots have become an issue where spray coverage was poor along field edges (~20% infestation); otherwise infestation remains below 10%.

Around Homestead, reports indicate that cornsilk fly is present on alternate hosts.

Dr. Gregg Nuessley, Entomologist at UF/IFAS EREC advises that he is very concerned that if growers don't make changes now to their pyrethroid use in sweet corn that they will have very few to no alternatives to control cornsilk flies in corn in the very near future.

He advises that when using a pyrethroid during ear stage sweet corn, always use the maximum labeled rate. Never use below label rates for pyrethroids at any time in sweet corn. Do not add pyrethroids to another chemical unless it is directly needed for control of something that the other product does not control. If growers need to control armyworm or earworm, but no cornsilk flies are present, then they should not use pyrethroids to control these Lepidoptera, because there are many alternative choices.

Growers need to eliminate the use of "insurance sprays" of pyrethroids, because the continuous low residual levels of pyrethroids on corn are leading to resistance development in cornsilk flies to pyrethroids. If there were many other products for control of these flies, then this would not be as critical.

However, there is only one other material that provides good control of the flies and that is the organophosphate, chlorpyrifos. While some contact control is provided by methomyl, this product has no residual control of the cornsilk flies. To conserve the remaining effectiveness and to try to regain previous levels of effectiveness of pyrethroids, growers must eliminate unnecessary pyrethroid treatments.

Thrips

Growers and scouts report that thrips are beginning to show up on some farms in Palm Beach. Respondents report finding a mix of thrips species, including western flower thrips. Reports indicate that western flower thrips have reached 1-3 per bloom in the worst areas.

Elsewhere, thrips remain low.

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 repeal 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.

Spider mites

Spidermites pressure is increasing in a several locations across south Florida on eggplant, tomatoes and a few cucurbits.

Stinkbugs

Respondents indicate that a few stinkbugs and leaf-footed bugs causing some damage to tomatoes and peppers around South Florida. They are more problematic on organic farms as many conventional growers are spraying so hard for whiteflies that the few stinkbugs that might come around are being controlled.

Diseases

Late Blight

Late blight has reared its ugly head in Southwest Florida. On January 3, Leon Lucas of Glades Crop Care reports that they had found late blight in a potato field near Immokalee and that it had been confirmed in the lab by Dr Pam Roberts at SWFREC. Since that time there have been a several unconfirmed grower reports of late blight on tomato in Collier and Hendry Counties and Dr Roberts has also received a positive sample on tomato.

Growers would be well advised to scout susceptible crops carefully as the weather of the past few days (rain, foggy mornings with cool nights and warm days) have been conducive to disease development.

Looking back at past occurrences in the Immokalee area, we have seen the disease start up around this time several times over the last 15 years perhaps aided by attenuated spray schedules and reduced vigilance around the Holidays.

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.

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 Immokalee, growers in other areas are advised to adhere to a preventative spray program.

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

Northern Corn Leaf Blight (NCLB) and Northern Corn Leaf Spot (NCLS)

Dr Rick Raid, Pathologist at UF/IFAS EREC reports that northern corn leaf blight (NCLB) and northern corn leaf spot (NCLS) are now very active on sweet corn. These diseases are caused by two different species of fungi and even though a variety may have resistance to NCLB, it may still be susceptible to NCLS.

Spot is usually not as aggressive as blight, and it usually tapers off as the plant expands and matures, opposite of what happens with blight. However, in some instances it may get severe enough to warrant control on its own. Triazoles and strobilurins both give control, with some of the pre-mixtures of these two classes giving superior control.

NCLB has a long, elliptical lesion, while those of NCLB tend to be shorter, oblong, and sometimes target like in appearance.

Sclerotinia

Growers and scouts report that sclerotinia continues to affect a variety of crops across South Florida in recent weeks.

Reports indicate that from Palm Beach sclerotinia is taking off several pepper farms and also in eggplant, tomato, basil and dill. Several respondents indicate that it is probably as bad early in the season in some places as respondents have ever seen.

Sclerotinia is also present on tomato and pepper around SW Florida.

Reports from the Glades indicate that sclerotinia is also starting to show up in leaf crops. Recent rainfall, foggy morning and heavy dews have all been conducive to development. Lettuce drop caused by the fungus *Sclerotinia sclerotiorum* can be a serious problem in fields that have not been flooded during the previous fallow season.

Dr Rick Raid, Pathologist at UF/IFAS EREC reminds growers that control for this disease must be preventative, with applications being made prior to and following thinning, to treat the soil beneath the canopy. He stresses that the program needs to be preventative. Once plants start going down in the field, it is most likely too late.

The fungus, *Sclerotinia sclerotiorum*, is responsible for a number of vegetable diseases attacking a wide range of crops. Common names for Sclerotinia diseases in Florida are white mold (beans), drop (lettuce), white mold (pepper, potato and tomato), and nesting (post-harvest disease of bean).

A good indicator of Sclerotinia disease 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.

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

Symptoms vary between crops. White mold in beans usually appears after flowering. The disease often appears in leaf axils and advances into the stem, producing water-soaked spots that increase in size, girdling the stem, and killing it above the point of infection. The disease can also enter the plant through leaves or pods that touch the soil where sclerotia or infected plant parts act as inoculum.

In tomato, potato and pepper, infection typically starts at flowering. Water-soaked spots are usually the first symptom, which is followed by invasion of the stem, girdling, and death of the upper part of the stem that turns a light gray. The disease can also begin where the plant contacts the soil or infected plant debris. Large portions of the field may become diseased, producing large, circular, areas of dead plants. The black sclerotia formed by the fungus are often found inside infected stems.

Almost all Sclerotinia diseases are field diseases, but when they occur in post-harvest situations they can be very damaging. In beans, the fungus may create a mass of diseased pods that is stuck together by fungal growth, resembling a nest (hence, the name "nesting").

Under cool moist conditions, the fungus is capable of invading a host plant, colonizing nearly all of the plant's tissues with mycelium. Optimal temperatures for growth range from 15 to 21 degrees Celsius. Under wet conditions, *S. sclerotiorum* will produce an abundance of mycelium and sclerotia. The fungus can survive in the soil mainly on the previous year's plant debris.

High humidity and dewy conditions supports the spread and increases the severity of infections.

The fungus produces a survival structure called a sclerotium either on or inside the tissues of a host plant. When conditions are favorable, the dormant sclerotia will germinate to produce fruiting bodies. These produce ascospores, which then germinate on the host and begin to invade the host's tissues via mycelium, causing infection. *S. sclerotiorum* is capable of invading nearly all tissue types including stems, foliage, flowers, fruits, and roots. Once a plant is infected white mycelium will grow on the surface of the infected tissues. At the end of the season, sclerotia are produced. The sclerotia will then remain on the surface of the ground or in the soil, on either living or dead plant parts until the next season.

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.

The use of plastic mulch may suppress Sclerotinia diseases, while high plant populations may increase the incidence.

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 fluxapryoxad) 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.

<u>Target Spot</u>

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.

Target spot remains 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.

<u>Bacterial Spot</u>

Around Immokalee, growers and scouts continue to find new bacterial spot infections on tomato and note that some pepper fields are also being hit pretty hard.

Respondents on the East Coast report that bacterial spot has increased in pepper and tomato with warmer wetter weather.

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

<u>Downy Mildew</u>

Around SW Florida, downy mildew continues to cause problems in cucurbits especially cucumbers but has slowed down in recent days as powdery mildew has increased.

Growers and scouts in the Palm Beach area report they are now finding downy mildew 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^{o}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.

Lettuce downy mildew

Lettuce downy mildew has NOT yet been reported, but all growers are reminded to be on a preventative program and should contact Dr. Raid should they see an occurrence. He will then alert all lettuce growers and discuss more intensive programs as required. This procedure has virtually eliminated losses due to this disease over the last decade.

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.

Cercospora leaf spot has also cropped up on basil, and is best controlled with azoxystrobin.

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.

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

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.

Dr. Gary Vallad notes that the new Gowan product, Torino, will be a great management tool for powdery mildew, especially on edible-peel cucurbits where Quintec can't be used.

Scouts in Palm Beach County report finding powdery mildew on eggplant for first time this season. They also report finding some powdery mildew on pepper. Incidence and occurrence is low.

Gray Mold

Growers and scouts around Immokalee are reporting some amount of botrytis or gray mold on tomatoes.

Gray mold is caused by the fungus *Botrytis cinerea*. Symptoms include: wedge-shaped grayish-brown lesions develop on older leaves. Large elliptical, water-soaked lesions may occur on stems, becoming grayish-tan in color. A gray fungal growth is often evident on infected tissue during cool moist weather.

Fruit are often infected at the stem end or shoulder and develop water-soaked spots which display a light brown to tan central region. Infected fruit decay rapidly. If there is a rapid weather change (not favorable to the fungus), fruit infections may abort resulting in ghost rings (Ghost spot symptoms) which develop on fruit in this situation.

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.

Tomato Yellow Leaf Curl Virus

Around Immokalee, TYLCV incidence has been increasing rapidly with 10 -40% incidence being reported in a number of places including some young tomato not even pruned. . A few respondents indicate it has reached 50% incidence or more in some places.

In the Manatee Ruskin area, tomato yellow leaf curl virus is widespread. Reports indicate that it has reached as high as 80% in spots in some of the older plantings but in general is closer to 20-30% in many older fields and less than 2% in many younger plantings.

Reports indicate that TYLCV is present at low levels in Palm Beach County and is increasing in Homestead

Mosaic

Mosaic has reached high levels in several older squash fields around Immokalee, which may result in some serious virus pressure in spring watermelons.

News You Can Use

Proposed Rule under FSMA for Produce: Standards for the Growing, Harvesting, Packing, and Holding of Produce for Human Consumption

Summary: FDA has released for public comment its proposed rule to establish science-based standards for growing, harvesting, packing and holding produce on domestic and foreign farms. The proposed rule for preventive controls for human food is being published at the same time. The proposed rules build on existing voluntary industry guidelines for food safety, which many producers, growers and others currently follow. These are two of the proposed rules that are key to the preventive food safety approach established by the 2011 FDA Food Safety Modernization Act. Soon, FDA will issue its proposed rule on foreign supplier verification; future proposed rules will address preventive controls for animal food, and accreditation of third-party auditors for imported food.

The proposed produce rule sets science-based standards for the safe production and harvesting of fruits and vegetables to minimize the risk of serious adverse health consequences or death. FDA proposes to set standards associated with identified routes of microbial contamination of produce, including: (1) agricultural water; (2) biological soil amendments of animal origin; (3) health and hygiene; (4) animals in the growing area; and (5) equipment, tools and buildings.

The proposed produce rule covers most fruits and vegetables while they are in their raw or natural (unprocessed) state. It would not apply to raw agricultural commodities that are rarely consumed raw, those produced for personal or on-farm consumption, and (with certain documentation) those destined for commercial processing, such as canning, that will adequately reduce microorganisms of public health concern.

Some farms would not be covered by the rule, or would be eligible for a partial exemption based on factors including the monetary value of their food sales and to whom they sell. The partial exemption would still apply certain modified requirements to eligible farms, and could be withdrawn in certain circumstances.

FDA is proposing that the requirements be effective 60 days after a final rule is published in the Federal Register. Recognizing that small and very small businesses may need more time to comply with the requirements, compliance dates would be phased in based on business size.

Comments on the proposed rule are due within 120 days of the rule's publication in the Federal Register. FDA will hold public meetings to explain the proposal and to provide additional opportunity for input.

See proposed rule at http://www.ofr.gov/OFRUpload/OFRData/2013-00123_PI.pdf

New Adverse Effect Wage Rates for 2013

New Adverse Effect Wage Rates for 2013 published were published in the Federal Register on Jan 8, 2013. The new AEWR effective today for FL is now $9.97.

DEPARTMENT OF LABOR

Employment and Training Administration
Labor Certification Process for the Temporary Employment of Aliens in Agriculture in the United States: 2013 Adverse Effect Wage Rates

AGENCY: Employment and Training Administration, Department of Labor.

SUMMARY: The Employment and Training Administration (ETA) of the Department of Labor (Department) is issuing this notice to announce the 2013 Adverse Effect Wage Rates (AEWRs) for the employment of temporary or seasonal nonimmigrant foreign workers (H-2A workers) to perform agricultural labor or services.

AEWRs are the minimum wage rates the Department has determined must be offered and paid by employers to H-2A workers and workers in corresponding employment for a particular agricultural job and area so that the wages of similarly employed U.S. workers will not be adversely affected. 20 CFR 655.100(b).

Go to http://www.gpo.gov/fdsys/pkg/FR-2013-01-08/html/2013-00117.htm to see entire notice.

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, due out on Dec 1, 2012, **will require**, 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.

Fumigant distributors will require proof of this training prior to shipping phase II labeled products. Beginning Dec 1, the above listed products will be packaged with Phase II labels.

Registrant-Developed Training Materials for Certified Applicators

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.

Up Coming Meetings

January 14, 2013 **Fumigant Training and Exam Program**

Gulf Coast Research and Education Center
Wimauma, Florida

The program will begin at 8:00am and end at 5:00pm or whenever testing is complete.

Lunch will be sponsored by Mike Herrington of AMVAC.

Presentations will be delivered by Dr. Joe Noling, and Mike Herrington.

Please RSVP to Crystal at crys21@ufl.edu no later than this Thursday Jan 10 at 5pm. CEUs pending approval.

If you have specific questions about the training please contact Mike Herrington at:

mikeh@amvac-chemical.com
Off (863) 291-4637
Cell (863) 412-2067

January 17, 2013 **Farm Labor Supervisor Training - Transporting Workers** **9 am – 2 pm**

Turner Agri-Civic Center
Arcadia, Florida

This 4-hour training session covers legal compliance for vehicles that transport farm workers, primarily focused on Florida Highway Patrol (previously FDOT) regulations plus DOL and DBPR transportation requirements. Content includes rules for CDL-required buses and high-capacity vans, plus car-pooling and van safety issues. Specifically, the class will cover: DOT, DOL and DBPR licensing, authorizations and required insurance; markings and postings; Driver Qualification Files; explanation of tracking Hours of Service; and information about DOT-approved Drug & Alcohol testing programs.

INSTRUCTOR: Trooper Tracey McQuilken, Florida Highway Patrol
WHO SHOULD ATTEND: Transportation supervisors, primary contractors and administrative staff responsible for transportation compliance.
COST: $25.00 including lunch. Attendees will receive a Certificate of Attendance for 4 hours toward completion of the Farm Labor Supervisor Training program.
TO REGISTER: Contact Marcela Rice at 239-658-3400 or email mlrice@ufl.edu by January 10, 2013.

January 28, 2013 **Compost Use in Agriculture, Horticulture and Landscaping**

21th USSC Annual Conference and Trade Show
Buena Vista Palace Hotel & Spa
Orlando, Florida

For more details go to http://compostingcouncil.org/

February 7, 2013 **Pesticide License Exam Prep and Testing**

Core – 7:45 AM – Noon
Private – 1 – 5 PM

Hendry County Extension Office
1085 Pratt Boulevard
LaBelle, Florida 33935

Cost is $10 per class - $20 for all day.

Contact Debra to register: 863-673-5939 or email dcabrera@ufl.edu

February 27- 28, 2013 **HACCP for Florida Fresh Fruit and Vegetable Packinghouses**

Room 2 & 3
Ben Hill Griffin Building Citrus Research and Education Center
700Experiment Station Rd
Lake Alfred, FL 33850

Sponsored by Food Science and Human Nutrition Department and the Citrus Research and Education Center, University of Florida, IFAS

ABOUT THE PROGRAM

Food Safety is critical to the fresh produce industry. In addition to being a major public health issue, food safety issues have had an adverse economic impact on growers, packers, processors and shippers of fresh produce.

In addition to a discussion of current and proposed legislation, the latest research on produce safety and Good Manufacturing Practice (GMPs), the workshop will cover the elements of putting together a comprehensive food safety program.

The hands on course will teach participants how to develop and document a food safety management program based on the principles of Hazard Analysis and Critical Control Point (HACCP) for their specific operations.

Breakout sessions are structured to teach participants how to identify and prevent food safety hazards, monitor hazard reduction procedures, develop control measures and methods to document and verify the results of their efforts.

The workshop is targeted to produce packers, to assist in the development and customization of food safety programs for their facilities, using a HACCP- based approach.

PACKINGHOUSE HACCP PROGRAM AGENDA

Wednesday February 27th

8:00 Registration

8:30 Welcome

Introduction to Food Safety and the HACCP System Hazards

Prerequisites to HACCP – GAPs, GMPs, SOPs, SSOPs

Hazard Analysis (Principle 1)

Identification of Critical Control Points (Principle 2)

Establishment of Critical Limits (Principle 3)

Critical Control Point Monitoring (Principle 4)

5:00 Adjourn

Thursday February 28th

8:00 Coffee
8:30 Review
Corrective Actions (Principle 5)
Verification (Principle 6)
Recordkeeping (Principle 7)

Regulations – Food Safety Modernization Act

HACCP Review

HACCP Exam

5:00 Adjourn
INSTRUCTORS

Michelle Danyluk - Assistant Professor UF IFAS CREC
Renee Goodrich Schneider - Associate Professor UF IFAS FSHN
Keith Schneider Hazards - Associate Professor UF IFAS FSHN

LOCATION

Lake Alfred is easily accessible from either the Orlando or Tampa airports. You can access a map and more information about the center at www.crec.ifas.ufl.edu

Lodging is available in the nearby towns of Haines City, Auburndale or Winter Haven, FL.

REGISTRATION

The fee for the course is $400 for industry participants. A reduced fee of $300 is available for government/academic employees that make prior arrangements.
Registration will be limited to the first 36 registrants.

Registration includes the course materials, two lunches, coffee breaks and certificate of completion. Participation for the entire 2 days is required for the certificate.

Registration Form

This Form may be used for more than one person at the same organization. Substitutions are acceptable. Course enrollees should be familiar with the basic principles of food safety.

Florida Packinghouse HACCP Workshop, CREC, February 27 and 28, 2013.

Name_____
Company_____
Address_____
City_____
State_____
Zip_____
Email_____
Phone_____
Amount Enclosed_____
Check #_____

Course Registration of $400 ($300 for gov't/academic employees) is requested by February 1st, 2013. Registration will be confirmed upon receipt of registration materials. **Important: Make checks payable to "University of Florida – FSHN"**

Mail Registration to:

Michelle Danyluk
CREC,
700 Experiment Station Rd.
Lake Alfred, FL, 33850

mddanyluk@ufl.edu
863-956-865

March 12, 2013 **2nd Vegetable and Small Fruit Protected Ag Field Day and IV Protected Ag Information Network Congress.** **8 am to 4 pm**

UF/IFAS GCREC
14625 CR 672
Wimauma, FL 33579

Find out more on the latest research efforts on protected culture of tomato, pepper, strawberry, blackberry and herbs.

Registration is free – Register today at http://protectedagfieldday.eventbrite.com

Opportunities

J & J Produce, Inc. is seeking to hire 3 account executives and interested in recent graduates, who have a degree in Agriculture and a drive to sell. They have positions in FL, TN and WI.

Send resume to:

Rosita Laljie, SPHR
Director of Human Resources
J & J Produce, Inc.
Phone 561-383-5473
Fax 561-383-5478
Email| rosita@jjproduce.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

Growers Wanted

Leathers Melon Company, Inc. is currently searching for watermelon growers for the upcoming 2013 spring watermelon season. You may contact Jim @ 573-275-6109 or Joey @ 239-410-6403 or the office @ 863-675-6722.

Websites

USA blight is a new national website that will act as an information portal on late blight. You can report disease occurrences, submit a sample online, observe disease occurrence maps, and sign up for text disease alerts. There are also useful links to a decision support system, and information about identification and management of the disease. Check it out at http://usablight.org/

Proposed Rule under FSMA for Produce: Standards for the Growing, Harvesting, Packing, and Holding of Produce for Human Consumption - http://www.ofr.gov/OFRUpload/OFRData/2013-00123_PI.pdf

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/

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

Any fool can criticize, condemn and complain – and most fools do. But it takes character and self-control to be understanding and forgiving. - Dale Carnegie

Never lend your car to anyone to whom you have given birth. - Erma Bombeck

Don't find fault, find a remedy. - Henry Ford

Age is a very high price to pay for maturity. - Tom Stoppard

A diplomat is a man who always remembers a woman's birthday but never remembers her age. - Robert Frost

Old age is like everything else. To make a success of it, you've got to start young. - Theodore Roosevelt

America will never be destroyed from the outside. If we falter and lose our freedoms, it will be because we destroyed ourselves. - Abraham Lincoln

On the Lighter Side

The deaf bookeeper

A Mafia Godfather finds out that his bookkeeper, Guido, has cheated him out of US$10,000,000.

His bookkeeper is deaf. That was the reason he got the job in the first place. It was assumed that Guido would hear nothing, so he would not have to testify in court.

When the Godfather goes to confront Guido about his missing US$10 million, he takes along his lawyer who knows sign language.

The Godfather tells the lawyer, "Ask him where the money is!". The lawyer, using sign language, asks Guido "Where's the money?"

Guido signs back, "I don't know what you are talking about."

The lawyer tells the Godfather, "He says he doesn't know what you're talking about." The Godfather pulls out a pistol, puts it to Guido's head and says, Ask him again or I'll kill him!"

The lawyer signs to Guido, "He'll kill you if you don't tell him."

Guido trembles and signs, "OK! You win! The money is in a brown briefcase, buried behind the shed at my Cousin Bruno's house.

The Godfather asks the lawyer, "What did he say?"

The lawyer replies, "He says you don't have the guts to pull the trigger."

Don't you just love lawyers?

A Dog's Purpose?

A veterinarian had been called to examine a ten-year-old Irish Wolfhound named Belker. The dog's owners, Ron, his wife Lisa, and their little boy Shane, were all very attached to Belker, and they were hoping for a miracle.

The vet examined Belker and found he was dying of cancer. He told the family he couldn't do anything for Belker, and offered to perform the euthanasia procedure for the old dog in their home.

As he made arrangements, Ron and Lisa told me they thought it would be good for six-year-old Shane to observe the procedure. They felt as though Shane might learn something from the experience.

The next day, the vet felt the familiar catch in his throat as Belker's family surrounded him. Shane seemed so calm, petting the old dog for the last time, that he wondered if he understood what was going on. Within a few minutes, Belker slipped peacefully away.

The little boy seemed to accept Belker's transition without any difficulty or confusion. They all sat together for a while after Belker's Death, wondering aloud about the sad fact that animal lives are shorter than human lives. Six year old Shane, who had been listening quietly, piped up, "I know why."

Startled, they all turned to him. What came out of his mouth next stunned them. They'd never heard a more comforting explanation. It has changed the way I try and live.

He said, 'People are born so that they can learn how to live a good life -- like loving everybody all the time and being nice, right?" The Six-year-old continued, ''Well, dogs already know how to do that, so they don't have to stay as long."

Remember, if a dog was the teacher you would learn things like:

When loved ones come home, always run to greet them.

Never pass up the opportunity to go for a joyride.

Allow the experience of fresh air and the wind in your face to be pure Ecstasy.

Take naps.

Stretch before rising.

Run, romp, and play daily.

Thrive on attention and let people touch you.

Avoid biting when a simple growl will do.

On warm days, stop to lie on your back on the grass.

On hot days, drink lots of water and lie under a shady tree.

When you're happy, dance around and wag your entire body.

Delight in the simple joy of a long walk.

Be loyal.
Never pretend to be something you're not.

If what you want lies buried, dig until you find it.

When someone is having a bad day, be silent, sit close by, and nuzzle them gently.

Live simply - Love generously - Care deeply - Speak kindly.

There comes a time in life, when you walk away from all the drama and people who create it. You surround yourself with people who make you laugh, forget the bad, and focus on the good. So, love the people who treat you right. Think good thoughts for the ones who don't. Life is too short to be anything but happy. Falling down is part of LIFE...Getting back up is LIVING...

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.

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