



UNIVERSITY OF
FLORIDA

E X T E N S I O N

Institute of Food and Agricultural Sciences

Hendry County Extension

PO Box 68 LaBelle, Florida 33975-0068

Phone (863) 674-4092

SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

December 20, 2005

A seasonally cool weather pattern punctuated by warmer days between fronts continues to rule South Florida weather bringing many cloudy days to South Florida. Daytime highs have been mainly in the 70s with a few days reaching the low 80s. Cooler temperatures at night brought lows into the 40s and 50s.

Rainfall totals for the period were highest on the east coast with most areas reporting in excess of 2 inches for the period. Accumulations at west coast FAWN stations were lower with all areas reporting less than an inch location.

Fall crop harvesting continues in central and southern Peninsula areas are increasing seasonally. Yields and pack out in planting affected by Wilma are very light with many growers reporting yields of 1/3 to half the norm. Post-Wilma planted fields are looking very good but are still weeks from harvest.

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
Balm											
12/6 – 12/19/05	42.2	79.3	0.60	0.0	10.4	3.0	0.9	7.8	4.0	52.1	74.4
Ft Lauderdale											
12/6 – 12/19/05	51.1	84.0	2.40	0.0	0.0	0.0	12.7	4.5	1.6	13.5	1.5
Fort Pierce											
12/6 – 12/19/05	45.2	82.1	2.72	0.0	0.0	14.5	2.1	6.3	30.6	8.5	55.9
Homestead											
12/6 – 12/19/05	46.5	83.7	2.18	0.0	0.0	0.2	0.5	1.5	8.6	34.0	8.8
Immokalee											
12/6 – 12/19/05	43.4	82.6	0.03	0.0	10.4	3.2	8.8	11.7	1.5	6.7	40.3

Wishing you all a Blessed and Merry Christmas and a Happy New Year

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Snap beans, sweet corn, cucumbers, eggplant, peppers, squash, tomatoes, watermelons and specialty items are moving to market. Volumes are light are reported to be light from most areas. Many growers that "saved" some Wilma damaged fields are having second thoughts now. Crops that survived for the most part have not produced much of a crop. Even fields that appeared to start flushing out quickly did not set much fruit and it has not sized very good. Yields and quality have been poor for most tomato and pepper harvested so far. Quality is starting to get better but it will still be a few weeks before any significant volume of good quality produce is harvested in locations of South Florida most affected by Wilma.

The short-term forecast from the National Weather Service in Miami calls for cloudy conditions to persist through Wednesday when cooler drier air pushes into the peninsula bringing sunshine and cooler temperatures. Another front is forecast to move south on Christmas Day bringing what might possibly be the lowest temperatures of the season. For additional information, visit the National Weather Service in Miami website at <http://www.srh.noaa.gov/mfl/newpage/index.html>

Insects

Aphids

Respondents in Homestead report a big jump in aphids over the past few weeks on beans, eggplant pepper, strawberries and squash and note a increase in squash mosaic as well.

Growers and scouts around Immokalee report that aphid pressure is increasing, dramatically in some locations. Some peppers and leaf crops have been sprayed.

Reports from the Glades indicate that growers are beginning to find a few green peach aphids migrating into the area, but report that no large colonies are being found at this time.

The green peach aphid, *Myzus persicae* (Sulzer), is found throughout the world and is viewed as a pest principally due to its ability to transmit plant viruses. The green peach aphid readily infests vegetables and can be transported long distances by wind and storms.

The life cycle varies considerably. Development can be rapid, often 10 to 12 days for a complete generation, and with over 20 annual generations reported in mild climates. In Florida, populations cycle continuously on annual plants.

The rate of reproduction is positively correlated with temperature. As aphid densities increase or plant condition deteriorates, winged forms are produced to aid dispersal. The nymphs that give rise to winged females (alatae) may be pinkish. The dispersants typically produce about 20 offspring, which are always wingless. This cycle is repeated throughout the period of favorable weather. In Florida, this cycle repeats continuously, though in the northern areas of the state the aphid development rate slows greatly during the winter.

In the autumn, in response to change in day length or temperature, winged male and female aphids are produced which disperse in search of host plants. Females arrive first and give birth to wingless (apterous) egg-laying forms (oviparae). Males are attracted to oviparae (egg-producing females) by a pheromone, capable of mating with several females, and eggs are produced. The oviparous female is 1.5 to 2.0 mm in length, and pinkish in color.

Parthenogenic reproduction is favored where continuous production of crops provides suitable host plants throughout the year, or where weather allows survival on natural (noncrop) hosts. The average temperature necessary for survival of active forms of green peach aphid is estimated at 4 to 10° C.

The green peach aphid feeds on hundreds of host plants in over 40 plant families. Vegetables that are reported to support green peach aphid include artichoke, asparagus, bean, beets, broccoli, Brussels sprouts, cabbage, carrot, cauliflower, cantaloupe, celery, corn, cucumber, fennel, kale, kohlrabi, turnip, eggplant, lettuce, mustard, okra, parsley, parsnip, pea, pepper, potato, radish, spinach, squash, tomato, turnip, watercress, and watermelon. Numerous flower crops and other ornamental plants are suitable for green peach aphid development. In warmer climates such as Florida the aphids do not seek out overwintering hosts, but persist as active nymphs and adults on hardy crops and weeds throughout the winter months.

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

Green peach aphids can attain very high densities on young plant tissue, causing water stress, wilting, and reduced growth rate of the plant. Prolonged aphid infestation can cause appreciable reduction in yield of root crops and foliage crops. Early season infestation is particularly damaging to potato, even if the aphids are subsequently removed.

Contamination of harvestable plant material with aphids, or with aphid honeydew, also causes loss. Blemishes to the plant tissue, usually in the form of yellow spots, may result from aphid feeding.

The major damage caused by green peach aphid is through transmission of plant viruses. Indeed, this aphid is considered by many to be the most important vector of plant viruses throughout the world. Nymphs and adults are equally capable of virus transmission but adults, by virtue of being so mobile, probably have greater opportunity for transmission. Both persistent viruses, which move through the feeding secretions of the aphid, and non-persistent viruses, which are only temporary contaminants of aphid mouthparts, are effectively transmitted. Kennedy et al. (1962) listed over 100 viruses transmitted by this species.

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

Transmission of non-persistent viruses such as cucumber mosaic virus can sometimes be reduced by coating the foliage with vegetable or mineral oil. Oil is postulated to inhibit virus acquisition and transmission by preventing virus attachment to the aphid's mouthparts, or to reduce probing behavior. Oil seems to be most effective when the amount of disease in an area that is available to be transmitted to a crop is at a low level. When disease inoculum or aphid densities are at high levels, oils may be inadequate protection.

Hundreds of natural enemies have been recorded, principally lady beetles, flower flies, lacewings, parasitic wasps, and entomopathogenic fungi. Most are general predators, moving freely among green peach aphid, other aphids, and even other insects. There is a strong association between high aphid densities and sudden population decrease following the appearance of lady beetles, wasp parasitoids, or entomopathogenic fungi. Various studies that selectively excluded or killed beneficial organisms have demonstrated the explosive reproductive potential of these aphids in the absence of biological control agents, thus demonstrating their value in reducing damage potential.

Excessive and unnecessary use of insecticides should be avoided. Early in the season, aphid infestations are often spotty, and if such plants or areas are treated in a timely manner, great damage can be prevented later in the season. In some cases, use of insecticides for other, more damaging insects sometimes leads to outbreaks of green peach aphid. Inadvertent destruction of beneficial insects is purported to explain this phenomenon, but aphid resistance to some types of insecticide may also be involved.

The wide host range of green peach aphid makes crop rotation a difficult tactic to implement successfully. Crops grown down-wind from infested fields are especially susceptible because aphids are weak fliers and tend to be blown about. Infested crops should be destroyed immediately after harvest to prevent excessive dispersal.

Leafminers

Growers and scouts in Southwest Florida report that leafminer pressure remains moderate in most locations although a few scattered hot spots have been reported.

Respondents from the Manatee/Ruskin area indicate that leafminer pressure remains steady across the area.

Reports from the Homestead area note heavy leafminer pressure in a range of crops including beans, eggplant and tomato.

East Coast growers also report increasing leaf miner activity on tomatoes and eggplant.

With the on-set of cooler weather across the peninsula, growers across the state can expect to see an increase in leafminer pressure. Leafminers attack many row crops but are particularly damaging on celery, crucifers, cucurbits, okra, potato and tomato. Florida growers report that leafminers are the second most important tomato insect pest especially in south and central production areas. Leafminers are present for much of the year in Florida. In south Florida, populations peak between October and March while in central Florida they are a problem in both spring and fall.

An integrated pest management program that stresses conservation of natural enemies is the primary tactic for the successful control of leafminer. Chemical control is difficult due to the feeding habits inside the leaf of the host plant. Insecticides that specifically target the leafminer are recommended as use of broad-spectrum materials may decimate beneficial insects including those that attack leafminer. This often results in a larger leafminer problem if the pesticide reduces field densities of leafminer parasites.

Fortunately, populations are usually prevented from reaching truly damaging levels by a number of parasites that attack leafminers. Several parasites for this insect have been recorded in Florida, but parasitic wasps such as *Opius*, *Diglyphus* are most common. Wasp larvae develop on or in the leafminer larva or pupa. The host ceases to feed and the parasitoid egg or larva is visible through the leaf epidermis using a hand lens against strong light. In scouting fields, growers should be careful to note the number of parasitized mines before deciding to apply insecticides.

Due to its feeding habit, this pest is resistant to many insecticides. Cyromazine (Trigard) alternated with abamectin (Agrimek) are effective against leafminer in tomato. Both of these products have limited crop registrations and must not be used on unregistered crops. Spinosad (Spintor) has also given good results and is labeled on a wide range of crops. Some other materials that may be used to conserve beneficials include azadirachtin (Neemix) and insecticidal oils. Both products are approved for use by organic growers.

Field sanitation is an important control tactic that is overlooked. When crops are not present in the fields, leafminers can survive on a variety of broad-leaf weeds. These plants serve as reservoirs for pest.

Whiteflies

Growers and scouts around Homestead indicate that whiteflies are widely present in beans, eggplant, squash and tomato.

Reports from Ruskin indicate that whitefly numbers continue to increase increasing with more tomato yellow leaf curl virus showing up. There is a major concern among vegetable specialists that without a freeze, crops will be nursed along all winter with resultant higher whitefly and virus going into spring. Whiteflies are also building up in squash.

Respondents in Palm Beach indicate that whiteflies are starting to build up in eggplant and tomato in some places and are also present in squash. Reports from the Glades indicate very low whitefly numbers mainly in beans at present.

Around Immokalee, whitefly numbers remain below normal levels in most locations although reports indicate that they are beginning to build up in places and scouts report finding higher numbers of adults and nymphs in older fields.

As fall crops come off, it is important to practice good sanitation to avoid movement of whiteflies into later plantings and a buildup in populations that carry over to the spring crop.

Growers are urged to continue to practice the following 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.

Pepper Weevils

Pepper weevils are now being reported from several locations around Southwest Florida. Weevils are primarily being found in older pepper fields but at least one report noted finding weevils feeding on the terminal leaves of young plants.

Reports from Manatee County indicate that pepper weevils are still present in peppers.

A few weevils continue to be found around Homestead.

Worms

Scouts in Homestead report problems with range of worms including beet armyworm, southern armyworm and tomato fruit worm in eggplant, pepper and tomato and growers report problems with melon worms and pickleworms on cucumbers and squash.

Growers and scouts in the Glades indicate that fall armyworm pressure in corn has dropped off and is generally below normal in most plantings.

Reports from Manatee County indicate that worms still around and continue to note some problems with worms in cabbage.

Around southwest Florida, growers and scouts indicate that worm pressure is fairly low with some new hatches of beet and southern armyworms being reported. Melonworms are still present in cucurbits in some locations.

Respondents on the east Coast report that worm pressure is low in most locations.

Broad mites

Around Southwest Florida, broad mites have flared up in pepper and to a lesser extent in pepper in several locations.

Growers in Palm Beach continue to report problems with broad mites in peppers and eggplant.

Respondents in the Manatee/Ruskin area indicate that broadmite activity picking up in peppers.

Reports from Homestead indicate that broad mites are present in low numbers in eggplant but expectations are that numbers will begin to increase.

Thrips

Over the past few weeks, chili thrips have been identified on ornamentals in at least 7 counties ranging from Palm Beach to Marion. At a meeting held this week in Apopka, experts from around the state agreed that it was almost a given that this pest is now (unofficially) established in Florida.

Adult thrips are small about 0.5 – 1.2 mm long. It is difficult to recognize this thrips with the naked eye, and definitive identification is best accomplished at approximately 40 to 80 x magnification. Eggs are about 0.075 mm long and 0.070 mm wide, and are inserted inside plant tissue. The egg stage lasts for 6-8 days, which is followed by has two larval stages (1st and 2nd instars) that last for 6-7 days. The prepupal period is short (~ 24 h) and the pupal period lasts 2-3 days. The larvae are off-white. The adults are pale grayish-white with incomplete dark stripes on the dorsal surface of each abdominal segment. The life cycle is completed in 14-20 days. The chili thrips female oviposits 60 to 200 eggs in her lifetime at the rate of 2-4 eggs per day.

Chili thrips attacks all above ground parts of its host plants, and prefers the young leaves, buds and fruits. It has been reported to attack a wide range of plants with more than 100 recorded hosts from 40 different families including beans, melons, peppers, strawberries, and tomato as well as wide range of ornamentals and fruits including citrus. Heavy feeding damage turns tender leaves, buds, and fruits bronze to black in color.

Damage leaves curls upward and appear distorted. Infested plants become stunted or dwarfed, and leaves with petioles detach from the stem. The abundance of chili thrips is low in the rainy season, but becomes high during the dry season.

It is important to check plants with abnormal growth. At the initial stage of infestation, the underside surfaces of the leaves become shiny. These leaves soon become discolored and curly. Collect 5-20 leaves from the symptomatic plants and place them in a ziplock bag to prevent adults from escaping. Send these samples to an expert for further processing to establish or confirm their identity.

Go to <http://www.doacs.state.fl.us/pi/enpp/ento/chillithrips.html> and <http://www.mrec.ifas.ufl.edu/LSO/thripslinks.htm> for more information on this pest.

Diseases

Bacterial Leaf Spot

Growers and scouts indicate that bacterial spot continues to plague tomato and pepper growers around Southwest Florida.

Respondents in Homestead report very active bacterial spot on tomato, especially on low quality transplants that came in with several diseases as well as virus.

Growers and scouts on the East Coast indicate that bacterial spot is “everywhere on everything.” Wet weather and wet nights have lead to moderate to high incidence and severity is in a number of places.

Reports from Manatee County indicate that bacterial spot remains a problem in several locations and has been exacerbated by rain and foggy weather in recent days.

Target Spot

Growers and scouts report increasing incidence of target spot around Southwest Florida. Target spot has flared in many tomatoes, with storm damage foliage now enclosed in new growth providing target spot the ideal environment to get started. Incidence and occurrence is increasing and some fruit lesions have been noted.

Reports from the Bradenton area indicates that target spot is still a problem on tomato around the area.

Target spot often appears as plants approach maturity and develop large canopies. Remember that tank-mix sprays of copper fungicides and maneb do not provide acceptable levels of target spot control. Recommended fungicides include various chlorothalnil formulations (Bravo, Echo, Bravo Ultrex, Bravo Weather Stik and Ridomil Gold/Bravo).

Early Blight

Reports from growers indicate that early blight is beginning to increase on tomatoes in a number of areas around South Florida.

Alternaria

Dr. Ken Pernezny, Plant Pathologist UF/IFAS EREC reports seeing “lots” of Alternaria on snap beans in the Glades. He notes due to replanting, it is primarily on the foliage. However, he expresses concern that once pods form on the plants, the fungus will jump to the pods and produce the unsightly black pimples that throw the pods out of grade. It is important that growers apply effective fungicides when pods are small in order to

minimize Alternaria pod spot. Growers and scouts indicate that a single strobilurin spray when pods are about three inches long seem to be providing good control.

Fusarium Crown Rot

Fusarium crown rot is beginning to affect plants in a number of fields around Southwest Florida where it is typically a problem.

Downy Mildew

Downy mildew is causing on cucumbers and squash in several locations around Immokalee.

Respondents in Homestead report a noticeable increase in downy mildew on squash and cukes in recent days.

Cucumber producers in the Ruskin area report problems with downy mildew and note that it is not responding to traditional controls.

Powdery mildew

Growers and scouts around Southwest Florida report increasing incidence of powdery mildew in squash with moderate to high incidence and severity in some places.

Respondents on the East Coast are reporting unusually high pressure from powdery mildew on squash for so early in the season.

Producers in the Bradenton area continue to report problems with powdery mildew on squash.

Phytophthora

Growers and scouts on the East Coast report that phytophthora remains a problem on pepper and cucurbits in a number of locations.

Around Immokalee, reports indicate that phytophthora is still causing problems in some pepper fields.

Sclerotinia

Respondents in Palm Beach report finding a few scattered cases of sclerotinia beginning to show up in tomato.

Tomato Yellow Leaf Curl Virus

Tomato yellow leaf curl virus is present at mostly low levels in most south Florida production areas. Incidence is low but is slowly increasing in a number of areas.

Growers in Homestead report a 1- 3% infection rate in some fields.

Scouts around Immokalee indicate that TYLCV increasing slowly with some fields reaching 5% infection rate.

Growers in several locations around South Florida have expressed complaints about infections on young transplants only in the ground a few days, which seem to be originating in the plant house.

News You Can Use

UF/IFAS Plant Disease Clinic

Please note that the UF/IFAS SWFREC Plant Disease Clinic located in Immokalee will be closed from December 22 – January 2 for the Christmas and New Years holidays. All efforts will be made to provide a diagnosis for samples submitted by December 22 by December 23.

Dr Roberts notes that the lab is equipped and prepared to run late blight race characterization testing and invites growers and scouts to submit samples if the disease shows up.

As of January 01, 2006, in accordance with University guidelines, an invoice will be attached to the completed reports you receive from the Plant Disease Clinic-SWFREC. The charge for each sample submitted is \$20.00. The Florida Extension Plant Disease Clinic (FEPDC) is a fee-based service provided by the University of Florida and SWFREC Plant Pathology program. Please see UF-IFAS publication RF-SR007 for more information regarding the fees. These funds are used to support the clinic operations. Your help is appreciated with this matter.

A Brief Summary of the Papers Presented at the Annual International Research Conference on Methyl Bromide Alternatives And Emission Reductions - October 31 - November 3, 2005. San Diego, CA

Every year since 1994, the location of the Annual International Research Conference on Methyl Bromide Alternatives and Emission Reductions has alternated between the cities of San Diego, CA and Orlando, FL. Typically, three to four hundred people, principally scientists, attend the meeting on an annual basis. The objectives of these meetings, and purpose of this report, is to provide a forum for an annual summary of new research findings regarding the ongoing methyl bromide phase-out and the evaluation of replacement pest control strategies.

This year the meeting started with plenary sessions addressing commodity group concerns, legislated activities of the Montreal Protocol, updates of the current federal EPA re-re-registration process for many of the alternative fumigants (metham sodium, chloropicrin, methyl iodide, dazomet, and others), as well as methods for developing new fumigant regulatory policies in California. Overall, I think it fair to say that there was tremendous user group anxiety with EPA, who is expected to impose new product label constraints for many if not all of the alternative fumigants (reduced application rates, requirements for additional personal protective equipment for field workers, and or expanded buffer zones between agriculturally treated and urban areas). Any new restrictions will surely mandate a more intensive, overall re-evaluation of alternatives and reduced rate technologies for pest control efficacy and crop response consistency. For California, regulatory concerns were still being expressed regarding obtaining application permits for local fumigant use, township caps limiting amounts of fumigants used within a defined area, off-site out-gassing of applied fumigants and potential new requirements for expanded buffer zones. The opening plenary session concluded with Dr. Jim Butler, a prominent atmospheric scientist on global ozone depletion processes, who indicated that any further phase-out reductions of methyl bromide beyond the current 70% would contribute only marginally towards restoration of the earth's ozone layer.

Alternative Chemicals: It was clear from the San Diego meetings that a considerable amount of national and international research continues to evaluate the pest control efficacy and yield benefits of many of the currently registered fumigants such as Chloropicrin, Telone C35, InLine, and metham sodium (Vapam) alone and in combination. Most of the studies evaluating Telone C35 or Chloropicrin reported consistency and similarity of marketable yields with that of the methyl bromide and chloropicrin standard. Sequential drip application of metham sodium after Chloropicrin or Telone C35 was shown to improved weed control and crop yield in a number of studies (Gilreath et al.). In general, the efficacy of the alternative tactic was influenced by the method

and rate of application, as well as by the number and intensity of dominant pests present. It was again reiterated that additional management of some hard to control pest species (usually weeds) will almost certainly be required in the form of preplant, at-plant, or even post-plant chemical applications. Several alternatives were declared an appropriate short and medium term replacement to methyl bromide in environments with low levels of lethal soil borne pathogens. There were however concerns re-expressed about pest build up, situations of high initial pest levels and consistent long-term performance of these alternatives in these high-risk areas (Aranda et al., Lampinen et al.).

This year, not unlike others, there were numerous reports of studies characterizing environmental fate, emission, and soil concentration and distribution (dispersion) of the fumigants with time. New this year were studies which evaluated drip applied emulsified concentrate (EC) formulations of methyl bromide and chloropicrin, chloropicrin EC, and methyl iodide and chloropicrin EC formulations. In most studies, the broad-spectrum pest control activity of methyl iodide was reported as equal to that of methyl bromide and chloropicrin.

Renewed research emphasis was again observed in field trials with drip application methods (chemigation) of the fumigant alternatives. In general and as reported at previous meetings, many of the evaluations of the drip applied fumigants demonstrated the poor ability of these compound to diffuse at toxic concentrations far beyond the point of application (water front) and that improved application techniques (i.e., two tapes per bed) will be required to improve efficacy of the drip applied alternatives in sandy soils. In general, fumigant concentrations were higher in the center of the bed than at the edge, and pest survival generally increased with depth and lateral distance from the point of drip emission.

Virtually Impermeable Films (VIF): With the expected annual decrease in methyl bromide availability and Critical Use Exemption (CUE) approved levels, studies to investigate the use of more gas retentive, virtually impermeable films has intensified. Significant new advancements in our understanding of VIF and metalized mulch technology was reported by Dr. Jim Gilreath who showed that the metalized mulch had significant VIF qualities, retaining higher methyl bromide concentrations in the soil for longer periods of time, and providing effective nutsedge control with reduced rates of methyl bromide comparable to that of true VIF mulch film. All of the other studies with VIF combined with methyl bromide chloropicrin rate reductions of 20 to 50 percent showed no real significant loss of pest control or crop yield compared to standard rates with low density polyethylene mulch. Some studies did report limits to which methyl bromide use rates could be reduced (50-75%) without loss of pesticidal efficacy and crop growth performance. Other studies demonstrated an apparent loss of fumigant synergy with chloropicrin when methyl bromide use rates were reduced below a critical level within a formulation (i.e., 50:50). All in all, it was predicted that during periods of increased price and reduced availability of methyl bromide, VIF and metalized mulched would become an integral component of the fumigated, raised bed, mulch covered production systems of the US. Another very important consideration of all barrier mulch technology was presented by Dr. Jim Gilreath, who demonstrated that to use these more gas retentive mulches required changes in application technologies to insure accurate and uniform dispensing of such low fumigant application rates (i.e., 5- 6 gallons per acre). The proposed mandated changes involved smaller delivery tubing size (1/16 inch diameter.) and orifice plates at the top of the gas knives to insure adequate backpressure and uniform delivery (flow) and distribution from one gas knife to another.

NONCHEMICAL: Tomato grafting, usually in combination with other pest management tactics, was declared a viable alternative to methyl bromide for many of the Mediterranean countries. Given its overall performance, particularly in combination with other crop management tactics, it was identified as possible justification for reducing methyl bromide levels within critical use exemption requests (Besri et al.). In Florida studies, Dr. Dan Chellemi demonstrated that long term, land management practices could have profound effects on soilborne pest problems and tomato yields. For example, allowing land to remain undisturbed as weed fallow between successive crops led to significant increases in damage from soilborne diseases and root-knot nematode which then lowered marketable yields of tomato. While nematode problems were reduced, maintaining a clean, weed-free fallow condition between successive tomato crops did not reduce the overall impact of soil borne diseases. Bahiagrass rotations significantly reduced disease pressures but the rotational effect lasted only a single season.

NATIONAL MANAGEMENT STRATEGY: And finally, there was a considerable amount of time and energy committed to the discussion and initial development of a U.S. National Management Strategy, defining the timetable and information requirements to complete the phase-out of methyl bromide and the transition to alternatives. It was clear from these and other presentations, that adoption of alternative chemical strategies and other IPM methods are likely to be expedited only if appropriate guidelines and recommendations for their use are developed which minimize performance inconsistency and grower uncertainty.

These were the lessons learned and the information gleaned from the 2005 Alternatives to Methyl Bromide meeting in San Diego. Submitted by Dr. J.W. Noling

Lake Is Hurting Because of Development to the North

Recently some Southwest Floridians have been pointing fingers and portraying it as a local issue — the polluting of the Caloosahatchee River and Gulf by overflow from Lake Okeechobee. As most growers and scientists realize, it is actually a statewide issue.

There is a lingering misperception that farmers in the Everglades Agricultural Area are somehow responsible for the problems in Lake Okeechobee and the St. Lucie estuary, and therefore, farmers — particularly sugar farmers — should have to suffer the consequences. Certain groups are deliberating fostering this falsehood.

The farming communities on Lake Okeechobee are as concerned as coastal residents over the lake's polluted waters. After all, this is currently our only source of drinking water. But if we are ever to solve the water problems of the lake and estuaries, the public needs to be better informed.

The high water levels in the lake have been caused by several years of above-average rainfall both on the lake and north of the lake, as well as an unprecedented series of hurricanes. Hence the term, "natural disasters." The northern watershed draining Orlando through the Kissimmee River basin into the north end of Lake Okeechobee is responsible for over 97 percent of the inflow to the lake and 97 percent of the phosphorus load. That water is the main culprit in the poor water quality damaging the lake and the estuaries.

Flooding farm fields south of the lake will not solve these environmental problems.

First, flooding the entire farming area would only lower the lake by a foot or so without having to build vast levees to protect surrounding areas from floodwaters.

Second, water currently leaving the farming area is part of a highly successful clean-up program to restore the Everglades. Until the quantity and quality of water draining into the lake from the north is dealt with, you would be merely moving the devastation of the polluted water from Lake Okeechobee through the farms to the Everglades.

The ecosystem has been changed so drastically to accommodate development and 7 million people that flooding phosphorus-rich farmland would cause more harm than good to the system as a whole and still would not prevent large releases to the estuaries during extremely wet conditions.

Justifying the idea of flooding and destroying 500,000 acres of productive farms, fields and communities at a cost of billions, these same folks rant about sugar subsidies.

For the record, there are no subsidies to sugar farmers. Read the farm bill. Prices are set in the marketplace, based on supply and demand. There are import limits on foreign sugar producers dumping their surplus sugar here below its production costs.

In response to hurricane damage to Louisiana and Florida's cane crops, the government significantly increased foreign sugar imports to ensure a stable and affordable price to consumers. That is why you have not seen sugar prices increasing at the supermarket.

Pointing fingers and filing lawsuits will only prevent finding real solutions and further delay any real progress in dealing with the problems of Lake Okeechobee and the estuaries.

Naples Daily News, Oct 18, 2006

Local beekeepers looking to provide pollination services to watermelon producers. Contact Heidi or Steve Eisele, PO Box 610, Felda, phone 941-661-5038.

Job Opportunities

Southwest Florida packer/shipper has immediate openings for the following positions:

Sales Assistant – Entry sales assistant needed. At least one year of industry related experience preferred. Responsibilities include assisting current sales staff with workload, servicing current accounts and establishing new accounts.

Shipping Supervisor – must have knowledge of computers and produce business. Industry related experience required.

Truck driver – fulltime truck driver needed. Class A CDL drivers license is required. Must be willing to travel to Georgia for six weeks in spring and fall, remainder of the year is local driving in southwest Florida.

For inquiries, contact Rita at 239-657-2227 or fax resume to 239-657-6037.

Up Coming Meetings

Manatee County

January 11, 2005 Frost/freeze Protection Workshop 9 am – 2 pm.

Manatee County Extension Service
1303 17th Street West
Palmetto, Florida

This workshop is applicable to nursery, blueberry and some vegetable crops. For more information, contact Sylvia or Phyllis at 941-722-4524. RSVP requested.

Other Meetings

**February 4-8, 2006 American Society of Horticultural Science
Southern Region Annual Meeting**

Wyndham Orlando Resort
Orlando, Florida

For more information, go to <http://ashs.org/regional/index.html>

May 21-23, 2006

18th International Pepper Conference

Palm Springs, California

Go to <http://www.internationalpepper.com/> for details

September 17- 21 2006

Cucurbitaceae 2006

Asheville, North Carolina

For more information visit <http://www.ncsu.edu/cucurbit2006>

Websites

A Christmas Greeting Card for you – go to <http://www.jacquielawson.com/viewcard.asp?code=0212320003>

Quotable Quotes

If you want the rainbow, you gotta put up with the rain.

The early bird may get the worm, but the second mouse gets the cheese.

To steal ideas from one person is plagiarism; to steal from many is research.

If you lend someone \$20 and never see that person again, it was probably worth it.

We could learn a lot from crayons. Some are sharp, some are pretty and some are dull. Some have weird names, and all are different colors, but they all have to live in the same box.

On the Lighter Side

Truths to Live By

As a child of God, prayer is kind of like calling home every day.

Blessed are the flexible, for they shall not be bent out of shape.

Do the math. Count your blessings.

God wants spiritual fruit, not religious nuts.

Silence is often misinterpreted, but never misquoted.

Laugh every day; it's like inner jogging.

The most important things in your home are the people.

Growing old is inevitable, growing up is optional.

There is no key to happiness. The door is always open.

A grudge is a heavy thing to carry.

He who dies with the most toys is still dead.

We do not remember days, but moments. Life moves fast, so enjoy your precious moments.

Nothing is real to you until you experience it, otherwise its just hearsay.

It's all right to sit on your pity pot every now and again. Just be sure to flush when you are done.

Surviving and living your life successfully requires courage. The goals and dreams you're seeking require courage and risk-taking. Learn from the turtle, it only makes progress when it sticks out its neck.

Be more concerned with your character than your reputation. Your character is what you really are, while your reputation is merely what others think you are.

Contributors include: Joel Allingham/AgriCare, Inc, Karen Armbruster/SWFREC, Kathy Smith/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/Taylor & Fulton, Loren Horsman/Glades Crop Care, Bruce Johnson/General Crop Management, Dr. Mary Lamberts/Miami-Dade County Extension, Leon Lucas/Glades Crop Care, Bob Mathews, 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/ C&B Farm, Ken Shuler/Stephen's Produce, Ed Skvarch/St Lucie County Extension, John Stanford/Thomas Produce, Mike Stanford/MED Farms, Dr. Phil Stansly/SWFREC, Eugene Tolar/Red Star Farms, Mark 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.

Gene McAvoy

County Extension Director / Extension Agent III

Regional Specialized Agent - Vegetables/Ornamental Horticulture

Hendry County Extension Office

PO Box 68

LaBelle, Florida 33975

Web: <http://hhort.ifas.ufl.edu/>

863-674-4092 phone

239-860-8811 mobile - Nextel Agnet 28950

863-674-4097 fax

GMcAvoy@mail.ifas.ufl.edu

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

Thomas Produce Company

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

Robert Murray
Florida Favorite Fertilizer

787 Overriver Drive
North Fort Myers, Florida 33903
Phone 800-457-0807 Cell 239-707-2272

LaBelle Plant World, Inc.

Tommy Smith: President
Scott Smith: Vice President
We Grow Plants for the Pros
LaBelle, Florida Phone 863-675-2020

Fred Heald
Farmers Supply Inc

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

Gargiulo

Growers Shippers Importers Exporters
David Pensabene: Production Manager
Naples Operations
Phone 239-353-0300 Fax 239-353-3407

Damon Shelor
ProSource One

Immokalee, Florida
Office 239-657-8374 Cell 239-707-6142
E-mail: dshelor@ProSourceOne.com

Ted and Trudy Winsberg
Green Cay Farms, Inc.

Rt. 1, Box 331B
Boynton Beach, Florida 33437-9727
Phone 561-499-5345

Ed Early
Dupont Agricultural Products

5100 South Cleveland Avenue
Fort Myers, Florida 33907
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Charlie Mellinger, Ph.D.
Phone 561-746-3740 Fax 561-746-3775

Rachel Walters
Bayer CropScience

32871 Washington Loop Road
Punta Gorda, FL 33982
Phone 941-575-5149 Cell 239-707-1198

Glen Kaufman
Paramount Seeds, Inc.

PO Box 1866
Palm City, Florida 34991
Phone 772-221-0653 Fax 772-221-0102

Walter Preston
Manatee Fruit Company

PO Box 128
Palmetto, Florida 34220-0128
Phone 941-722-3279 Fax 941-729-5151

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Gaylon Pfiesser
BASF Corporation
11806 Marblehead Drive
Tampa, Florida 33913
Office 813-818-9594 Fax 813-818-8694
Mobil 813-967-0024

PREV AM
Vegetable Pest/Disease Control
Darrell Thorpe 352-483-6569
Donovan Pullen 817-995-3234
Len Duane 863-221-4725
[UAP - AGRILIANCE - TRIANGLE/CPS](#)

Mike Seese
KeyPlex Products
Morse Enterprises Limited Inc
151 SE 15th Road
Miami, Florida 33129
800-433-7017 Mike Cell 439-910-4837

Jack E Kilgore II
Chemical Dynamics
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Fort Myers, Florida 33919
Cell 239-707-7677 Nextel: 158*17*24422

Chuck Obern
C & B Farm
CR 835
Clewiston, FL 33415
Office 863-983-8269 Fax 863-983-8030
Cell 239-250-0551

Bart Hoopingarner
Cerexagri
11933 73rd St. E
Parrish, FL 34219
Cell 941-737-7444 Fax 941-776-1844
bart.hoopingarner@cerexagri.com

Jay Hallaron
Chemtura Corporation
321-231-2277 cell 407-256-4667 cell
jay_hallaron@cromptoncorp.com

Jared Revell
United Agri Products
116 Jerome Drive
Immokalee, Florida
239-657-3168 office 239-253-0585 cell

Dr. Henry Yonce
KAC Agricultural Research
Scouting, Consulting
Research
386-736-0098 work 386-527-1124 cell
HDYONCE@msn.com

Ted Holmes
Southern Regional Sales Manager
CDMS
ChemCheck - FoodCheck
Phone 941-746-6087 ted@cdms.net

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