A couple of weak cold fronts have moved through SW Florida over the past two weeks dropping nighttime lows into the mid to lower 40’s for a few nights each time. In general, temperatures have been seasonable ranging in the mid 70’s in the day and the 50’s at night, although there were a few days toward the beginning of the period when the mercury reached the low 80’s.

Mostly dry weather has prevailed over the past two weeks. Precipitation has been negligible in most areas. The FAWN Weather Station in Immokalee recorded a total of 0.2 inch for the period. There have been a few isolated showers with slightly higher accumulations reported in some coastal areas. Total rainfall for the season is several inches below normal and some growers have experienced problems with fertilizer salt accumulation.

Despite the fact that several mornings have seen dense fog across the area, we have seen little increase in disease pressure. Growers have been applying preventative applications of fungicide and presumably this has helped.

The five-day forecast calls clear conditions, with low temperatures in low 40’s tonight, followed by a gradual-warming trend over the next five days.

Harvest of most crops is proceeding at this time with beans, cucumbers, eggplants, melons, peppers, pickles, squash, sweet corn and tomatoes now moving to market. Crops are looking good for the most part. Insect and disease pressure remains relatively light.

Leafminers remain widely present at medium to high levels across the area. While some respondents have noted a modest decline in leafminer pressure, others are continuing to report severe pressure particularly in newly set spring crops. In addition to tomato, leafminers have been active in cucurbits, peppers, potato, and other vegetables. Pressure has been particularly severe in areas where new plantings are in close proximity to old fall crops. The situation has also been aggravated by the poor tomato market, which has caused some growers to abandon fields or reduce spraying schedules in response to low prices.
The fact that the tomato market is down can influence growers to make decisions based on their immediate bottom line and not consider the importance of ongoing resistance management, or the effect their actions may have on their upcoming plantings.

By doing nothing or not controlling leafminers (and other pests) can make it difficult or almost impossible to regain control if the market turns around. In addition by not controlling leafminer in older plantings, new plantings of most crops (tomatoes, peppers, melons) will become a magnet for leafminers as they go in the ground and the older crops are burned down.

All those hungry flies will be looking for a place to go and will become less selective to their crop preference. Heavy infestations can greatly reduce the photosynthetic activity in plants resulting in stunting, contribute to increased disease infections, and may even be fatal to young plants.

A grower may be aware of the consequences of leaving pests unchecked but because of market conditions will seek to use the most inexpensive control available. By attempting to save in the short run, growers can make the situation worse. Pyrethroids are often the least expensive control method but can wipe out beneficials and result in pest populations rebounding faster and stronger than ever.

Most growers are aware of the need to rotate control measures. If they choose to rotate their pyrethroid application with another class of product, the flaring effect can put undue performance expectations on the subsequent product in the rotation due resulting extreme pest populations. What can make this even worse is the temptation to use less than labeled rates of the typically more expensive bio-rational products. This approach can accelerate the development of pest resistance to a product.

By now most growers are aware of techniques to delay pest resistance but a reminder from time to time can’t hurt:

- Practice good sanitation. Eliminate old crop residues immediately after harvest.
- Closely monitor/scout and use insecticides once thresholds have been exceeded.
- Rotate products in different classes. Trigard, Agri-Mek and Spintor are all in different classes
- Do not apply more that 2 consecutive applications of a single product.
- Use labeled rates, most experts agree that too low or too high rates are to be avoided. (Agri-Mek is 8oz/acre, Spintor – 6 to10 oz /acre, and Trigard – 1/6 lb. per acre)
- Use soft insecticides that do not significantly harm natural parasites or predators, when ever possible.

A number of respondents have reported a significant increase in silver leaf whitefly populations over the past two weeks. Most counts are in the range of 1 – 3 whiteflies per plant, although there have been some higher counts of up to 10 whiteflies per plant in some cases.

There have been several reports of melon thrips (Thrips palmae) showing up in pepper. Counts have ranged from 1 – 2 per bloom to as high as 6 – 8 per flower in some instances. Both fruit and foliage damage has been reported.

Melon thrips are pests of most fruiting vegetables grown in SW Florida with the exception of tomatoes. They inhabit flowers as do other thrips species from which they are difficult to distinguish without a microscope. Adults and especially larvae will also be found on foliage whereas the other thrips species generally won't.

The damage appears as a fine russetting, which can be seen particularly at the stem end of fruit between the locules and on the underside of leaves where large veins come together. Melon thrips can build up on successive crops and reach damaging levels in mid or late season.
Problems can often be associated with the use of broad-spectrum insecticides, especially pyrethroids. Chemical control is often ineffective; therefore preventive measures are preferable. Non-chemical controls include:

- shortened crop cycles,
- prompt crop destruction accompanied by an insecticide application,
- rotation with non-susceptible crops, and
- avoidance of the unnecessary use broad-spectrum insecticide applications to conserve natural enemies.

Moderate levels of winged aphids continue to be seen across the area. Populations are reportedly building in several crops including pepper, potato and squash. Colony formation has been observed in pepper. Aphids have been implicated with virus problems in pepper and squash.

Broad mites are still around on pepper and eggplant in widely scattered locations and there are continuing reports of persistent flare-ups here and there.

Several growers are experiencing with spider mites on eggplant. Occurrence is sporadic but damage has been moderate to high in some cases.

A few worms are being seen here and there. Most growers are reporting little to no worm pressure at this time although there have been some reports of loopers and fall and southern armyworms in some places.

Diamondback moths are being reported in crucifers. Damage has been light.

Dr Pam Roberts has reported pepper mild mottle virus (PMMV) has been detected by serology in bell pepper plants grown in two commercial fields in Southwest Florida. One field had very low incidence (<1%) however the disease incidence in the field at another site was estimated at 30%.

No symptoms were evident on the foliage of the plants. Symptoms on the fruit appear as depressed, light tan to brown necrotic spots or stripes and slight yellow mottling. Mature fruit color was orange instead of red that is typical for the variety. Plant and fruit size was apparently unaffected in these infections although size reduction and malformation of fruit and mottle symptoms on leaves are reported for PMMV. Photos of infected fruit can be seen on the web at http://extlab7.entnem.ufl.edu/PestAlert/pdr-0113.htm.

Pepper mild mottle virus is a tobamovirus. The virus is transmitted mechanically and is apparently seedborne. An outbreak in Canada several years ago was reported to occur because of planting infected or contaminated seed.

Control recommendations include using virus-free seeds and to avoid mechanical movement of the disease by workers and equipment. The disease has been detected in Florida previously.

The incidence of tomato yellow leaf curl remains low. Most growers are seeing only isolated occurrences of single infected plants here and there. The low incidence of TYLCV being seen in SW Florida this year can undoubtedly be attributed to the concerted and aggressive efforts of SW Florida growers in combating this disease. The nearly universal use of Admire in the plant house and at transplant to control whiteflies, combined with an effective crop free interval in the summer and diligence in scouting and rouging infected plants has paid off.

It is important that growers maintain their vigilance. Grower complacency resulting in any appreciable relaxation of efforts in could easily result in significant increases in the incidence of this disease in the future.
A number of **foliar diseases** are being reported in **tomato**. Several respondents have indicated the presence of **early blight**, **gray leaf spot** and **target spot**. **Incidence and damage is low**.

**Bacterial leaf spot** is being seen sporadically across the area. Active infections are **largely restricted to lower leaves** that touch the plastic and remain wet for long periods.

A few cases of **gray wall** on **tomato** continue to be reported around Immokalee.

**Downy mildew** as well as **powdery mildew** is being reported primarily on squash and cucumber from several locations. **Angular leaf spot** and **alternaria leaf blight** is also being reported in cucurbits. **Incidence is low to moderate** and crop damage varies accordingly.

Several growers are reporting significant levels of **fusarium crown rot** on tomato. **Damage** is reportedly **severe in some fields** where the disease has traditionally been a problem. Several respondents have observed reported that the incidence of fusarium crown rot seems to be higher than in past years. **Fusarium wilt** has also been noted in **potato** particularly later plantings made in cool soils. **Incidence is low**.

**Powdery mildew** has been reported in **beans**. **Incidence is low** and **occurrence sporadic**.

**Early blight** and **leaf spot** is showing up in **potato** in scattered locations. **Incidence is generally low** and **damage minimal**.

There have been **no reports of late blight** in SW Florida yet this season. The disease has been reported on crops in Homestead. Growers are advised to take precautions and apply protective fungicides especially when weather conditions are conducive to the development of the disease.

A **number of viruses** have been detected in pepper including **potato virus Y**, **potyvirus** and **tobacco etch virus**. These may be spread from older plantings and nearby Solanaceous weed hosts, such as **nightshade**, **horse nettle** and **ground cherry** by **aphids**. Use of insecticides to control aphids and use of JMS stylet oil to prevent transmission of virus is recommended.

Given the fact that the **early tomato crop** is **nearly finished**, growers are again **reminded of the importance of sanitation and prompt destruction of crop residues in an IPM program**.

The **prompt destruction** of a crop at the end of the season will immediately end the production of disease inoculum and insects and **eliminate the spread of diseases and pests** to any other host plants in the vicinity. Plowing or disking under infected plant debris helps not only by covering up the inoculum but also speeds up the disintegration of plant tissue and kills the pathogen. **Field sanitation** will be come an increasingly important tool to growers in face of the impending loss of methyl bromide – whose ease of use and effectiveness in controlling a wide range of problems allowed us to neglect some of these practical common sense pest management techniques.

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**January 25, 2000**

**WPS –Train the Trainer** - 8:30 AM - Noon
Dallas B Townsend Agricultural Center, LaBelle
**Contact** Gene McAvoy or Sheila Griffith at 941-674-4092

**January 27 –28, 2000**

**Certified Crop Advisor - Examination Preparation Course**
Citrus Research and Education Center, Lake Alfred
**Contact** Mary Hartney, Florida Fertilizer and AgriChemical Association @ 941-293-4827 for more information.
March 6, 2000

2000 POST HARVEST INSTITUTE - This year's topic is “Innovations in Fresh Produce Transportation” – the conference will be held at the University of Florida in Gainesville as well as the Tropical Research & Education Center (Homestead), Southwest Florida Research & Education Center (Immokalee) and Indian River Research & Education Center (Ft. Pierce) via live, video-conferencing. For more information, contact Ms. Abbie Fox, at 352-392-1928, ext. 235 or Gene McAvoy at 941-674-4092 for information about the Immokalee site.

Web sites:

The USDA Office of Pest Management Policy has posted a number of crop profiles and pesticide databases on their web site at http://ipmwww.ncsu.edu/opmppiap/. Completed crop profiles for Florida vegetables include bell peppers carrots, celery, potatoes, snap beans, strawberries, sweet corn, tomatoes, and watermelons. Profiles on other crops are available for other states as well.

Gempler’s (the folks that publish out that useful mail order catalog that all of us have used one time or another) has an online Integrated Pest Management newsletter – IPM Solutions – Product News for the IPM Professional. Visit the site at http://www.ipmalmanac.com/ipmsolutions/. The IPM Solutions newsletter is published at least 5 times a year covering government policies related to IPM; educational articles on such topics as pest monitoring, soil sampling, and the importance of collecting weather data; IPM "Success Stories" from growers and others who have saved money by implementing IPM; and new diagnostic tools, books, and other resources that can help enhance an IPM program. If you would like to receive a free subscription, just e-mail to ipm@gemplersmail.com.

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The SW 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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