



UNIVERSITY OF  
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E X T E N S I O N

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# SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

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The weather over the past few weeks has been a real roller coaster ride with a strong cold front passing through the area on the weekend of February 12 dropping temperatures in some of the normally colder interior growing areas to near freezing. Since that time temperatures have moderated considerably and have been Spring-like for the past several days. Daytime highs for the period have ranged from the mid 60's to the low 80's with nighttime lows in the 30's 40's and 50's.

Most areas received only trace amounts of rainfall for the period. Compared to historical norms almost all growing areas are deficit in rainfall over the past 4 months or so and soil moisture ground water tables in many places are well below normal. For example, over the last four months, the Belle Glade/Pahokee area has received its lowest amount of rainfall since 1971.

### What happened to the wetter and cooler than normal weather that was predicted for this winter?

Weather in the much of South Florida has been mostly dry with only a couple of small rain events in the last month, thus irrigation demand is high. What we have had is heavy morning fog and dew, which is keeping plants wet and producing ideal disease conditions. Although we have not had any hard freezes, fronts making

### 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
<b>Bradenton</b>											
2/5 – 2/21/05	37.3	77.4	0.05	5.5	4.1	2.0	18.5	52.9	21.3	17.1	68.6
<b>Ft Lauderdale</b>											
2/5 – 2/21/05	43.5	82.9	0.04	0.0	3.1	19.0	7.1	4.8	26.7	23.1	44.8
<b>Fort Pierce</b>											
2/5 – 2/21/05	35.4	81.6	0.01	14.3	0.9	2.9	13.6	7.3	37.6	8.3	54.1
<b>Homestead</b>											
2/5 – 2/21/05	39.6	83.4	0.00	1.6	9.9	1.6	21.0	50.9	46.9	16.1	40.7
<b>Immokalee</b>											
2/5 – 2/21/05	31.4	82.5	0.02	9.3	11.6	6.4	6.2	32.4	10.0	15.9	43.9

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their way through the area are keeping temperatures near optimal much of the time for many diseases. Raising water tables for frost protect has also contributed to soil borne disease problems.

**Scattered frost in conjunction was reported in several locations around Southwest Florida (most surprisingly in Naples) and over into the Belle Glade area.** Growers report some injury to sensitive crops and leaf burn on the tops of some plantings and indicate that fruit set and quality may have been affected.

**Crops coming to market include broccoli, cabbage, celery, cucumbers, eggplant, endive, escarole, green beans, lettuce, pepper, radishes, squash, strawberries, sweet corn, tomatoes, and specialty items.** Quality is mostly good and reports indicate that market conditions have improved somewhat over the past few weeks.

**The short-term forecast from the National Weather Service in Miami indicates that conditions over the next few days will be dominated by a weak Atlantic Ridge, which will result in warm winds out of the south and a continuation of the current pattern.** By next weekend, the subtropical jet axis promises to drop down over the peninsula bringing increased possibility of wet weather.

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

## **Insects**

### **Whiteflies**

**Reports from the Manatee/Ruskin area indicate that whitefly numbers are slowly increasing in tomato, but still remain low in most fields.** Phyllis Gilreath reports that growers are seeing a difference in the number of silverleaf whitefly adults on different color plastic with significantly lower numbers on silver plastic compared to black. According to one source, whitefly numbers in the area are actually a little above what they were this time last year and Phyllis cautions that growers need not be reminded about what occurred with the whitefly/yellow leaf curl virus situation last year.

**Reports from Palm Beach County indicate that whitefly numbers remain low but are beginning to increase in a few locations.**

**Reports from Homestead indicate that whitefly pressure is high in cucurbits with many squash fields showing silverleaf symptoms.** Whiteflies are also widely present in beans and tomatoes.

**Around Southwest Florida, respondents indicate that whitefly numbers are increasing in a number of places with growers west of Immokalee continuing to battle heavy whitefly pressure.** Growers and scouts also report finding whiteflies in melons and other cucurbits.

**Growers are urged to practice the following whitefly management recommendations:**

### **Nicotinoid Resistance Management Recommendations**

- Reduce overall whitefly populations by strictly adhering to cultural practices including:
  - Plant whitefly-free transplants
  - Delay planting new crops as long as possible and destroy old crops immediately after harvest to create or lengthen a tomato free period
  - Do not plant new crops near or adjacent to infested weeds or crops, abandoned fields awaiting destruction or areas with volunteer plants

- Use UV-reflective (aluminum) plastic soil mulch
  - Control weeds on field edges if scouting indicates whiteflies are present and natural enemies are absent
  - Manage weeds within crops to minimize interference with spraying;
  - Avoid u-pick or pin-hooking operations unless effective control measures are continued
- Do not use a nicotinoid like Admire on transplants or apply only once 7-10 days before transplanting; use other products in other chemical classes, including Fulfill, before this time;
  - Apply a nicotinoid like Admire (16 ozs/acre) or Platinum (8ozs/acre) at transplanting and use products of other chemical classes (such as the insect growth regulators Courier® or Knack® as the control with the nicotinoid diminishes. Note: Courier and Applaud are the same active: buprofezin. Courier is labeled for whitefly on tomato and snap bean. The mode of action is chitinase inhibitor. Dimilin and Knack are juvenile hormone mimics labeled for whitefly control on fruiting vegetables.
  - Never follow an application (soil or foliar) of a nicotinoid with another application (soil or foliar) of the same or different nicotinoid on the same crop or in the same field within the same season (i.e. do not treat a double crop with a nicotinoid if the main crop had been treated previously);

Save applications of nicotinoids for crops threatened by whitefly-transmitted plant viruses or whitefly-inflicted disorders (i.e. tomato, beans or squash) and consider the use of chemicals of other classes for whitefly control on other crops.

### Leafminers

**Around Southwest Florida, leafminer pressure is patchy with a few isolated fields reaching threshold levels while others remain very low.** Growers and scouts indicate that reduced pressure in recent weeks has allowed beneficials to gain the upper hand and minimize spray applications.

**Reports from the Manatee Ruskin area indicate that leafminer numbers are increasing and in some older fields are already at treatable levels.** Some aggressive stippling as well as adults noted in some fields.

**Respondents in Homestead area report that leafminer pressure remains moderate in young beans and tomato.**

**Growers in Palm Beach report very low leafminer pressure in most places.**

### Pepper weevil

**Respondents in Homestead report steady weevil pressure in hot varieties with increasing numbers showing up in bells and other sweet varieties.**

**Reports from Southwest Florida indicate that pepper weevils are around but the populations remain lower than normal with the exception of some hotspots in the Naples area.** Scouts note that more weevils are moving around over the past few days as reflected in increased trap counts.

### Aphids

**Respondents in Palm Beach note that aphids have been active in recent weeks, moving out of weeds and into crops since the New Year.** Dr Gregg Nuessly, Entomologist at UF/IFAS EREC, notes that lots of ditch and canal weeds are going to flower now and this will hasten the aphids (and diamondback moths) to leaf for greener fields.

**Gregg reports that growers and scouts have been picking up potato aphids on leafy green and leafy brassica vegetables around the Everglades Agricultural Area.** Potato aphids are either green or pinkish red, have long legs and cornicles and tend to fall off the leaves during your search for insects. They can easily be seen on the muck soils after falling from the leaves.

**He notes that green peach and turnip aphids have also been showing up in large numbers since the first of the year.** The relatively cool and dry conditions the area has been experiencing are ideal for aphids.

**Around Southwest Florida, respondents indicate that aphids are spotty in occurrence but have colonized several fields and required spraying.** Aphid pressure has been particularly heavy in some fields in the Clewiston area.

**Reports from Homestead indicate heavy pressure in squash where aphid transmitted virus problems have also increased substantially.**

**A few aphids are present in young tomato around the Manatee Ruskin area.** Reports indicate that both winged and apterous (wingless) aphids have been reported in peppers.

### **Worms**

**Reports from Homestead note that fall armyworms are still causing sporadic problems in corn.**

**Respondents in Palm Beach County report that worm pressure has been negligible in recent days. A few diamondback moth larvae are present in leafy brassicas.**

**Around Southwest Florida, worm pressure is remains low with some beet and southern armyworms being reported.** Growers and scouts report finding armyworm egg masses in tomato, pepper and potato fields. A few melon and pickleworms are also being reported in some locations.

**Reports from Manatee County indicate that growers are seeing very low worm pressure with just a few southern and beet armyworm egg masses being reported.** Pinworm levels remain very low.

### **Spider Mites**

**Reports from Palm Beach County indicate that spider mites are still active on eggplant.**

**Growers around Southwest Florida report that spidermites are also starting to show up on a few spring cucurbits and continue to be a problem in some eggplant.**

**Respondents in Homestead report increasing problems with red spider and two spotted mites on eggplant and cucumbers.**

**Spider mites and tumid mites are present on strawberries in a number of locations around the Plant City area.**

### **Thrips**

**Growers in Homestead continue to report problems with *Thrips palmi* in a variety of crops including beans, cucumber, eggplant, and pepper.**

**Respondents in the Manatee Ruskin area note that a few thrips are starting to show up in sticky traps.**

**Around Southwest Florida, scouts report finding a few more thrips as the weather warms.** Indications are that these are primarily flower thrips.

## **Diseases**

**Foggy mornings and heavy dews in many places have helped keep diseases active.**

### **Late blight**

**Late blight is still a very real threat to tomato fields around Southwest Florida.** Although reports indicate that disease activity has slowed in the past few days, growers should be aware that it could pick up at any time depending on environmental conditions. The current outbreak seems to prefer tomato to potato but this could also change.

**Most observers agree that the incidence and severity is as bad or worse as it has been in many years.** Late blight has caused some major yield loss in some fields this season while remaining fairly low in others. Some growers have also reported packing problems from late blight. Incidence and severity remains low to moderate in many places with a few lesions widely scattered across infected fields. But reports indicate that in an increasing number of fields incidence and severity is high with plants displaying multiple stem and fruit lesions and in some hotspots plants have been decimated in fairly large areas of the worst affected fields.

**Respondents in Homestead indicate that late blight is now present in several tomato fields and continues to spread to new locations.**

**Eat Coast growers in Palm Beach and elsewhere now report finding late blight in several locations.**

**No reports of late blight have yet been received from West Central Florida but growers should be vigilant and on the look out, especially with these cool, foggy mornings we have been having and the amount of inoculum present in South Florida.**

**Infections are apparently present in some transplant houses as growers report finding infected plants arriving in transplants.**

**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 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.

**Over the past few weeks warm days and cool night temperature and consistent nighttime leaf wetness (fogs, heavy dew, etc) along with scattered light showers in some places over the past few weeks have been ideal for late blight.** Along with ideal conditions, the combination of two back to back long holiday weekends along with some possible reduction in spraying resulting from falling prices have undoubtedly worsened the situation in places. 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. If weather conditions remain mild, we could be in for a blight year.

**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.**

Crystalline, white sporulation 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. Under the microscopic, the characteristic lemon-shaped spores are easily recognizable.

**Several control measures including use of certified seed and destruction of culls in addition to careful scouting are absolute necessities if late blight is to be properly controlled.** It is critical to keep inoculum levels low during seasons when weather conditions early in the cropping season are favorable for development of late blight (as they have been this year). 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.

**Use labeled fungicides preventively including Dithane, Penncozeb, or Manzate, Manex, Maneb, Ridomil Gold Copper, Ridomil Gold Bravo, Equus, Chloronil, Echo, Bravo, Super-Tin, Curzate, Gavel, Headline Quadris/Amistar and Serenade.** Check label for use in greenhouse. Several growers report best results where they have applied a tank mix of Curzate and a protective fungicide like manzate on a two – three day schedule.

**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. **No other disease will find farms not taking proper care of their crop like late blight.**

### **Downy Mildew**

**Growers and scouts report that downy mildew is widely present on cucumbers and squash in scattered locations around Southwest Florida but not that detection of new infections has decreased in recent days.**

**Respondents indicate that downy mildew remains active squash in Homestead.**

**Reports from Palm Beach County indicates that downy mildew is present in cucurbits and has reached high levels in some places especially in plantings which were covered for frost protection.**

**Downy mildew is also present on lettuce and brassicas in Devil's Garden, around Belle Glade and in other parts of Palm Beach County.**

**Dr Rick Raid, Plant Pathologist at the UF/IFAS EREC in Belle Glade writes indicates that research initiated last year and repeated this year have demonstrated that numerous phosphonic compounds may have significant activity against some of the downy mildew pathogens.** Two such fungi, *Bremia lactucae*

(lettuce downy mildew) and *Peronospora parasitica* (downy mildew of brassicas), were both held in check using phosphonic compounds (chemistry containing phosphoric acids) in fungicide trials conducted by Dr. Richard Raid ([rnr@ifas.ufl.edu](mailto:rnr@ifas.ufl.edu)). Although the phosphonics are frequently marketed as nutritional supplements, several phosphonic compounds are actually labeled as fungicides. In addition to good efficacy, the phosphonics offer some economic benefits and possess very short pre-harvest intervals. Care should be taken to incorporate them into a rotational or tank-mix program with other fungicides and to follow label directions to avoid potential phytotoxicity problems.

### **Bacterial Leaf Spot**

**Growers in the Manatee Ruskin area indicate that some bacteria spot is present, especially in earlier plantings that went through the sporadic windy weather over the last 3 weeks.** Most is staying low in the bush with new growth very clean.

**Respondents in Southwest Florida note that bacterial spot continues to cause problems in several locations and report finding new infections in tomato and pepper fields in recent weeks.**

**Growers and scouts in Palm Beach report quite a few problems with bacterial spot on pepper despite the lack of rainfall in recent weeks.**

**Respondents in Homestead indicate that new cases of bacterial spot have dwindled to low levels in most places.**

### **Target Spot**

**Scouts in the Homestead area report active target spot in tomato.** They note that while cool dry conditions have helped slow bacteria spot they may favor diseases like early blight and target spot.

**Around Southwest Florida, target spot is widespread at low levels in tomato.**

**Target spot is present on tomato in Palm Beach; pressure is reported to be moderate to high in some locations with some fruit quality problems being reported.**

### **Early Blight**

**Growers across the area report low to moderate incidence of early blight on tomato.** In some instances lesions are associated with leafminer injury.

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

**Reports from around southwest Florida indicate that TYLCV is slowly increasing across the area but in most places remains below levels seen last season at this time.** Some scattered hotspots have been reported around the Immokalee area where incidence runs as high as 15 %.

**Growers should take precautions to rogue plants where feasible and practice a complete program of IPM and whitefly management including attention to sanitation and crop destruction.**

**Growers and scouts in Manatee County report that most fields are still relatively clean with regard to TYLCV but a few infected plants have been reported, mostly in the oldest plantings.** In several cases infections are on tomato volunteers which seem to be more numerous in some fields than normal, possibly due to the wet conditions caused by the hurricanes last fall and/or the wet conditions caused by bring water tables up for cold protection this spring. There are concerns that carry over of fall crops may lead to problems this spring.

**Growers and scouts around Homestead report a big jump in TYLCV infections with the average field now in the 15-20% range with some fields at much higher levels.** While market conditions have lead growers to reduce sprays on older fields, they would be advised to work on keeping young fields clean otherwise they will not have anything to pick when the market recovers. As more fields left to fend for themselves, this situation combined with increasing virus is a ticking time bomb.

### **Powdery Mildew**

**Growers and scouts operating around Homestead are reporting active powdery mildew in squash**

**Powdery mildew is also present on cucurbits around West Central Florida as well as East Coast growing areas.**

**Dr Ken Pernezny, Plant Pathologist at UF/IFAS ERREC reports finding powdery mildew on snap beans.** Ken notes that this is extremely early for powdery mildew to appear on beans but indicates that he has confirmed it under the microscope. The symptoms consist of a russetting of the upper leaf surface of the older leaves, with mildew evident on the opposite lower surface. It is sometimes quite hard to see the actual mildew.

**Powdery mildew is wide spread on squash around Southwest Florida.** Incidence and severity is moderate to high in some places.

**Growers in the Devils Garden area of Hendry County report finding low levels of powdery mildew on pepper especially older jalapenos.**

**Powdery mildew of pepper is caused by *Leveillula taurica*, which is a very different powdery mildew fungus from that causing powdery mildew on cucurbits.**

**The fungus, which affects cucurbits *Podasphaera xanthii* (*Sphaerotheca fulginea*) or, occasionally, *Erysiphe cichoracearum*, grows on both surfaces of a leaf and forms haustoria within some epidermal cells to absorb nutrients and produces spores on both surfaces.**

**In contrast, *Leveillula taurica* grows only within a leaf until it produces spores, a growth habit which is similar to *Alternaria* and most other foliar plant pathogenic fungi.** Additionally, *Leveillula taurica* only produces spores on the underside of leaves. *Leveillula taurica* is a species complex that infects over 1000 plant species in 74 families, including tomato and eggplant as well as pepper.

**Detecting powdery mildew on pepper can be difficult.** The white powdery growth characteristic of powdery mildew diseases occurs only on the underside of leaves and it will turn brown rather than remaining white. Diffuse yellow spotting often develops on the upper surface. Affected leaves tend to drop off the plant, as occurs with bacterial leaf spot.

**Dr Rick Raid, Plant Pathologist at the UF/IFAS EREC reports that powdery mildew is also present on spring snap beans around South Florida.** He notes that relatively dry cool weather conditions have made powdery mildew a concern this spring on snap beans. Most evident as a white, superficial powdery growth on bean leaves, the fungal pathogen (*Erysiphe polygoni*) may also infect the pods, causing stunting and malformation.

**Early infections before blossoming may result in significant yield loss.** If detected early on, it may be advisable to apply fungicidal sprays for powdery mildew control. Although the broad-spectrum fungicides such as chlorothalonil and copper may provide significant control, the strobilurins, triazole fungicides, and sulfur are more effective against powdery mildew.

## **Gummy Stem Blight**

**Growers and scouts around Southwest Florida report finding gummy stem blight on watermelon in a number of locations.** In a few places infections have been present on transplants causing significant stand reduction.

**In Florida, gummy stem blight (black rot) is a serious disease that occurs annually on watermelons.** Cucumbers, muskmelons, cantaloupes, squash, and other members of the cucurbit family may also be infected with gummy stem blight. Cucurbits may be infected at any time from seedlings to mature vines with fruit.

**Infection and symptoms may occur on all plant parts except roots.** Symptoms appear as light to dark brown circular spots on leaves or as a light to dark brown to black, often gummy, lesions on stems. Prior to the occurrence of chlorosis or necrosis, tissues may appear water soaked. Wilting, followed by death of young plants may occur. Stem lesions enlarge and slowly girdle the main stem resulting in a red-brown-black canker that cracks and may exude a red to amber gummy substance. Vine wilting is usually a late symptom. Use of a hand lens will reveal small, clear white (when young) to black (when old), pimple-like pycnidia embedded in older diseased tissue.

**Gummy stem blight typically progresses from the central stem of the plant to growing tips.** Leaf spots are variable in shape, red-brown in color and initial infections are generally seen on leaf margins and veinal areas.

**Because other plant disorders can cause exudation of a gummy substance, “gummy-ness” should not be relied upon for diagnosis of gummy stem blight.** Anthracnose and inadequate liming can both cause stem lesions and gumming.

**The fungus (*Didymella* sp) that causes gummy stem blight produces two spore stages, a sexually produced spore (ascospore) and an asexually produced spore (pycnidiospore).** The ascospore is windborne and can be disseminated from field to field serving as a primary source of inoculum. The pycnidiospore functions mainly in secondary spread of the disease. Pycnidiospores are released in a gummy substance that makes them more adaptable for spread by splashing water.

**Growers often comment on this disease occurring “overnight.”** What they are actually seeing are the results of secondary spread, which is more difficult to control than primary spread simply because of increased spore numbers with increased diseased tissue.

**Nighttime temperatures and moisture conditions are ideal during much of the growing season in Florida.** Gummy stem blight is most severe in wet years since moisture from dew, rain or irrigation is necessary for spore germination. The optimum temperature for infection is 61 to 75 F. After a spore germinates on a susceptible host, the fungus penetrates the plant tissue and symptoms can appear in 7 to 12 days. Wounds assist in promoting infection.

**Gummy stem blight can be successfully managed if the grower utilizes a combination of control strategies.** Control of primary sources of inoculum is important. Growers should purchase clean seed from reputable companies produced in arid western locations and avoid transplants that have gummy stem blight or other diseases.

**In addition to seed, the most important source of primary inoculum is organic debris from previous cucurbit crops.** After harvest, crop debris from should be plowed under to reduce inoculum. Volunteers and wild cucurbits provide an additional source of inoculum. Crop rotation and destruction of weed hosts are important for gummy stem blight control.

**Multiple applications of fungicides are necessary to control gummy stem blight.** It is important to begin a fungicide program prior to the first sign of gummy stem blight. In south Florida, the spray program should be initiated soon after emergence. Bravo, Echo, Equus, ChloroGold, Amistar, Cabrio, Pristine, Dithane, Manex, Maneb, Penncozeb, Manzate, or Topsin applied preventatively have given good results locally. In other areas of the state, fungicide spray programs can be initiated when the vines begin to “run.”

**When vines are small, band applications of fungicide over the crown area are effective and help reduce application costs.**

### **Rust**

**While much has been made about the potential threat posed by the newly introduced Asian soybean rust (*Phakopsora pachyrhizi*), common bean rust, caused by *Uromyces appendiculatus*, is now beginning to show up on south Florida snap beans.** Rust pressure is reported to be high in some areas and will likely be present for the duration of the spring on rust-susceptible varieties. Although many commercial varieties are resistant or tolerant to the races of bean rust currently prevalent in Florida, rust does have the potential for decreasing yield on susceptible varieties. While the strobilurin fungicides are very effective against bean rust, the sterol inhibitors and chlorothalonil are also effective. Either may work as nicely as rotational products. Rotations or tank-mixtures are generally recommended to slow or prevent the development of fungicide resistance.

**It should be noted that sulfur is far more effective against powdery mildew than against rust, and should not be relied upon solely for rust control under high inoculum pressures.** As for soybean rust on snap beans, there is little information regarding the susceptibility of snap beans to the soybean rust pathogen. Reportedly, snap beans may become infected by *P.pachyrhizi* but it is believed that the severity of the disease would be less on snap beans than that which might be observed on soybeans. As of this date, soybean rust has not been reported on snap beans in south Florida.

### **Fusarium**

**Around Southwest Florida, fusarium crown rot** continues to follow a typical pattern for this time of the year, appearing in fields planted to susceptible varieties. Plants characteristically start yellowing and wilt just before first pick. In areas where growers raise water tables for cold protection incidence and occurrence is often high. Fusarium wilt is scattered at low levels in several tomato fields usually well below 1%.

**Respondents in Palm Beach report that fusarium crown rot is quite active, especially in the older plantings.**

### **Sclerotinia**

**White mold is widely present on beans in a number of locations around South Florida.**

**Around Southwest Florida, sclerotinia has slowed but is still common in several pepper fields and at lower levels in tomatoes.**

**In the Manatee Ruskin area, respondents reports finding Sclerotinia in some small plants and in at least one older fall planting still in the ground.** Phyllis Gilreath reports *Sclerotinia sclerotiorum* (or white mold) is not a disease that is seen frequently in the Manatee Ruskin area, probably because of the timing of plantings and weather conditions.

**Sclerotinia is typically a cool and moist-weather disease and quite possible being encouraged by the cool foggy mornings over the past few weeks.** Free moisture is important in the disease cycle. The fungus

overwinters in special survival structures call sclerotia which look like mouse droppings. Affected plants often wilt, either the whole plant or just certain stems, depending on where infection started.

**White mold growth can be seen on the tan stem lesions and if the stem is split, the sclerotia can be found inside.** These sclerotia can survive for up to 7 years in the soil without a host until conditions are right for germination. The disease is then spread by airborne ascospores, carried by wind currents to potential host tomatoes (or other hosts which include peppers, beans, eggplant, potatoes and many other crops).

**The disease requires dead plant tissue for infection to occur, quite often dropped flower blooms or leaves which lodge in leaf axes.** One reason that the disease is seldom seen in the Ruskin area is that during the time environmental conditions are right, plants in the area are still young. Pre-bloom infection may sometimes occur in tomato, but usually this is a result of frost damage or some other mechanical damage that serve as substrates for initiation of the disease. It could also be that the hurricanes from last fall played a role in providing more favorable conditions for this disease to occur in some areas.

**Typical protective fungicides will do little for control of this disease.** Topsin M has a Section 18 label for fruiting vegetables in Florida and has shown good control of Sclerotinia. Good control has also been obtained with Endura. Amistar, Cabrio and Quadris are also labeled for Sclerotinia.

### Mosaic

**Mosaic is widely present on squash around Southwest Florida.** In at least one location, nearly 100% infection has been reported on young seedlings prompting growers to destroy the crop and replant.

**Reports from Homestead indicate that mosaic is increasing in squash and some respondents note that aphid control with Fulfill has not been as consistent as in past seasons.**

### Alternaria Leaf and Pod Spot

**Alternaria leaf and pod spot of beans is widely present in beans growing areas of South Florida.** Infection on the pods has been reported as moderate to high in some areas.

**Lesions on pods usually appear as very small, dark-brown to black flecks.** When examined with a hand lens, these flecks are somewhat raised and cone-like. When only a few flecks occur on a pod, the damage may be insufficient to result in rejection at the packinghouse. Large numbers of unsightly flecks, however, can result in rejection of the entire lot, especially at lower market prices.

**Leaf symptoms first appear as small, water-soaked flecks that rapidly develop into circular to irregular spots with pale-brown centers and reddish-brown borders.**

**Faint, concentric rings may occasionally be visible in older lesions.** As the disease progresses, leaf lesions may merge together leading to large, blighted areas and premature leaf drop.

**Several species of *Alternaria* have been reported as attacking beans but the consensus is that *Alternaria alternata* is probably responsible for most outbreaks in Florida.** Normally this species is a weak pathogen and not as aggressive as *Alternaria solani*, which, causes the devastating early blight of potato and tomato. Ideal conditions for the development of Alternaria leaf spot include high relative humidity, rainfall, and cool temperatures (60 -75 degrees F for daytime highs). Under these conditions, Alternaria leaf spot can result in major losses in snap bean. Severe outbreaks of the disease can be expected from January through March in Homestead, Belle Glade and Devil's Garden growing areas of southern Florida.

**For scouts and others with access to a microscope, the multi-celled, pigmented spores that have both transverse and longitudinal septa (cell walls) and a short "tail" or "beak" are diagnostic of the disease.**

**Beans that are nutritionally deficient in nitrogen and/or potassium are most susceptible as are those planted at high densities with can result in more frequent disease incidence and greater disease severity.**

**Management of Alternaria leaf and pod spot consists of maintaining adequate crop nutrition and avoidance of close between-row and within-row plant spacing.** Fungicides also play a major role in the integrated management of this disease.

**It is particularly important that effective fungicides be applied when pods are small (pin pod stage) in order to avoid infections that will be evident later as pods mature.** Strobilurin fungicides have given good results but should be applied according to the label and rotated with materials with other modes of action to avoid potential problems with resistance. Reports indicate that best control seen in areas that received two applications of Quadris/Amistar.

### **Northern corn leaf blight**

**Low levels of northern corn leaf blight seen in a few isolated areas in the Glades.**

### **Pythium**

**A number of growers have reported problems with pythium after raising water tables for cold protection.** In some cases significant stand reduction has been observed.

### **Tomato Spotted Wilt**

**Respondents in Homestead report that new finds of tomato spotted wilt virus has slowed with many fields in the 1-3% range now and at least one hot spot with an 10% infection rate.**

## **News You Can Use**

### **Biotechnology Appears To Be Withering As A Food Source**

The promise of biotech crops - foods genetically engineered to resist pests and weeds or even to produce drugs for humans - may be going to seed.

After years of significant growth, the number of biotech crops in the regulatory pipeline has plummeted, says a report out today from the Center for Science in the Public Interest, a group that supports a cautious approach to biotechnology.

And CSPI says it takes twice as long today for such crops to be approved by the government than it did in the 1990s. Both the Food and Drug Administration and the Department of Agriculture approve each biotech variety. The FDA makes sure it is safe for human consumption; the USDA looks out for the safety of other plants.

The FDA approved an average of 9.4 varieties a year between 1995 and 1999 but only three per year from 2000 to 2004, CSPI found. The USDA approved 8.2 per year from 1994 and 1999 but only 2.6 per year from 2000 to 2004.

"It's been our experience that there was a decrease in the number of submissions to FDA for a number of years

following the initial wave of products," says Jim Maryanski, the FDA's food biotech coordinator.

This is a controversial issue in both the USA and Europe. Anti-biotech activists believe that engineered foods hold health and environmental dangers, while pro-biotech enthusiasts wax eloquent about better, cheaper and more environmentally gentle crops.

Biotech crops are a significant presence in American agriculture. Ten years ago, there were almost none. Today, most soy, cotton and canola is biotech, as is almost half of the field corn (used primarily for feed and grain), according to government statistics.

Globally, biotech crops increased 47-fold from 1996 to 2004.

But in those four crops, only two genetic traits have been added - herbicide resistance and a built-in pesticide. Though engineering such large-commodity crops made economic sense, experts say the process is too expensive to do in so-called minor crops.

Take lettuce, for example. Consumers don't like weeds in their lettuce, so growers hire hordes of workers to hand-weed fields. An herbicide-resistant variety that lets growers kill weeds without hurting the lettuce would have a huge impact, says Roger Wyse, a plant biologist with biotech venture capital firm Burrill & Company in San Francisco.

"The difficulty is that there are 20 kinds of lettuce, so you'd have to go through 20 different approval processes for a fairly small market. Layer on top of that that no Safeway or Kroger wants to be picketed for selling biotech crops, and it's just not viable," Wyse says.

Agriculture giant Monsanto last year gave up on marketing an herbicide-tolerant wheat - the one potentially blockbuster crop left - in part because of concerns that the public wouldn't accept it.

That was the case with biotech tomatoes and potatoes elsewhere.

The only other biotech crops grown commercially today are tiny by comparison: 10,000 acres of insect-resistant sweet corn (sold as a vegetable), 1,800 of virus-resistant summer squash and 1,100 of virus-resistant papaya.

And new crops coming down the pipeline also are smaller commodity crops. Possibilities in the next five to 10 years include herbicide-resistant sunflowers, soybean and canola for the production of healthier oil; and herbicide-resistant alfalfa and sugar beets.

Bob Buchanan and Peggy Lemaux at the University of California-Berkeley created a hypoallergenic wheat in 1995 that was shelved because of fears that consumers would reject it.

Buchanan is on the FDA's food biotech committee. "We don't have any businesses. We taught China, and now they're going to leave us in the dust," he says.

Agricultural economist David Zilberman at Berkeley says China has planted many acres of biotech crops. And the country is close to developing insect-resistant rice. "China estimates it will save them \$4 billion a year," he says. "And the moment China does it, India will. The train is moving." - Elizabeth Weise, USA TODAY

## **The Society of St. Andrew - Gleaning America's Fields ~ Feeding America's Hungry**

In the aftermath of last year's hurricanes, the work of the Society of St. Andrew in Florida has increased. More Floridians are unemployed and depending on food banks and assistance programs than ever before and they can use your help.

Every fruit and vegetable grower has produce that's culled out, whether for market conditions, blemishes or size. The Society of St. Andrew would like to recover that produce before it's disposed of or plowed under. They can recover small amounts through our gleaning project or large amounts through connections with feeding agencies or sending tractor-trailers to transport it.

The Society of St. Andrew does not ask for the donation of products that are commercially marketable. They seek only the excess, which is not economically or cosmetically marketable, yet is still consumable if recovered quickly.

If you would like to help the Society of St. Andrew combat hunger in Florida, or need more information or have questions, please call Ann Maier, Society of St. Andrew - Florida Regional Director, at 239-275-7815, email [seeks@aol.com](mailto:seeks@aol.com) or Kathy Forth, Society of St. Andrew - Florida Program Coordinator, toll free at 1-800-806-0756, or by e-mail at: [sosaf1@endhunger.org](mailto:sosaf1@endhunger.org). The Society of St. Andrew's web site is: [www.endhunger.org](http://www.endhunger.org).

## Up Coming Meetings

### Palm Beach County

<b>March 9, 2005</b>	<b>General Standards/Core Test Review</b>	8 AM – 10 AM	4 CEUs
	Private Applicator Test Review	1 PM – 3 PM	2 CEU's

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

Contact Laura Powell at 561-996-1655.

### Southwest Florida

<b>February 29 - 30, 2005</b>	<b>Spanish Pesticide Applicator Prep Classes</b>	8:00 AM
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Hendry County Extension Office  
1085 Pratt Boulevard  
LaBelle, Florida

Contact Gene McAvoy at 863-674-4092 for details

Note: Testing will be conducted in English

<b>February 31 – Mar 1, 2005</b>	<b>Restricted Pesticide Applicator Classes</b>	<b>Feb 31 – Core, Private Mar 1 – Row, Tree Aquatic</b>
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Hendry County Extension Office  
1085 Pratt Boulevard  
LaBelle, Florida

Contact Gene McAvoy at 863-674-4092 for details

## Websites

**The Colorful Past of Okeechobee County** – This is an historically interesting site containing news articles published by The Daily Okeechobee News which provides an interesting glimpse in life in Florida the “old” days. Go to <http://www.geocities.com/TheTropics/Shores/4374/history.htm>

**The Farmers Almanac On-line** - City folks, as well as country farmers, prize the Farmers' Almanac highly. People still consult it as frequently as did generations long ago. The 2005 Farmers' Almanac is filled with entertaining short stories, good cooking, fun, facts, forecasts, timely household tips, calendars for fishing, gardening and more. Check it out at <http://www.farmersalmanac.com/>

## Quotable Quotes

### Reflections of Great Minds on Government

I contend that for a nation to try to tax itself into prosperity is like a man standing in a bucket and trying to lift himself up by the handle. – Winston Churchill

A government, which robs Peter to pay Paul, can always depend on the support of Paul. – George Bernard Shaw

Foreign aid might be defined as a transfer of money from poor people in rich countries to rich people in poor countries. -- Douglas Casey

Government is the great fiction, through which everybody endeavors to live at the expense of everybody else. – Frederic Bastiat

Government's view of the economy could be summed up in a few short phrases: If it moves, tax it. If it keeps moving, regulate it. And if it stops moving, subsidize it. – Ronald Reagan

The only difference between a tax man and a taxidermist is that the taxidermist leaves the skin. -- Mark Twain

## On the Lighter Side

### How to Create an American.....

First you get a very large pot, and mix in some Brits, some French, a bunch of Irish, then add a few million Africans, stir up some Indians, then simmer. The mixture will produce Yankees, Southerners, and about 20 various states.

Then bring to a boil, repeating the following:

"All men and women are created equal regardless of their race, creed or color."

"Everyone has an equal right to succeed or fail, based solely on their efforts, and not because of what class or color they are."

"Government exists to serve the people, and not vice versa."

"One has the right to express one's views, even if no one agrees with them."

"If one works hard, they can improve their lot in life, and that of their children."

"A free economy is the best means to prosperity."

"Justice and fairness are the same thing."

After the mixture cools down, add Poles, Czechs, Hungarians, Germans, Swedes, Norwegians, Turks, Lebanese, Mexicans, Chinese, Japanese, Vietnamese, and about 100 other varieties and spices from around the world, and mix thoroughly, keeping as much of the original flavor of each of the ingredients as possible. (Note, some of the ingredients will add themselves.)

The end result will be a very interesting experiment that constantly changes its texture, yet is unquestionably "American" no matter where it is found, no matter what color it is, and no matter what language is spoken.

**Contributors** include: Joel Allingham/AgriCare, Inc, Karen Ambrester/SWFREC, Kathy Carbiener /Agricultural Pest Management, Jim Connor/SWFREC, Bruce Corbitt/West Coast Tomato Growers, Dr. Kent Cushman/SWFREC, Dr. Phyllis Gilreath/Manatee County Extension, 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, 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. Pam Roberts/SWFREC, Dr. Nancy Roe/Farming Systems Research, Wes Roan/6 L's, Kevin Seitzinger/Gargiulo, Jay Shivler/ F& F Farm, Ken Shuler/Stephen's Produce, Ed Skvarch/St Lucie County Extension, John Stanford/LNA Farm, Mike Stanford/MED Farms, Dr. Phil Stansly/SWFREC, Eugene Tolar/Red Star Farms, Dr. Charles Vavrina/SWFREC, Mark Verbeck and Donna Verbeck/GulfCoast Ag, and Alicia Whidden/Hillsborough County Extension.

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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