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E X T E N S I O N

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SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

February 27, 2004

Heavy rains resulting from a slow-moving frontal boundary affected most parts of South Florida over the past few days. All regions reported significant amounts of rainfall for the period ranging from just over an inch in some places to more than 3 inches in others. Fog mornings and heavy dews have also been commonplace over the past few weeks.

Temperatures have been variable with most areas averaging from near normal to a few degrees above or below normal on any given day. Daytime temperatures have been in the 60's, 70's and low 80's with nighttime lows ranging in the low 60's 50's, and a few nights in the 30's and 40' s in normally colder areas. Scattered frost in the Manatee/Ruskin area reportedly caused some leaf burn on tender crops in colder areas.

Mostly clear weather helped keep planting, harvest and cultural operations on schedule across the area although wet weather over the last 48 – 72 hours has resulted in some delays in a number of locations. Watermelon planting continues around Immokalee and transplanting in West Central Florida is in high gear, including tomatoes, peppers, cabbage and some watermelons.

FAWN Weather Summary

Date	Air Temp (°F)		Rainfall (Inches)	Hours Below Certain Temperature (hours)							
	Min	Max		40°F	45°F	50°F	55°F	60°F	65°F	70°F	75°F
Bradenton											
2/9 – 2/26//04	37.8	80.6	4.00	9.6	0.4	8.4	5.0	15.3	36.7	1.5	69.0
Ft Lauderdale											
2/9 – 2/26//04	49.4	85.2	1.21	0.0	0.0	5.5	13.1	6.3	5.7	45.6	0.2
Fort Pierce											
2/9 – 2/26//04	41.9	84.5	2.79	0.0	14.1	5.4	1.9	18.7	12.8	18.1	46.5
Homestead											
2/9 – 2/26//04	45.9	82.8	1.63	0.0	0.0	6.0	3.1	11.0	20.0	69.5	9.0
Immokalee											
2/9 – 2/26//04	37.0	83.9	2.53	6.7	6.9	2.5	1.1	21.4	35.7	18.1	28.5

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Crops coming to market include snap beans, cabbage, celery, cucumbers, eggplant, endive, escarole, lettuce, peppers, potatoes, radishes, squash, strawberries, sweet corn, tomatoes, and specialty crops. Potato digging is underway in south Florida production areas. Quality is mostly good although some irregular ripening associated with whiteflies has been reported.

The short-term forecast from the National Weather Service in Miami indicates that lingering low-level clouds blanketing the region will move out by this evening as cool dry air pushes into the area. Lows will be in the 40's on Saturday morning but temperatures will moderate rapidly. Forecast for next week is for mostly clear skies with highs in the 70's and 80's and nighttime lows around 60.

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

Insects

Insect pressure is mostly low but respondents are beginning to note some seasonal increase in activity.

Whiteflies

Respondents in the Manatee/Ruskin report big increases in whitefly adults in some areas. Phyllis Gilreath notes that most "old" tomato crops have finally been destroyed but not before contributing to significant increases in whitefly populations and virus in adjoining and/or nearby young tomato plantings. TYLCV infestations are quite variable but have been reported as high as 10% in some blocks near old fields.

Scouts in West-Central Florida have reported finding banded wing whitefly in fairly high numbers (1.5 per plant) in one field. Reports indicate that after treatment with Capture at 5-ounce rate, only silverleaf whiteflies could be found. Banded wing whitefly are not considered to be a treatable pest unless numbers are high enough to cause honeydew/sooty mold problems as they do not vector TYLCV. The reason for the high numbers in this field has not been determined, but banded wing whitefly have been reported on aeschynomene and sunflower, while both hemp sesbania and hairy indigo have also sustained populations of the banded wing in research in other parts of the country. It may be that a nearby cover crop was serving as a source. Phyllis notes that growers have expressed increased interest in oils and soaps for whitefly control as chemical control materials that fit in a resistance management program are somewhat limited. Some growers have noted good results against adults using a mixture of the citrus oil product Prev-Am with Thiodan.

Reports from growers and scouts in Southwest Florida indicate that whitefly pressure has increased and with many locations currently finishing harvest in several fields and potato crops being desiccated growers can probably expect the whitefly pressure to remain for some time. In some tomato fields around Naples and Immokalee, scouts report that whitefly numbers have gone wild with counts of ten whiteflies per plant along with the presence of significant numbers of pupae as well. Growers and scouts also report increased pressure in other crops including pepper, potato and cucurbits in recent weeks noting increases in the numbers of whitefly adults and nymphs in a number of places.

East Coast growers report some increase in whitefly pressure but not that numbers remain variable depending on location with some hot spots being reported. Whiteflies are present in eggplant, pepper, squash and tomatoes. Pressure has been persistent in squash and some silverleaf is being reported in places.

Reports from Miami-Dade County indicate that whitefly pressure is increasing in a variety of crops including beans, cucurbits, potato and tomato. Scouts indicate that there has been an accompanying increase in the incidence of bean golden mosaic virus as well as tomato yellow leaf curl virus.

Growers are reminded to maintain vigilance and keep up whitefly control measures to avoid a buildup of whiteflies and prevent the movement of infected whiteflies carrying TYLCV into the spring crop.

In older plantings growers should strive to maintain control of adults with oils, soaps and materials OTHER THAN nicotinoids. A strong emphasis should be placed on PROMPT destruction, block by block, as harvest is completed, including oil with herbicide for quick burndown and control of existing whiteflies in those blocks, thus minimizing movement out to other blocks.

Remember that a big part of an effective resistance management program is not following an application of a nicotinoid with another application (soil or foliar) of the same or different nicotinoid. Please think twice before doing this!! While they may work now, then what? What will you use next time? There are NO new adulticides coming down the pipe, at least not in the near future. While you may feel you have no alternatives right now, the nicotinoids may be the only thing standing between a decent crop and disaster. If we were to lose the nicotinoids to resistance, we likely would not be able to grow tomatoes in South Florida.

Aphids

Respondents in Homestead indicate that aphids are widely present in beans, cucurbits, potatoes and tomatoes and note that pressure has increased in recent weeks.

Aphid pressure is increasing around Southwest Florida with winged aphids showing up in bean cucurbits, pepper, potato, and tomato. Growers also note an increase in aphid activity in specialty brassicas. Scouts report that aphid numbers in some places in the Immokalee area have nearly doubled this past week, and that a number of fields have reached treatable levels with significant colony development being detected in potato, tomatoes and some peppers.

A few winged aphids are being reported on crops in West Central Florida and are present in cabbage and tomatoes in low numbers.

Reports from Palm Beach indicate that tomato and pepper growers have been battling aphids and have done a respectable job keeping them under control. Pressure has also been persistent in squash and specialty crops including oriental brassicas.

Dr. Gregg Nuessly; Entomologist at UF/IFAS Everglades Research and Education Center reports that aphids have been building in leafy and cabbage type crops around Belle Glade and are currently one of the biggest pest problem in leafy vegetables at this time. Turnip and green peach aphids, as well as the large brown aphid or red lettuce aphid (*Uroleucon pseudambrosiae*) are very numerous now. Growers with sensitive crops should be on the look out for aphids. Control treatments for aphids should be made before the population gets out of control and definitely before leafy and cole crops cup and lock the aphids in away from contact and translaminar type insecticides.

Leafminers

Reports from the Bradenton area indicate increased leafminer activity, especially adults, with recent warm weather. Scouts report finding stippling on plants that have only been in the ground 2-3 days.

Growers and scouts in the Homestead area report problems with leafminer mainly in young tomatoes.

Around Southwest Florida reports indicate that leafminer pressure is variable with several respondents noting some decrease in activity in recent days. In general most reports indicate that pressure is somewhat below what might be considered normal for this time of the season. Crops affected include beans, cucurbits, tomatoes and specialty crops.

Respondents on the East Coast indicate that leafminer pressure has been persistent in a number of areas. Affected crops include crucifers and cucurbits in addition to tomatoes. For a lot of the crucifers, leafminers will mine the cotyledons and older leaves some, but will not affect the marketable "head" leaves. Reports indicate that growers have been obtaining fairly good control with Spintor when used before populations get out of hand but note that some growers have had to apply Triguard where pressure was high.

Dr Gregg Nuessly, Entomologist UF/IFAS EREC reports that *Liriomyza* leafminers are requiring treatment in leafy vegetables in the Belle Glade area. He notes that growers with sensitive crops should be on the look out for leafminers and reminds growers that leafminers can sneak up on growers during the winter, particularly when the temperature is cool for several weeks followed by a warming trend. The cooler temperatures tend to collapse the partially overlapping generations onto each other. Then when it warms significantly the adults emerge en masse and can at least temporarily overwhelm the natural enemies ability to keep them under control. Therefore, growers and scouts should check their fields for leafminer escapes.

Thrips

Respondents in Homestead continue to report problems with thrips in a variety of crops including beans, cucurbits, eggplant, pepper and potato. Reports indicate that thrips pressure has been heavy in pepper.

Reports indicate that thrips populations are beginning to build in east coast production regions. Indications are that these are mostly flower thrips although some isolated reports of *Thrips palmarum* damage on pepper including fruit etching and stem damage continue to be received.

Around Manatee County, reports indicate that thrips activity has increased moderately in recent days and is expected to jump as citrus blooms are swelling and will likely be blooming soon, especially after the recent rain.

Thrips populations are increasing around southwest Florida. Populations are mostly low but a few reports indicate finding higher numbers of mostly flower thrips along with associated dimpling or stippling on fruits. Citrus is approaching full-bloom in many areas of southwest Florida and growers should monitor crops as numbers can increase rapidly as thrips populations often build up in citrus at this time and move into susceptible vegetables.

Worms

Growers and scouts in the Homestead area report increasing worm pressure in a variety of crops including beans, corn, cucurbits, potato and tomato. Reports indicate that loopers and fruitworms are the widely present in beans, worm pressure is heavy in corn and that armyworms, loopers, fruitworms are common in eggplant, potato and tomato.

Around Southwest Florida, worm pressure remains fairly low. In the past week, however some scouts report finding both beet and southern armyworm egg masses as well as some fruitworm eggs in the Immokalee area, in what are the highest numbers so far of the current winter/spring season. Some increase in southern armyworm activity has also been noted in the Naples area.

In the Manatee/Ruskin area southern armyworm egg masses have been noted in many tomato fields along with a few looper eggs. Low levels of armyworms and diamondback moth are also present in cabbage in West Central Florida.

Gregg Nuessly reports that diamondback moth in the Everglades Agricultural Area typically ramps up beginning the first or second week of February through the remainder of the cabbage season, and this

year is proving to be no exception. Growers are also finding some diamondback larvae in collards and other brassicas around Southwest Florida.

Jim Conner at the UF/IFAS Southwest Florida Research and Education Center in Immokalee reports picking up lots of tomato pinworm moths in pheromone traps at the center. Growers and scouts also report that pinworms are starting to be found in a few tomato fields around Southwest Florida. Growers should be aware that tomato volunteers and regrowth in double crop watermelons could allow pinworms (as well as leafminer and whiteflies) to build up affecting nearby fields. To avoid problems, volunteers and regrowth should be scouted and controls applied as necessary.

Mites

Growers and scouts on the East Coast report increasing occurrence of two-spotted and red spider mites primarily in eggplant but respondents also report problems with mites in tomato and specialty items especially along field margins and ditch banks. Reports indicate that broadmites are still present in pepper and eggplant in low numbers in several locations.

Around Southwest Florida, reports indicate that spider mites are widely present on cucurbits. Low levels of spider mites have also been detected in eggplant and a few tomato fields with some reaching treatable levels. A few broadmites are present in peppers and eggplants.

Reports from Homestead report that red and two spotted spider mites are becoming more numerous in a variety of crops including beans, cucurbits, eggplant, strawberries and tomatoes. Broadmites are widely present in eggplant and pepper with some heavy pressure being reported in places on peppers.

Strawberry producers in West Central Florida report that mite populations are building up but overall pressure has been low this season. Mites are also beginning to show up in young melons. Growers are hopefully that recent rains may slow pressure temporarily.

Pepper Weevils

Respondents around southwest Florida indicate that pepper weevils have been detected in a few more pepper fields but report that overall pressure remains low with a few exceptions.

Growers and scouts on the East Coast report scattered pepper weevil activity. Numbers remain low in most places.

Around Homestead, respondents report pepper weevils populations are beginning to increase and scouts report increased trap counts over the past few weeks.

Silk Fly

Respondents in Homestead indicate silk fly pressure remains moderate to high in sweet corn. Scouts report finding a few silk fly maggots in ears around field edges.

Diseases

Growers and scouts report recent rainy weather has increased disease pressure in a number of areas. Foggy mornings and heavy dews have helped sustain favorable conditions for disease development.

Late Blight

Late blight remains active on tomato and potato in the Immokalee area and has been reported in a few more places. Incidence and occurrence remain mostly low. Several respondents report that prior the rains of the past few days, incidence of new infections appeared to have slowed somewhat. The weather of the past few days may change this picture dramatically.

Around Southwest Florida, late blight has also been reported in the Naples area over the past few weeks. Reports indicate that the disease has been active and has spread to adjacent blocks from where it was initially diagnosed.

Few diseases spread as quickly as late blight. The disease can easily devastate a tomato or potato field within a few weeks if it is 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. Temperatures in the lower range stimulate the formation of many swarm spores (zoospores) from the sporangia. This situation dramatically increases the potential for disease spread.

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. Since late blight symptoms may be confused with symptoms of other diseases, the following diagnostic pointers may help growers distinguish between the late blight and other diseases.

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 seen any time of day and may be found any where 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.

Several control measures including use of certified seed and destruction of cull in addition to careful scouting are absolute necessities if late blight is to be properly controlled. Remember that prevention is the key to success

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.

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 on both potato and tomato in Immokalee growers in other areas are advised to adhere to a preventative spray program.

To date, no reports of late blight have been received from other areas of the state.

Sclerotinia

Reports from the East Coast report that sclerotinia is still causing problems in tomato in some places.

Growers and scouts around Southwest Florida report that active Sclerotinia is still widely present on bean, pepper, tomato and eggplant but note that new infections have declined over the past week or so.

Respondents in Homestead area report that new white mold infections have been noted in beans, eggplant potato and tomato in recent weeks.

Dr Rick Raid, Pathologist UF/IFAS EREC reports that lettuce drop, caused by the fungus *Sclerotinia sclerotiorum*, has probably reached its peak by now, with the rising spring temperatures being less favourable for future infections. A few collapsed heads have been evident in almost every field, but the total incidence has been less than a percent on the muck soils of the Everglades Agricultural Area. Drop is always most prevalent in fields that were not flooded the previous summer, particularly in those previously cropped to susceptible vegetable crops such as cabbage, celery, and beans.

The pathogen survives as sclerotia in the soil and this may give rise to a fruiting structure (under the right conditions), which provides aerial or wind-blown inoculum (spores). The most effective management programs are aimed at the primary inoculum form, the sclerotia.

While management of this disease begins before planting with fallow flooding of organic soils (nearly 100% effective) during the summers, crop rotation, or deep plowing of heavily infested fields; growers can sometimes achieve control on the currently planted crop using available fungicides. On beans, Topsin M (thiophanate methyl) and Rovral (iprodione) provide some control.

Since the infections frequently occur on senescing blooms, applications should be timed to coincide with blossoming. If applied once, apply at 50-70% bloom or, for better control, apply twice, with the first application at 10-30% bloom and the second at peak bloom. Botran is another chemical registered on beans, which may be used to target Sclerotinia. As usual, read all labels before applying chemicals to check for proper registration, rates, and safety guidelines.

In tomato and pepper, infections also typically start 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. Large portions of the field may become diseased, producing large, circular, areas of dead plants.

Sclerotinia is a fungus that prefers cool, moist weather, causing diseases of great intensity when temperatures range from 60 - 70°. High humidity with dew formation supports the spread and increases the severity of infections. Topsin has given good results in controlling the disease in fruiting vegetables if applied preventatively.

A good indicator of Sclerotinia is the presence of small, black sclerotia (resting structures) of the fungus. Sclerotia vary in size and shape. Sclerotia can form on the surface of plant parts as well as inside the stems of tomato. Another common indicator of Sclerotinia diseases is the presence of white, cottony-like mycelium of the fungus when weather conditions are cool and moist.

Topsin M 70 WP has an emergency, Section 18 label for use in Florida on fruiting vegetables including tomato, pepper, and eggplant for suppression of white mold caused by *Sclerotinia sclerotiorum* from July 3, 2003 to March 31, 2004. The rate is 0.5 to 1.0 lbs of product per acre. It is for use by ground application only. A maximum of 4 applications per crop are allowed. Do not apply within 2 days of harvest. The maximum amount of product per crop that can be used is 3.5 lb/acre.

Bacterial Spot

Around Immokalee, reports indicate that rain and wet conditions over the past few weeks have flared up bacterial spot activity and indicate that bacterial spot pressure is high in many tomato and pepper fields. Respondents around the Homestead area report new bacterial spot activity in tomato over the past few weeks.

East Coast growers report that bacterial spot is the number one disease problem in tomato at this time. Reports indicate that bacterial spot is widespread in pepper as well but at lower levels.

Reports from the Manatee/Ruskin area indicate that most young crops tomato crops look good with a few bacterial spot lesions here and there. Respondents note that this prognosis is liable to change over the next few weeks following the heavy rain received over the past few days.

Early Blight

Reports from Homestead indicate that early blight is active on potato and tomato. Alternaria is widely also present on beans.

Early blight is widely present on tomatoes in East Coast growing areas. Incidence and occurrence is mostly low to moderate but specialty growers report higher incidence and severity in heirloom varieties.

Around southwest Florida, respondents report an increased early blight activity in tomato and potato over the past few weeks and note that early blight along with a combination of associated foliar diseases such as bacterial spot and target spot can be found in nearly every mature tomato field.

Alternaria leaf spot, caused by the fungus *Alternaria brassicae*, has been observed on Chinese cabbage this fall throughout the Glades. Dr Rick Raid notes that although this disease can be brought into check by some of the broad spectrum protectants, such as chlorothalonil and maneb, strobilurin fungicides registered on this crop have proven to be the most effective. Again, this class of fungicide should be alternated or tank mixed with a broad-spectrum protectant to avoid or reduce the likelihood of fungicide resistance developing and to improve efficacy.

Reports indicate that Alternaria leafspot is present at low levels in melons around Southwest Florida and in Manatee County.

Target spot

Respondents in Palm Beach County report that target spot is widely present on tomato. Incidence and severity is mostly low.

Growers around Homestead report that active target spot is widely present on tomato.

Growers and scouts around Southwest Florida indicate that target spot is widely present across the area especially in the inner canopies of mature plantings

Tomato Yellow Leaf Curl Virus

Around Homestead, respondents report that new TYLCV infections are increasing rapidly and note that some late fields already approaching 15% infection at first tie.

In Manatee County, TYLCV is mostly low but reports indicate that some new plantings are at 10 –15% infection rate.

In Southwest Florida, growers and scouts indicate that TYLCV is increasing seasonally in tomato fields with many fields now reaching 1-3% infection with some scattered hotspots reaching 10% or more. In few cases infection rates of 25- 90% have been reported.

Growers and scouts on the East Coast report mostly low incidence of TYLCV with a few infected plants showing up here and there. There have been some reports of increased incidence and occurrence in older plantings with secondary infections being observed within fields.

Rust and Blight on Sweet Corn

Reports from the Belle Glade area indicate that common rust of corn, incited by *Puccinia sorghi*, has picked up early this year. A foliar disease, common rust may be diagnosed by the orange to brown pustules that develop on both sides of the corn leaf. Easily disseminated long distances by wind-blown spores, the disease may spread quite rapidly. Rust on young seedlings may result in stunted plants and pustules on ear husks may adversely affect marketability. Broad-spectrum protectants (EBDCs and chlorothalonil) used in a rotational or tank-mix program with the more effective strobilurin and sterol-inhibiting fungicides are recommended. On susceptible varieties, growers should not wait for the disease to build up to significant levels before applying chemical controls. This greatly reduces the likelihood of keeping the disease below economic levels. In addition, it increases the risk that fungicide-insensitive strains may develop. Use of a spreader-sticker, particularly when the plants are young and have waxy leaves may assist in obtaining good coverage. Once again, read all labels and follow all restrictions and safety instructions before applying pesticides.

Dr Rick Raid reports that common rust and northern corn leaf blight will be kicking into high gear with the bulk of the acreage now planted and inoculum levels in the area rising. Both of these foliar diseases are fully capable of causing significant reductions in yield or marketability if left unchecked. If growing a susceptible variety, good control may be obtained using registered fungicides, *if disease is not allowed to build up to uncontrollable levels before hand.* While the strobilurins as a class of compounds are outstanding for rust, the sterol inhibitors as a class are probably slightly better against blight. Both of these classes are superior to the broad-spectrum protectants (EBDCs and chlorothalonil), but these should be included in a sound chemical control program for fungicide resistance management. Using varieties that are resistant to the diseases may reduce or eliminate the need for chemical controls and this should be a prime consideration when possible.

Rust

Rust has also been reported on beans in the Devils Garden area of Hendry County.

Respondents indicate that bean rust is also present in Homestead primarily on non-resistant varieties.

Bean rust *Uromyces phaseoli* var *typica*, is primarily found during the cooler months when heavy dews, rather than actual driving rain, provide moisture for spore germination and penetration of host plants. In South Florida, rust usually first appears in early January and becomes progressively more severe through the end of the commercial crop in April.

Variation in pustule size, prominence of haloes, and other symptom patterns are due, in part, to the many races of the bean rust fungus -- 57 at last count. Each race is pathogenic on a specific combination of bean varieties. If varieties resistant to those specific races in a given locale are planted, control of rust can be very good. Unfortunately new races of the pathogen seem to appear almost as fast as new varieties are released.

Prompt crop destruction after harvest is very important in the control of rust. If fields are abandoned after harvest and not destroyed, rust can continue to develop and serve as a major source of inoculum for fields in full production. Brown clouds made of literally millions of rust spores have been observed above abandoned fields on gusts of wind. Such inoculum loads can make it difficult to control rust even with the most intensive spray schedule.

Currently, the most important method for rust control is periodic application of protectant fungicides. Initiate the spray program prior to the first sign of rust if rust is an annual problem. Where rust is sporadic in occurrence, begin the spray program at first sign of the disease. Subsequent sprays may have to be at 5 to 7 day intervals.

Downy Mildew

Dr Rick Raid reports that downy mildew, incited by *Bremia lactucae*, has now been reported throughout most of the south Florida lettuce production areas of the Glades.

The damp and dew conditions that have occurred the past couple of weeks have been ideal for fungal development. The short-lived spores are dispersed by winds during these moist periods. According to Dr. Richard Raid, "*Bremia lactucae* is capable of infecting any lettuce growth stage from seedling to mature plant. Head, leaf, and cos lettuce are all susceptible. Symptoms of downy mildew appear initially as chlorotic yellow spots on the upper leaf surface. Under favorable conditions, a white cottony-like fungal growth that is indicative of sporulation (formation of fungal spores) generally appears on the lower leaf surface within 24 to 48 hours following initial symptom development. During the early stages of disease development, spots are often delineated by the veins of the leaf, giving lesions a rather angular appearance. Although downy mildew is usually most severe on the older outer leaves, the disease may become systemic over time, infecting lettuce heads internally and colonizing even the roots. Although yield losses in the field at harvest may be substantial, downy mildew's impact is often accentuated by significant postharvest losses that occur during transit or storage."

Protective fungicide applications with maneb are effective and seem to have held it in check, but growers should regularly scout their fields and consider using a systemic fungicide, *in addition to maneb*, if the disease appears to be getting worse and if markets allow. Possible systemic fungicides include (alphabetical order): Acrobat, Aliette, Amistar (old name - Quadris), and Tanos. Clean up and incorporation of old lettuce from harvested fields is also very important, as this may harbor inoculum which is easily wind-blown to younger lettuce. Rotation of the aforementioned fungicides is essential to prevent the development of fungicide resistance.

Respondents in West Central Florida report that downy mildew is present on cabbage as well as some oriental brassicas including Napa and Chinese broccoli.

Reports indicate that downy mildew is active in squash in a number of locations across South Florida.

Bidens Mottle Virus

Dr Rick Raid reports that on lettuce grown in Florida, Bidens Mottle Virus is a fairly common disease, although it is rarely of economic importance. Caused by the Bidens mottle potyvirus, affected plants appear stunted, with leaf mottling and sometimes vein clearing with vein necrosis. Spread by several species of aphids, including the green peach aphid, the disease is most prevalent along field edges, particularly those bordered by the very common weed, *Bidens pilosa*. This weed is better known as Spanish needles or beggarstick. Symptoms in infected plants are frequently made more evident by cold weather. Incidence seldom exceeds a percent or two. Control, if warranted, should begin with a good weed control program for field edges and ditch banks prior to planting to eliminate known reservoirs.

Powdery mildew

Respondents in Palm Beach County indicate that they continue to find powdery mildew on squash in a number of locations. Incidence is low to moderate but drier conditions and crop maturity will favor disease development. Powdery mildew has also been reported on beans, eggplant, pepper and snow peas as well.

Powdery mildew is also widely present on squash around southwest Florida. Scouts operating around Immokalee note they are seeing some powdery mildew in older pepper in a few locations.

Fusarium crown rot

Fusarium crown rot in tomato has increased in some older tomato fields around Immokalee. Fusarium wilt is also present in a few widely scattered locations.

Growers in scouts in Palm Beach also report finding a few isolated cases of fusarium in pepper and tomato.

Phytophthora

Reports from the East Coast continue to note widely scattered occurrence of *Phytophthora capsici* on pepper. Reports indicate that it is primarily present in fields where the disease has been present and is slowly creeping along to infect new plants.

Phytophthora is also showing up in pepper in a few locations around southwest Florida.

Gummy stem blight

Growers and scouts around Immokalee report increasing incidence of gummy stem blight infections in watermelon. A number of growers report finding infected plants in trays coming from the plant house.

Low levels of gummy stem have also been reported around Manatee County.

Gray Mold

Growers and scouts continue to report finding botrytis in tomato in several locations around southwest Florida, especially around the Naples area. Some reports indicate heavy bloom loss in the most severely affected plantings.

Anthracnose

Growers and scouts around Immokalee continue to report problems with anthracnose on pepper.

Respondents in Palm Beach County indicate that anthracnose is present on pepper and note that Cubanelle peppers seem to be more affected than other varieties.

Watermelon Vine Decline and Fruit Rot Alert

For at least the past 2 seasons, central and southwest Florida growers have experienced problems with watermelon vine decline late in the crop cycle approaching harvest characterized by wilting in the plant, scorched leaves, defoliation and rapid vine collapse on maturing vines. Frequently, fruit were observed with greasy, necrotic lesions on the interior portion of the rind that rendered the fruit non-marketable.

Investigations to date have been inconclusive for identifying a cause. No pathogen was consistently associated with the symptoms nor were any cultural or environmental factors identified as the cause. Under the leadership of Dr. Pam Roberts at Immokalee, we now have additional resources to address this problem if or when it appears this season.

Last year the problem seemed to develop rapidly following heavy rains around the beginning of March. If this pattern continues growers may expect to encounter problems over the next few weeks.

If you see or suspect a problem, please notify your county extension agent immediately so we can begin collecting samples and information to try and pinpoint a cause. A significant number of melons have been lost to this problem and we need to find a solution.

Up Coming Meetings

Manatee County

March 9, 2004 **CORE/Private Pesticide Applicator Exam Preparation** 9AM - 11 AM
Manatee County Extension Office
1303 17th Street W
Palmetto, Florida

Contact Phyllis Gilreath at 941-722-4524

March 30, 2004 **WPS - Train-the-Trainer Workshop.** 9 AM – 11 AM

Manatee County Extension Office
1303 17th Street W
Palmetto, Florida

Contact Phyllis Gilreath at 941-722-4524

Miami Dade County

March 17, 2004 **General Standards Training Class & Exam** 8:30 AM - 5:00 PM

South Dade Government Center
10710 SW 211th St., Rm. 203
Homestead, Florida

Call Mary Lamberts at 305-248-3311 for information

Palm Beach County

March 17, 2004 **General Standards/Core Test Review** 8 AM - 12 Noon
Aquatic Weed Control Test Review 1 PM – 3 PM

Clayton E Hutchinson Agricultural Center
559 North Military Trail
West Palm Beach, Florida

Contact Laura Powell at 561-996-1655.

March 1, 2004 **General Standards/Core Test Review** 8 AM - 12 Noon
Ag Row Crop Test Review 1 PM – 3 PM

Belle Glade Extension Office
2976 State Road 15
Belle Glade, Florida

Contact Laura Powell at 561-996-1655.

March 2, 2004 **Growers Meeting - Fungicide Application and** 11:30 to 1:00 pm
Current Research Review for Sweet Corn, Snap Bean, and Sod

Drawbridge Cafe, Belle Glade,

Contact Darrin Parmenter at 561-233-1725

Southwest Florida

March 15, 2004 **Vegetable Growers Meeting – Cover Crops** 12 Noon – 1:30 PM

UF/IFAS - SW Florida Research and Education Center
Hwy 29 N, Immokalee, FL

Contact 863-674-4092

March 16, 2004 **WPS Handler Training** Spanish 9 AM – Noon
English 1 – 3 PM

Hendry County Extension Office
1085 Pratt Boulevard
LaBelle, Florida 33935

Contact 863-674-4092 for details

Other Meetings

March 23-27, 2004 **ISHS International Symposium on Protected Culture**
in a Mild-WinterClimate
Orlando, Florida, USA.

Contact Dr. Daniel J. Cantliffe at 352-392-1928 ext. 203

June 21-24, 2004 **1st International Symposium on Tomato Diseases**
and 19th Annual Tomato Disease Workshop
Grosvenor Resort at Walt Disney World
Orlando, Florida

For more information, visit <http://plantdoctor.ifas.ufl.edu/istd.html>

November 14 – 16, 2004 17th International Pepper Conference

Naples Beach Hotel and Golf Resort
Naples, Florida

For more information, contact Gene McAvoy at 863-674-4092 or visit
<http://conference.ifas.ufl.edu/pepper>

Websites

The Soil Biology Primer provides an introduction to the living component of soil and how it contributes to agricultural productivity, and air and water quality. This USDA/NCRS is aimed at farmers, ranchers, ag professionals, resource specialists, conservationists, soil scientists, students and educators. Go to http://soils.usda.gov/sqi/soil_quality/soil_biology/soil_biology_primer.html

News You Can Use

New Strategies for Corn Silk Fly Management

The fly pest commonly referred to as corn silk fly (*Euxesta stigmatis*) deposits eggs into the silks of sweet corn ear tips. Larvae emerge and feed down the silk into the cob tip, rendering the ears unmarketable. Larvae pupate in the soil near the plant, and overall development time (egg to adult) can range from three to five weeks.

Since this pest affects the \$122 million Florida sweet corn market, research at the Everglades Research and Education Center (EREC) in Belle Glade is examining management practices. Current insecticides such as chlorpyrifos, methyl parathion, methomyl, cyfluthrin, and cyhalothrin kill more than 90 percent of the population on contact, but mortality drops below 25 percent within 72 hours after application. Consequently, efforts have been made to examine plant resistance as a mechanism to reduce corn silk fly damage.

Field trials at EREC indicated that corn varieties containing specific lipids in the plant surface or maysin in corn silk had less fly damage than other cultivars. Breeding efforts have resulted in the development of both a field corn and a shrunken 2 sweet corn with elevated maysin levels both of which have been publicly released. These varieties may well help protect against armyworm and earworm, in addition to corn silk fly.
(Citrus & Vegetable Magazine, November, 2003).

Barn Owls for Sustainable Rodent Control

Barn owl nesting boxes have been sprouting like weeds on many vegetable farms in the Everglades Agricultural Area this fall and spring as part of a USDA program fostering sustainable rodent control. One of nature's most effective rodent predators, the common barn owl (*Tyto alba*) is considered to be the "farmer's friend". It has been documented that a single nesting pair of barn owls can easily eliminate over 1,000 rodents per year. Spearheaded by Dr. Richard Raid at the EREC, the University of Florida's "Barn Owl Program" assists growers in placing nesting boxes along field edges and drainage canals to help control rodent pests. Major among these pests are various rat and mice species, as well as marsh rabbits.

Nesting boxes can be made from an assortment of materials but Raid's program uses a standard nesting box measuring 38" L X 12" W X 18" H and built of exterior plywood and pine board. Boxes are best positioned out in the open on 4" X 4" posts about 10 to 12 feet off the ground, with the entrance hole facing north. Box plans and instructions can be obtained from Dr. Raid by contacting him at 561-993-1564.

A key component of the USDA project has been the educational and public relations aspects. Raid uses the program to provide "hands-on" lessons for students (K-12), encouraging them to get involved in not only an

environmental cause, but agriculture as well. Rising owl populations have also enabled Raid to collect “owl pellets”, regurgitated prey remains, for distribution to schools. The dissection of owl pellets is a favorite activity of teachers and students for science labs in the classroom. It is a win-win program for all involved... unless perhaps, you're a rodent.

Ag Literacy Day in Florida: March 16, 2004 has been designated Agriculture Literacy Day by the Florida Department of Agriculture and Florida Agriculture in the Classroom, Inc. (FAITC). Resources are available for those interested to present good, cogent information about Florida Agriculture. For further information, go to <http://www.agtag.org> or call 352-846-1391.

Quotable Quotes

To us also, through every star, through every blade of grass, is not God made visible if we will open our minds and our eyes. -- Thomas Carlyle

Always do right. This will gratify some people and astonish the rest. -- Mark Twain

The subtlety of nature is greater many times over than the subtlety of the senses and understanding. -- Sir Francis Bacon

Take rest; a field that has rested gives a bountiful crop. -- Ovid

Brains first and then Hard Work. --Eeyore in Pooh's Little Instruction Book

On the Lighter Side

The Cracked Pot

A water bearer in India had two large pots, each hung on the ends of a pole, which he carried across his neck. One of the pots had a crack in it, while the other pot was perfect and always delivered a full portion of water.

At the end of the long walk from the stream to the house, the cracked pot arrived only half full. For a full two years this went on daily, with the bearer delivering only one and a half pots full of water to his house.

Of course, the perfect pot was proud of its accomplishments, perfect for which it was made. But the poor cracked pot was ashamed of its own imperfection, and miserable that it was able to accomplish only half of what it had been made to do.

After 2 years of what it perceived to be a bitter failure, it spoke to the water bearer one day by the stream. "I am ashamed of myself, and I want to apologize to you. I have been able to deliver only half my load because this crack in my side causes water to leak out all the way back to your house. Because of my flaws, you have to do all of this work, and you don't get full value from your efforts."

The bearer said to the pot, "Did you notice that there were flowers only on your side of the path, but not on the other pot's side? That's because I have always known about your flaw, and I planted flower seeds on your side of the path, and every day while we walk back, you've watered them. For two years I have been able to pick these beautiful flowers to decorate the table. Without you being just the way you are, there would not be this beauty to grace the house."

Moral: Each of us has our own unique flaws. We're all cracked pots. But it's the cracks and flaws we each have that make our lives together so very interesting and rewarding. You've just got to take each person for what they

are, and look for the good in them. Blessed are the flexible, for they shall not be bent out of shape. Remember to appreciate all the different people in your life!

Blessings to all my crackpot friends.

Priceless Grandparent Stories

A grandmother was telling a little girl what her own childhood was like: "We used to skate outside on a pond. I had a swing made from a tire; it hung from a tree in our front yard. We rode our pony. We picked wild raspberries in the woods." The little girl was wide-eyed, taking this in. At last she said, "I sure wish I'd gotten to know you sooner!"

I didn't know if my granddaughter had learned her colors yet, so I decided to test her. I would point out something and ask what color it was. She would tell me, and always she was correct. But it was fun for me, so I continued. At last she headed for the door, saying sagely, "Grandma, I think you should try to figure out some of these yourself!"

When my grandson, Billy, and I entered our vacation cabin, we kept the lights off until we were inside to keep from attracting pesky insects. Still, a few fireflies followed us in. Noticing them before I did, Billy whispered, "It's no use, Grandpa. The mosquitoes are coming after us with flashlights."

My grandson was visiting one day when he asked, "Grandma, do you know how you and God are alike?"! I mentally polished my halo while I asked, "No, how are we alike?" "You're both old," he replied.

Contributors include: Joel Allingham/AgriCare, Inc, Karen Armbruster/SWFREC, Kathy Carbiener /Agricultural Pest Management, Jim Connor/SWFREC, Bruce Corbitt/West Coast Tomato Growers, Dr. Phyllis Gilreath/Manatee County Extension, John Hamilton/Helena Chemical Company, Fred Heald/Farmers Supply, Sarah Hornsby/AgCropCon, Cecil Howell/H&R Farm, Loren Horsman/Glades Crop Care, Bruce Johnson/General Crop Management, Dr. Mary Lamberts/Miami-Dade County Extension, Leon Lucas/Glades Crop Care, Gene McAvoy/Hendry County Extension, Alice McGhee/Thomas Produce, Jimmy Morales/Pro Source One, Dr. Gregg Nuessly/EREC, Tim Nychk/Nychk Bros. Farm, Chuck Obern/C+B Farm, Teresa Olczyk/ Miami-Dade County Extension, Darrin Parmenter/Palm Beach County Extension, Dr. Ken Pernezny/EREC, Dr. Richard Raid/EREC, Dr. Pam Roberts/SWFREC, Dr. Nancy Roe/Farming Systems Research, Wes Roan/6 L's, Kevin Seitzinger/Gargiulo, Jay Shivler/ F& F Farm, Kevin Short/Integrated Crop Management, Ken Shuler/Stephen's Produce, Ed Skvarch/St Lucie County Extension, John Stanford/LNA Farm, Mike Stanford/MED Farms, Dr. Phil Stansly/SWFREC, Julie Stocker/Diamond R, Eugene Tolar/Red Star Farms, Dr. Charles Vavrina/SWFREC, Mark Verbeck and Donna Verbeck/GulfCoast Ag, Alicia Whidden/Hillsborough County Extension, and Dr. Henry Yonce/KAC Agricultural Research, Inc.

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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