March 4, 2000

Mild conditions have prevailed across the region over the past two weeks with temperatures averaging a few degrees above normal. The return to warmer weather has given a much-needed boost to many crops whose growth had been retarded by below normal temperatures through much of January and early February.

Daytime temperatures have ranged from the high 70’s to mid 80’s with nighttime temperatures ranging in the 50’s at night. Several mornings have seen foggy conditions. The five day forecast calls for more of the same with a 20% chance of rain possible on Saturday afternoon and evening.

Dry weather has been the rule over the past two weeks. The FAWN Weather Station in Immokalee recorded no precipitation over the period. Warmer weather and dry conditions are increasing the need for irrigation across the board. There have been several reports of growers having difficulty in irrigating and/or with fertilizer salts.

Major vegetables harvested during the week include potatoes, tomatoes, peppers, cucumbers, snap beans, squash, sweet corn, and eggplant. Yields and quality are generally good to excellent. Insect and disease pressure continues to be light.

The weather summary for February from the FAWN Weather Station is given below:

<table>
<thead>
<tr>
<th>Date</th>
<th>Air Temp °F</th>
<th>Rainfall (inches)</th>
<th>Hours Below Certain Temperature</th>
<th>(hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min</td>
<td>Max</td>
<td>40°F</td>
<td>45°F</td>
</tr>
<tr>
<td>February, 2000</td>
<td>34.3</td>
<td>85.7</td>
<td>0.03</td>
<td>11.7</td>
</tr>
</tbody>
</table>

Thrips populations are reportedly on the increase across the entire area. Most respondents are not reporting any major infestation yet, while others have reported numbers reaching threshold levels and requiring treatment in some areas. The main thrips species being observed are Florida flower thrips – (Frankliniella
Although there have been scattered reports of melon thrips \textit{(Thrips palmi)} as well. Thrips have been reported in several crops including tomato, pepper, eggplant and cucurbits. On pepper and eggplant, the main concern is physical feeding damage to the fruit. With cucurbits, the greatest damage is in plant growing points.

**There may be as many as five thrips species in a field at one time.** If \textit{Thrips palmi} comprises 5 to 10 percent of the population, there is usually little cause for concern because other thrips will compete for the same resources on the plant.

**Crop rotation** is important in minimizing thrips infestations. But the **choice of insecticides** used in controlling other pests **is important, too.** In many crops growers try to use soft insecticides such as the Bt's for control of armyworm and other lepidopterous insects. These materials are easy on natural enemies that feed on thrips. The use of Admire in peppers has given excellent control of thrips, as well as aphids. We've also had good thrips control with Agri-Mek and SpinTor, which controls leafminers as well.

However, if weather conditions or pest pressure makes it impractical to use soft insecticides, growers may turn to harsher insecticides. **Harsh chemicals** such as the synthetic pyrethroids, Lannate and Orthene can flare thrips populations. In such cases, populations may shift leaving 50 percent to 60 percent \textit{Thrips palmi}, which is decidedly a more troubling situation. Careful monitoring of thrips and beneficial populations and judicious use of insecticides are essential in minimizing problems with these unique pests.

**Thrips populations generally increase in vegetables following the citrus bloom** when they migrate to nearby field. This has not yet occurred locally.

**Whitefly populations** remain generally low although several respondents have noted a slight increase in whitefly populations. There have been a few isolated reports of whitefly numbers reaching fairly high levels in some older tomato fields. In general, **populations remain well below levels seen in previous years.** Although **recommended thresholds** are set at 10 adults/plant – the presence of TYLCV suggests lower thresholds. It is important to remember that whitefly populations can develop rapidly at this time of year.

**Leafminer pressure has begun to abate** across the area, although many growers are continuing to report scattered problems. **Leafminers** have been particularly active in cucurbits, in addition to sporadic activity in tomato peppers, potato, and other vegetables. Low tomato prices have lead tomato growers to be more tolerant accepting low to moderate levels of stippling.

**A widespread increase in worm activity has been reported across the area.** There have been significant hatches of mainly southern armyworm but also beet armyworm, tomato fruitworms and loopers over the past few days.

**Pinworms** are being widely reported across the area, although most have been in traps and few problems have been seen in the fields. Where present, **pinworm counts** seem have leveled off with 5 or fewer moths/night/trap being reported. Growers should begin to apply controls once **thresholds of 5 adults per trap per night** are observed.

The **pinworm** is a small, yellowish-gray or green, purple-spotted caterpillar belonging to the moth order of insects. The larva is only about 1/4 inch long when grown. It, like the leafminer, tunnels through the leaf, eating away the chlorophyll tissue and leaves a crooked tunnel behind. The pinworm also rolls and ties the leaf tips together, differing from the leafminer in that it does not leave a trail of fecal material in its tunnel but comes to the entrance to make depositions of wastes.
Tomato pinworm can be one of the most severe pests confronting Florida tomato growers. This is a good time to consider strategies for managing this pest because the populations usually begin developing in the early spring. The typical cycle that frequently leads to problems is as follows: adult pinworm moths deposit eggs on plant foliage. Once the eggs hatch, the larvae begin to feed. The larva drops to the soil to pupate and several generations of the moth pest can be expected each year.

Populations often occur initially around field margins, and feeding is largely confined to foliage. As the numbers increase, however, more of the field is likely to be infested. Plant damage results in a burned or scalded appearance of the plant. Severe infestations can result in fields looking as though they had been sprayed with herbicides. The worst part is that the worms begin to attack the fruit. Obviously, any fruit damaged by a pinworm is judged unmarketable.

Fortunately, several effective tools are now available for dealing with this pest. In many instances, the base of a good pinworm management program consists of using a mating disruption pheromone. The males are attracted to the pheromone and become so disoriented they fail to locate the females. Consequently, no mating occurs. Several pheromone products have given good results for several seasons. They are available in two forms, a sprayable formulation and a tag that's attached to the plants or strings.

Although mating disruption works great in many instances, it is not the best solution in all cases. Just because trap counts are at or above threshold levels doesn't automatically call for treatment. In many cases if a farm has old plantings of tomato, eggplant, or potato close to spring tomato, it might be more effective to destroy the old plantings – which provide pinworm breeding grounds. Mated moths flying into a field will not be affected by mating disruption. Double crop melons on old tomato plastic often provide good breeding grounds due to the many volunteer tomato plants.

Recent developments in insecticide chemistry also bring new promise for managing the tomato pinworm. AgriMek from Novartis and SpinTor from Dow AgroSciences, have given relatively good pinworm control. Control is often difficult due to the protected feeding habits of the pest inside the leaf and the pests habit of rolling and tying of the leaves makes it more complicated. Correct selection, application and timing of insecticide applications are critical if populations are to be kept low. Under leaf coverage is also necessary for control. Use of oil may allow rates to be reduced and enhance efficacy.

Moderate to high levels of winged aphids continues to be reported across the area. Sizeable populations continue to be observed in several crops including eggplant, leafy greens, pepper, potato, tomato and melons. Colony formation has been observed in a number of locations.

Aphids can produce tremendous populations within a short period of time. One reason for this is that the population in Florida is composed entirely of females, and potentially each individual is a producer of more female offspring. The females do not need to mate to produce offspring and this phenomenon further increases their biotic potential.

They give birth to live young which sidesteps the time-consuming egg stage. Adult females deliver several female nymphs every hour. Within a few days, the nymphs are mature and begin giving live birth to new female nymphs. The population literally "snowballs" and the plants can be covered with aphids in a short period of time.

Aphids are generally spread by females, which can grow wings when conditions are proper and fly or drift in the wind to new plant hosts. This act results in them being even more dangerous especially when they are infected with virus.

Control of aphids is not particularly difficult if a few precautions are observed. It is necessary to select a recommended material for their control, but even more so, a thorough coverage of all the plant surfaces is mandatory. Aphids prefer the undersurface of the leaves and young developing buds as feeding sites. Thus they
are protected from much of the insecticidal spray unless it is aimed at these crevices and places. Even a few females left uncontrolled can quickly lead to new populations.

Several growers are experiencing problems with spider mites on eggplant, tomato, as well as melons, cucumbers and other crops. Occurrence is sporadic and damage is low to moderate in most cases.

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

Pepper weevil numbers have reached high levels in some older plantings. Some respondents have noted the appearance of weevils in young pepper although no major problems are currently being reported.

Cucumber beetles are being reported in leafy vegetables and watermelon. Incidence is sporadic and damage low, although in at least one instance cucumber beetles have been linked to bacterial wilt in watermelon.

Late blight activity appears to have abated. Incidence is sporadic and damage is low. It seems to have popped up in several locations around the same time several weeks ago. Growers have responded with an aggressive control program and little further spread of the disease has been noted. No late blight has been reported on tomato.

TYLCV remains low. Most growers are still seeing only isolated occurrences of single infected plants here and there. Several respondents have noted a slight increase in the incidence of TYLCV. Incidence remains well below 1% in most cases. However, whereas a few weeks ago it was necessary to cover 50 –100 acres to find one infected plant, it is now possible to find one infected plant in every 5 – 20 acres in a number of locations. Grower complacency resulting in any appreciable relaxation of control efforts in could still result in significant increases in the incidence of this disease in the future.

Early blight has been reported on tomato. Incidence and occurrence is low.

Some bacterial leaf spot activity is being reported across the area. Incidence and damage is low and occurrence patchy. In general, however, problems with foliar diseases on tomato and pepper have been minimal.

Some alternaria leaf blight and gummy stem blight has been noted in watermelon. Incidence is low.

Growers continue to report high incidence of fusarium crown rot in tomato. Damage is severe in some fields particularly, where water levels were bought up for frost protection and where fusarium has traditionally been present.

Alternaria and downy mildew has been reported on crucifers in several locations. Incidence and damage is low.

Good News for Tomato Growers – Robert Gregg of Zeneca Ag Products reports that they are supporting the request of the Florida Fruit and Vegetable Association and Florida growers for Special Local Need (Section 24) labeling to allow the use of Gramoxone for tomato vine burn-down. It is hoped that this request will be approved within two to three weeks. Once approved by the Bureau of Pesticide Certification this action will be effective for the next 90 days.

Zeneca will follow up by applying to the EPA for Section 3 labeling to permit the long-term use of Gramoxone for tomato vine burn-down in Florida.
Note: Several growers have expressed difficulty in obtaining the SLN labeling for Diquat. We have copies of the label at the Hendry County Extension Office and would be happy to fax you one if needed. You can also download this and all Zeneca labels from their website http://www.zeneca.com

Up Coming Meetings:

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 Southwest Florida Research & Education Center (Immokalee) and other Research & Education Centers 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.

March 8-9, 2000 Pesticide Applicator Training and Testing - 8:00 AM – 5:00 PM
March 8 – CORE and Private Applicator
March 9 – Ag Row Crop, Tree Crop and Aquatic
Dallas B Townsend Agricultural Center, 225 Pratt Boulevard, LaBelle
Registration begins at 7:30 A.M. A $5.00 registration fee will apply.
This is a great opportunity for obtain CEU’s in CORE (3.5) and other pesticide applicator license categories. CCA/CEU’s will be offered as well.
For more information, contact Sheila Griffith at 941-674-4092

March 15, 2000 "Selection and Management of Cover Crops in Vegetable Production"
Southwest Florida Research & Education Center, Immokalee - 11:00 AM - Noon
For more information, contact Gene McAvoy at 941-674-4092

March 22, 2000 Vegetable Growers Meeting – 5:30 – 7:30 PM
“Management of Cucurbit Diseases” and “An Overview of Phytophthora Blight of Pepper and Eggplant”
Southwest Florida Research & Education Center, Immokalee
For more information, contact Gene McAvoy at 941-674-4092

March 25, 2000 Utilizing Organic Materials in Horticultural Production Systems Workshop
Southwest Florida Research & Education Center, Immokalee – 10 AM – 4:00 PM
2 CEU and 5 CCA credits will be offered
Reservations Required – Contact Pam Watson at 941-658-3405

Web Sites:

NewCROP – the website of the Center for New Crops and Plant Products at Purdue University – provides information, references, links and much more on new and specialty crops.
http://newcrop.hort.purdue.edu/newcrop/

Guide to Medicinal and Aromatic Plants – this site also sponsored by the Center for New Crops and Plant Products at Purdue University provides a wealth of information on medicinal and aromatic plants including herbs. Site furnishes information on production, seed sources and more.
http://newcrop.hort.purdue.edu/newcrop/med-aro/default.html

Citrus and Vegetable Magazine – is now online at http://www.citrusandvegetable.com/home/main.html You can find news articles, an archives of past articles, a calendar of upcoming events, a listing of Florida agricultural links and more.
Florida Department of Agriculture – [http://www.fl-ag.com](http://www.fl-ag.com) – Access to a wide variety of information about all facets of Florida agriculture. Among other things growers can access here is a listing of bonded agricultural dealers.

Florida Fruit and Vegetable Association – [http://www.ffva.com](http://www.ffva.com) – Access to a wide range of information and updates of interest to growers. This site provides links to a fairly extensive listing of web sites of interest to Florida producers as well as a listing of useful weather sites.

Chemically Speaking – is an monthly online newsletter produced by the UF/IFAS Pesticide Information Office. It provides up to date information on pesticide issues including registrations and label changes. Visit Chemically Speaking at [http://www.fshn.ifas.ufl.edu/pest/news.html](http://www.fshn.ifas.ufl.edu/pest/news.html)

EPA Home Page – EPA is moving ahead rapidly on pesticide reviews under FQPA – stay abreast with what is happening at [http://www.epa.gov/pesticides/op/](http://www.epa.gov/pesticides/op/)

Free Music – checkout the MP3 craze that is sweeping college campuses across the US. Download your favorite songs. Over 500,000 titles available. [http://www.napster.com](http://www.napster.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](http://www.ifas.ufl.edu) as a service to the vegetable industry.

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