Rainfall has been extremely variable over the past few weeks. Although the FAWN Weather Station in Immokalee recorded a total of 8.70 inches of rain for the month of July, many areas were quite dry for the period.

Total precipitation appears to have been highest in the interior regions between around Immokalee and Clewiston while coastal areas have reported lesser amounts. In general, the drought, which has plagued the area since last year, continues to persist despite locally heavy showers. Area wide, this year’s total rainfall is several inches below the expected average yearly accumulation to date.

Daytime highs have hovered in the high 80’s to low 90’s with nighttime temperatures consistently in the mid to lower 70’s.

Growers are preparing land and laying plastic for fall crop planting with afternoon showers and isolated wet field conditions delaying some activities.

IMMIKALEE Weather Monthly Summary:

<table>
<thead>
<tr>
<th>Date</th>
<th>Air Temp °F</th>
<th>Rainfall (inches)</th>
<th>Hours Below Certain Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>July, 2000</td>
<td>70.4 - 94.0</td>
<td>8.70</td>
<td>0.0 0.0 0.0 0.0 0.0 0.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.0 0.0 60°F 65°F 70°F 75°F</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>207.3</td>
</tr>
</tbody>
</table>

HOPE YOU ALL HAD A SAFE AND RESTFUL SUMMER

HANG ON TO YOUR HATS – HERE WE GO AGAIN
Growers are reporting that some suppliers have reduced methyl bromide availability to 25% less than that allocated last season. Other suppliers have not followed suit but conversations indicate reductions in supply can be expected as we approach the legislated January 2001 date for a 50% reduction in methyl bromide production. Depending on demand and available supplies, this reduction may effectively seem greater than 50% to some users.

In addition to reduced availability of methyl bromide, growers can expect to pay higher prices for remaining supplies of methyl bromide. UF/IFAS research and extension personnel as well as methyl bromide suppliers recommend that growers seriously consider their potential alternatives at this time. Growers are urged to begin testing methyl bromide alternatives on at least a portion of their acreage.

At our May vegetable growers meeting, which focused on methyl bromide alternatives, Dr. Jim Gilreath, summed up the situation nicely by stating that growers should not wait around for some magic bullet. He advised that all the tools that a likely to be available to growers are available now and growers will have to learn how to use these to their best advantage. MB alternatives will certainly involve some changes in your crop management program and it would be wise begin conducting on-farm trials to see what’s involved and how these alternatives might be successfully incorporated into your operation. There is a learning curve to overcome in any transition and growers would be well advised to begin the process now.

Methyl Bromide Alternatives

At a recent Methyl Bromide Alternatives meeting at the new USDA-ARS facility in Ft. Pierce, a number of overviews were given on the various Methyl bromide alternatives that are currently being researched. Below is a brief summary of some of those presentations.

Telone: Since 1993 there have been approximately 109 field trials and 25 grower demonstrations around the state. In over 95% of the tomato trials, yield with Telone has been equal to or greater than with MBr. In peppers, 100% of the Telone trials have yielded at least equal to the MBr control. Average yield from all the grower demonstration trials was about 97% of that with MBr. Future issues include PPE, which is being addressed with the broadcast vs. in-row application, setbacks that are particularly difficult for small growers, herbicides for use with Telone and possible alternative formulations (i.e. an EC formulation). Broadcast applications of Telone may have some benefit for double cropping because the deeper application may be more effective in controlling nematodes for a longer period. In addition, the broadcast application will also effectively treat the row middles, providing better control of nematodes and diseases, thus reducing or slowing their migration back into the beds. Also, it allows greater application flexibility and reduces the number of workers in the field with the extensive PPE. For effective broadcast fumigation, Dow recommends adequate moisture with a perched water table 14-18" or deeper. Soil should be wet prior to application in order to get disease and weed seed in an active state (similar to MBr). A soil surface crust helps retain moisture. Allow 14 days before working the ground for bedding and plastic operations. The Yetter® application equipment applies the Telone up to 12" deep. It will cut through old plastic and string and does not dry out the soil as it seals directly after injection. (Joe Eger and Jerry Nance, Dow AgroScience)

Metam: Metam is sold under a variety of names including vapam, busan, kapam and sectagon. It is one of the MBr alternatives being investigated because of the lack of herbicide products with crops other than tomatoes. How does Metam work? Metam is an MITC generator. MITC is a contact biocide, meaning it has to contact the organism to kill it, thus the importance of good distribution. The conversion of metam to MITC is dependent on soil temp, soil moisture, initial concentration and the presence of some metal ions in the soil. Metam moves in the water phase in the soil, thus the need for adequate moisture at application. Once it's converted, MITC moves in the air phase with movement in the soil being very slow and only for short distances. So, you need water to move it and activate it, but in the gaseous state, water is working against you. However, water can help seal in MITC. This varied response to water may explain some of the inconsistency in efficacy in some past trials. A soil
temperature between 40 and 90 F is recommended. Reaction is faster in warm soils, so it's important to cover quickly.

Under very wet or cool conditions, conversion slows, possibly creating too low a concentration for efficacy but a longer residual, which could damage crops. Efficacy depends on the soil type, moisture, temperature, distribution, concentration and duration, and target pests. Weeds are the hardest to kill. A number of application methods have been used for metam. The most uniform application was achieved when metam was applied to the bed; roto-tilled and then the bed was reshaped. Drip application has not produced good results due to lack of movement in the bed. The chemical only moved about 4" from the drip tube, giving poor control. This may explain some of the inconsistencies that growers have observed with use of metam in cropping situations. (Jim Gilreath, GCREC, Bradenton)

**Soil Solarization:** This alternative has evolved from full field tarping to becoming a part of the bed-making operation. The only difference is that no fumigant is used and clear plastic is used, then painted white prior to planting. Soil solarization is primarily used for fall production due to the temperature/time requirements for thermal death of soil pests. Nutsedge needs temperatures in excess of 113F for 84 hours. Root-knot nematodes need 149F for 1 hour. Rhizoctonia requires 113F for 4 hours or 122F for 30 minutes. In Florida, soil temperatures can reach 140F at the surface and 128F at 2". After 4", it drops off until at a 6" depth, it's just breaking 100F, seldom reaching 113F. It would thus appear that solarization would not be effective in Florida, but in research plots, yields are sometimes good. So what other mode of action could be involved other than direct thermal death? There may be an indirect effect by weakening the pest so it can't compete as well. In some trials, nutsedge did germinate and would grow under the plastic on cloudy days, but get burned back on sunny days. After several such cycles, the plant was no longer really growing or competing with the crop. There may also be a release of certain volatile compounds from crop residue and organic matter in the soil. One example given was cabbage residue heated by soil solarization, resulting in release of a number of volatile compounds which could have a deleterious effect on soil pests. Soil solarization should not be considered a universal replacement but could be viable in fall production in an integrated approach in fields where production practices have encouraged maintenance of soil health (i.e. cover crops, etc.). General recommendation is 6 to 8 weeks of solarization. Other key application points include good soil moisture (both for pest activity and heat transfer) and bed orientation for maximum heating. Drip irrigation tubing may need to be buried just below the soil surface because it can melt when placed directly under and in contact with the clear plastic mulch. (Dan Chellemi, USDA-ARS, Ft. Pierce)

**Tillam:** This is an old herbicide that has not been widely used in Florida due to widespread use of methyl bromide. Tillam is only labeled for tomatoes. The recommended rate is 4-lbs. a.i./A or 5.33 pts/A. It should be applied uniformly and incorporated immediately and thoroughly to the depth of the bed. Rototillers work best. Field cultivators are good except in wet soil. To avoid hot pockets in the bed with resultant crop damage, be sure to thoroughly incorporate. Do not apply in a band in front of the bedders. Soil should be moist but not wet. If the soil is too wet, it will not mix well. If too dry, it will not mix well, and will volatilize. Tillam will not control emerged weeds and will not control all weeds, but nutsedge is a strong point. There have been recent changes in the Tillam label to allow for hand transplanting which most tomato grower's practice. The workers who are on the setter, planting the tomatoes by hand, must wear chemically resistant gloves (category A waterproof). The old label restricted Tillam's use to mechanically transplanted tomatoes only. (Henry Yonce, Zeneca)

**Other Herbicides:** The use of Roundup Ultra pre-plant on nutsedge on top of mulched beds was discussed. Currently there is a 72-hour waiting period before planting following this use. (Editor's note: This waiting period should probably be considered a minimum based on previous work on Roundup degradation on plastic mulch.) Research on nutsedge competition indicates that with only 25 yellow or purple nutsedge plants/sq. meter (less than 1 square foot), tomato yield is decreased by 10%. Fifty yellow nutsedge plants or 75 purple per sq. meter will decrease yield by 70-80%. Most of the yield reduction is in the medium size fruit. Watermelons are less tolerant and only 6 nutsedge plants per square meter will effect a 10% yield reduction, whereas
25 plants result in a 70% reduction. With watermelons there is a critical time when control is most important, i.e. 3-6 weeks after transplanting. After 6 weeks, there is little yield reduction from emerged nutsedge plants. Preliminary results indicate pepper is also less tolerant of nutsedge competition. There are a number of potential herbicide materials that are in the research channels that have potential for use in a methyl bromide alternatives program. (Bill Stall, IFAS, Gainesville)

**Chemical Fallow with Roundup:** In fields where nutsedge is a problem, chemical fallow with Roundup Ultra may help reduce the nutsedge population in the absence of methyl bromide. Annual weeds less than 6" tall are controlled with 1 qt./A. Perennials may require 2-5 qts./A. For troublesome weeds, control is best achieved early at the 3-4-leaf stage. At the 4-5-leaf stage, that nutsedge plant is starting to produce tubers; therefore, the longer you wait, the more tubers produced. Tuber formation is also temperature and day length dependent. Research indicates that repeated applications at a low rate work better than a one-time application at a higher rate. Three applications at 1 quart/A are as effective for control of yellow nutsedge as 3 applications at 2 or 4 quarts/A. The higher rate will be needed for purple nutsedge as it's harder to kill; thus, it's important to know which species you have. The sequence is as follows: After harvesting is complete, disk the field and allow weeds to germinate and grow to the desirable size (3-4 leaf). Spray with Roundup Ultra, then wait until the herbicide has been translocated and begun working (approximately 3 weeks). Then disk again to produce a new flush of weed growth and when actively growing, make a second application of Roundup Ultra. For especially heavy infestations, a third application may be necessary. Rates are 1 to 1.5 qts/A at 3-10 GPA for yellow and 3 qts/A for purple. This low rate technology (LRT) is designed to reduce the carrier volume in order to increase the concentration in the spray. This higher concentration increases efficacy and consistency, especially under stress conditions. The higher concentration also counteracts the antagonism of hard water. (Clair Erickson, Monsanto)

**Biological Control Materials:** There have been several biological control agents researched over the years, some of which show some promise for use in vegetable crops, while others had an inadequate market and were pulled. Dr. Biosedge is a rust fungus that can contribute to the management of yellow nutsedge. It is difficult to produce and only works on sedge in the area where it was produced. (Work several years ago in Manatee County indicated that this would work better as a fallow treatment due to the deleterious effect of routine fungicide applications on the fungus.) Smolder is an experimental material composed of Alternaria spp., which is being tested as a control measure for dodder (Cuscuta spp.) in tomatoes and peppers. Phomopsis amaranthicola has been studied for control of pigweed. The fungus causes leaf lesions that coalesce and move onto the petioles causing leaves to drop and stems to topple. It is specific to the genus Amaranthus. Dactylaria higginsii is an effective biological control agent for nutsedges. It is active on all Cyperus species except the ornamentals. Exserohilum and Dreschlera are agents being studied for grass control. These agents are being developed in a cooperative effort between R. Charudattan, Univ. of Florida and E. Rosskopf, USDA, Ft. Pierce, FL. The work on biological materials is a relatively new and very exciting field which holds promise for the future. (Erin Rosskopf, USDA-ARS, Ft. Pierce)

Methyl Bromide Alternatives Update thanks to Phyllis Gilreath: Manatee Vegetable Newsletter May/June 2000

**EVALUATING NEW PRODUCTS**

It is that time of year again; vendors promoting various products will visit growers. Anyone, who has every had the opportunity to visit one of the trade shows or who has flipped through one of the vegetable magazines, could not help but be amazed by the variety of biological or organic products that purport to help vegetable crops grow better and relieve pest problems. Dozens of new products become available each year, and intelligent growers want to know if they really work. Recently, the impending phase-out of methyl bromide has seemingly lead to even greater claims for some products.

Growers and managers, who purchase chemical pest control products are familiar with the extensive university testing most chemicals have undergone. They may assume that similar testing has been done for all new products.
However, many new products have little or no independent testing completed before they are introduced to the market. Many biological/organic product claims are based on non-scientific testimonials, non-vegetable crop evaluations, or simply unproven theories. How does one evaluate a new product to determine if it works and if it is cost-effective?

HERE ARE SOME QUESTIONS TO ASK THE VENDOR:

1. Have independent researchers ever evaluated the product, that is, by people with no financial interest in the product? Ask for names and a copy of their reports.

There are two reasons that university results are usually reliable. Most university studies include side by side evaluations of products from many companies in their trials to see how they perform under local conditions. Each company typically pays a modest fee for each treatment in the study. Most of these studies are conducted on public lands where anyone can arrange a visit and see the results for themselves. Many of the experiments are featured at research field days, and most researchers indicate which companies sponsored which studies. Because the public has traditionally paid the salaries of researchers, the financial incentive to obtain favorable results for a particular product is reduced. This is an excellent reason for the vegetable industry to continue strong support for these research programs in the face of continuing university cuts as it helps to keep researchers financially independent of individual companies and products.

A second and equally important reason for confidence in university results is that faculty researchers receive career rewards for work that can be published in scientific journals. We have a strong incentive to conduct sound and unbiased studies. Scientific journals typically require results from at least two seasons or from two different sets of research plots before a paper can be considered for publication. Anonymous peer review of the experimental protocol, results and analysis of data is also a requirement for publication. Peer review allows other scientists to evaluate the quality of both how the study was designed and how the results were interpreted. Many single year studies are found in the *Fungicide and Nematicide Tests* and the *Biological and Cultural Tests* published annually by the American Phytopathological Society. These reports are subject to peer review and require replicated treatments, randomization, controls, and statistical analysis, all of which are hallmarks of proper experimental design.

2. Has the product ever been evaluated in vegetable field experiments? For what problems is this product recommended?

Many biological/organic controls may show great promise in the laboratory and greenhouse, but fail to be effective in field trials. Many products may also be successful in one kind of cropping system, such as corn or potatoes, and not work well for other vegetables. Finally, most biological controls are relatively specific in their mode of action and may work well for one disease or pest but not all problems. The same is true, of course, for many chemical products. A product that claims to reduce all pest problems and improve vegetable quality should be regarded with suspicion.

3. Has the product been tested in your area?

There are many examples in which products perform well in some soil types, at some soil pH levels, on some vegetables, and/or some climates, but not others.

4. If experimental data are available, look for these features when judging the results:

A. Non-treated plots:
These are necessary to determine how much stress or pest pressure (weeds, diseases, insects, nematodes) was present. These pressures are difficult to predict from year to year and even from area to area. Some disease trials require inoculation with a pathogen to ensure uniform disease in each plot. Ask what steps were taken to decide what pest or disease was present and how uniform the problem was. This same concern applies to any experiments with "growth stimulants."

1. It is always important to leave non-treated areas. Consider what happens if you don’t. Suppose you are seeing less disease pressure this year than last. Could it be due to a change in your fertility practices, different weather patterns, the new product you applied to your fields, or some undetermined factor? Or suppose you have a bacterial spot outbreak. Did the crop recover from the disease this week because of a change in the weather or because of that new product you applied? Growers may think that they know the answer to these questions, but without non-treated areas for comparison, no one can be sure, not even the most highly respected vegetable pathologist in the world.

B. Replications:

Field trials should include replications of all treatments. For example, if you were testing five new products, you would need 6 plots - one for the non-treated control and one for each new product. You would then need 3 to 4 more sets, or replications, of these 6 plots for a total of 18 or 24 plots. There are several ways to do this, but typically we have the five treatments plus the control randomized within each row. As the season progresses, you can see if the same results occur in each of the 3 or 4 replicated plots that received the same treatment. This helps separate out real differences among treatments from variation simply due to environment. The same reasoning is used for the World Series, which is settled by the best of seven and not just a single game.

C. Statistics:

Statistical analysis can be simple or complex, but it is an important way to determine how sure you are that an effect is due to a treatment. Here is a simple example:

Imagine two different experiments where you are testing two new products: "Bio-Sure" and "Eco-OK" for bacterial spot control. In each experiment, there are 4 replications of the three treatments: 1) the non-treated control, 2) Bio-Sure, and 3) Eco-OK.

The data numbers in the table refer to the number of bacterial spot infection centers in each plot. Note that both experiments have the same average results: 103 bacterial spot lesions in the non-treated control, 23 bacterial spots lesions in the Bio-Sure plots, and 10 bacterial spot lesions in the Eco-OK plots.

The data look pretty convincing that both products are giving significant control compared to the non treated plots, but can you also conclude that Bio-Sure gives better control than Eco-OK? A statistical analysis can answer that question.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>In each of four plots</th>
<th>Average of all 4 plots</th>
<th>In each of four plots</th>
<th>Average of all 4 plots</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment A: Number of bacterial spot infection centers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Even though the averages are the same in both experiments, look at the variation in the numbers in the four plots. Which set of results is more convincing? In Experiment A, the numbers are similar in all replications of each treatment. This gives you more confidence that both products gave disease control, and that Eco-OK reduced disease better than Bio-Sure. In Experiment B, there is more variation and overlap between the numbers in the various replications. It is not so clear that Eco-OK worked better than Bio-Sure even though the average numbers are identical.

Statistical analysis tells you how to interpret the average numbers because most reports list only the average (or mean) of the replications. If they are "statistically significant" they are more like the numbers in Experiment A and you can have more confidence in them.

The two common ways to indicate statistical significance are shown in the table. The first is to report the Least Significant Difference (LSD). If you subtract two averages from each other and the difference is greater than the LSD, then the difference between the treatment averages is probably real and not an artifact of the experiment. For example, the LSD in experiment A is 7.5. The difference between the averages of Bio-Sure and Eco-Ok (13) is more than 7.5, so you can be 95% sure that the difference is real. In Experiment B, the LSD is 16.0 and the difference between the averages is still 13, so the difference is not statistically significant. You cannot be confident that Bio-Sure works better than Eco-OK from the data in Experiment B. (Most LSDs are calculated at the 90% or 95% confidence level which is indicated by p = 0.1 or p = 0.05, respectively.)

Another way to indicate differences is by placing letters next to the average numbers. If the two averages have no letters in common, the differences are statistically significant. In the table, you can see that the letters are different for the averages of the Bio-Sure and Eco-Ok treatments in Experiment A but are not different in Experiment B because there was no statistically significant difference between them. Next time you attend a field day or read a research report, look for the statistical analysis to help you determine how confident you can be in the results.

1. If the product is for pest or disease control, does it have an EPA registration number?
2. This is important for several reasons, not the least of which is your own liability. There are many unanswered questions about the efficacy and safety of many of the new products, just as there are with traditional chemical controls. There is some concern about potential allergy problems, especially with fungal formulations. Some bacterial bio-control agents, such as *Burkholderia* (*Pseudomonas cepacia*), are secondary human pathogens that could be a serious health threat to people with compromised immune systems. Be aware also that contamination of many biologicals with unknown organisms is common and difficult to control. Thus, even if a biological product has an EPA registration, it is important to conform to all safety regulations for application and use, with particular attention to inhalation protection.

3. EPA registration is required for a product if it claims to directly control a pest. Registration means that the safety of the product has been determined and is acceptable to the EPA. Be aware that some well-known biological products are being sold without EPA registration. Some companies are avoiding EPA registration by claiming that disease and/or pest control is due to improved microbial environment that reduces the chances of disease or pest problems. The safety questions listed above apply to any microbial application.

**Conclusions**

By this time, you might be feeling that this is a lot of detail that may not be worth your time or concern. The purpose of this article to demonstrate what it takes to determine if a new product really works as it claims, and why it is not easy to conduct such tests on a working farm. Non-treated areas; replications and statistical analysis are time-consuming and best left to people whose job it is to evaluate such things. That is the philosophy that led to the founding of the land-grant universities and the Cooperative Extension Service. Unfortunately, year by year, support for this unbiased source of research results has been whittled away to a fraction of its former level.

What if you can’t find any reliable research and you want to try a new product?

A. Try new products on a small area first.

B. Try them where they are least likely to cause serious problems if they injure the crop or don’t do what they claim. For example, try new products on one field or part of a field rather than the whole farm at once.

C. Find a way to leave a non-treated test area for comparison so you can better judge the results you obtain. Get a sheet a plastic and place it over the center of an area to be treated before you spray. Remove the plastic using appropriate protective equipment and you have a non-treated test area. If you treat a field ditch to ditch and then proclaim that "it worked great," you will never really know what would have happened had you done nothing at all.

D. Network with your colleagues. Ask those who have evaluated new products if they followed the guidelines outlined above replications, non-treated controls, etc. The more of this that they have done, the more confident you can be in their comments. Watch out for "testimonials," and exercise some healthy skepticism.

This article is adopted from a similar piece prepared by *Gail L. Schumann, Monica L. Elliott, and Paul Vincelli* of University of Massachusetts, University of Florida, and University of Kentucky, respectively regarding the turf grass industry.

**Up Coming Events:**

**August 10, 2000**

**Methyl Bromide Alternatives – Vapam and K-Pam**
Southwest Florida Research and Education Center
Highway 29,
Immokalee, Florida
Contact Gene McAvoy at 863-674-4092 for more information.
September 6, 2000  
**2000 Tomato Institute**  
Ritz Carlton, Naples, Florida  
For information, contact Charlie Vavrina at 941-658-3400.

September 7-8, 2000  
**Florida Tomato Committee and Florida Tomato Exchange Joint Meeting**  
Ritz Carlton, Naples, Florida  
For more information, contact 407-894-3071

September 20-22, 2000  
**Florida Fruit and Vegetable Association Annual Meeting**  
Naples, Florida  
For more information, contact 407-894-1351

---

**SIGN ON FOR FFVA'S CONVENTION GOLF TOURNAMENT**

Reserve your place now for the FFVA Annual Golf Tournament, benefiting the Florida Fruit & Vegetable Research and Education Foundation. The Tournament will take place the morning of September 21 at the Vineyard Gold Club in Naples. Breakfast, course refreshments, and lunch will be provided. Following the 7:30 a.m. continental breakfast, the Tournament will begin at 8:30 a.m. sharp. Lunch and awarding prizes takes place immediately following the tournament. If you desire a particular 4-some, please notify FFVA no later than September 8. Any questions related to the tournament can addressed by calling (407) 894-1351.

---

September 26-27, 2000  
**Florida Agriculture and Citrus Trade Show - FACTS**  
Lakeland Center, Lakeland, Florida

---

**Web Sites:**

**Plant Diseases Announcements** - this searchable archive of the emerging plant disease announcements is provided by AgNIC. The Plant Diseases Announcements list may be viewed chronologically, by subject area, or alphabetical order. From announcements of recent genome sequencing of *Xylella fastidiosa* in Brazil, to a listing of the best websites on rice, this will be a valuable resource to plant pathologists.  

**University of Florida Department of Entomology and Nematology - Featured Creatures WWW site** - This site provides in-depth profiles of insects, mites, nematodes, and other organisms that are of interest to Florida's residents and is intended to support professionals in agriculture, horticulture, and urban pest control. Search by common or scientific name, crop or habitat. Go to [http://www.ifas.ufl.edu/~insect/index.htm](http://www.ifas.ufl.edu/~insect/index.htm)

**The latest addition to Featured Creatures** is the corn earworm (aka "tomato fruitworm," "sorghum headworm," "vetchworm," and "cotton bollworm"), *Helicoverpa zea* (Boddie). The corn earworm is considered by some to be the most costly crop pest in North America.  
[http://www.ifas.ufl.edu/~insect/veg/corn_earworm.htm](http://www.ifas.ufl.edu/~insect/veg/corn_earworm.htm)

**The Everglades Forever Act** was passed by the Florida legislature in 1994 with “the intent of promoting Everglades restoration and protection.” Growers on muck soils in the EAA have had to contend with the provisions of the act for a number of years in terms of implementing strategies to reduce the phosphorus load in
waters entering the Everglades. Provisions of the act also encompass the C-139 basin, which takes in some 160,000 acres in eastern Hendry County. All agricultural concerns including vegetable growers in this area face stiffer regulation of the amount phosphorus they use and the way they manage potentially phosphorus-laden runoff. [Link](http://mako.law.miami.edu/everlitdb/docs/litigation/statutes/state/florida/E_forever.htm#findings)

**The Official Darwin Awards Website** – The Darwin Awards celebrate Charles Darwin's theory of evolution by commemorating the remains of those who contributed to the improvement of our gene pool by removing themselves from it. The stupidity displayed by the participants in the Honorable Mentions section stops short of the ultimate Darwin Awards sacrifice.

1999 was a banner year. Terrorists forgot to check their watches, men played bar games with landmines, off-duty firefighters tried to drum up business, and a stoner swam with a killer whale. 2000 has already unearthed a parachutist buried in the mud, a woman who slept on the roof, two friends shooting beer cans off each other, and six men sailing in a two-man boat. Can the year get any more exciting?

All this and more! [Link](http://www.DarwinAwards.com)

**Update on the Southwest Florida Vegetable Research Investment Fund**

The “SW Florida Vegetable Research Investment Fund.” fund is envisioned as a strategic partnership of growers and others in the vegetable industry who pool their resources to address research needs of common concern.

The contributor members manage the SW FLORIDA Vegetable Research Investment Fund through a democratically elected advisory committee, who will prioritize and fund research projects based on members’ needs. Membership is based on contributions of one dollar per cropped acre per year or flat fee for industry partners. Contributors hold the purse strings and are free to choose from public or private research groups and hold researchers accountable for performance.

Since a successful kickoff on May 11th, 2000 over $31,000 dollars of industry and grower support have been received. On June 10, members selected an advisory committee consisting of Thomas Barfield, Skeeter Bethea, Cecil Howell, AJ Nychk, Chuck Obern, Jack Partin, Wes Roan, Jay Shivler, and Eugene Tolar.

Since that time, the advisory committee has met several times to consider research priorities and set a course of action. Methyl bromide alternatives in vegetable production was unanimously selected as the number one concern. Marketing was ranked a close second.

The committee has moved to underwrite a comprehensive survey in to methyl bromide alternative research. The hope is to provide members with a concise and useable document that lays out growers possible options for various crops and detail the strengths and weaknesses of each. In addition, the survey is intended to identify critical areas of needed methyl bromide alternative research, which could then be supported by the SW FLORIDA Vegetable Research Investment Fund

Challenges will continue to confront the industry. The process of change is certain to move faster and faster. Foreign competition is here to stay and will undoubtedly increase. Our industry will never be able to compete on the basis of cheap land or labor - we must compete on the basis of technological advances based on sound research.

It really is time for everyone involved in the vegetable industry to take stock, circle the wagons, and look after their own best interests. If you don’t - no one else will. As a participant in the vegetable industry, you need
to ask yourself several questions. What will the future bring? Will your needs be meet? How will your needs be meet?

**By participating in the SW Florida Vegetable Research Investment Fund, you will be helping to ensure the future of practical research that addresses the needs of the local vegetable grower.** The strength and ultimately the future survival of not only the vegetable industry in southwest Florida, but also every vegetable grower will depend on cooperation and unity within the industry.

For more information on becoming a member of the **SW FLORIDA Vegetable Research Investment Fund**, please contact any of the advisory committee members listed above or Gene McAvoy at the Hendry County Extension Office.

**Don’t hesitate – join the fund today!**

**Contributors** include: Karen Armbrester/SWFREC, Jim Connor/SWFREC, Bruce Corbitt/West Coast Tomato Growers, Marty Gross/SWFREC, Ed English/Pacific Tomato Growers, Fred Heald/Farmers Supply, Sarah Hornsby/AgCropCon, Cecil Howell/H&R Farm, Leon Lucas/Glades Crop Care, Gene McAvoy/Hendry County Extension, Alice McGhee/Thomas Produce, Tim Nychk/Nychk Bros. Farm, Chuck Obern/C+B Farm, Dr. Pam Roberts/SWFREC, Wes Roan/6 L’s, Kevin Seitzinger/Gargiulo, Jay Shivler/ F& F Farm, Ben Stanaland/Pacific Tomato Growers, John Stanford/LNA Farm, Mike Stanford/MED Farms, Dr. Phil Stansly/SWFREC, Eugene Tolar/Red Star Farms, and Dr. Charlie Vavrina/SWFREC, Donna Verbeck/GulfCoast Ag.

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.

Gene McAvoy
Extension Agent II
Vegetable/Ornamental Horticulture 863-674-4092 phone
Hendry County Extension Office 863-860-8811 mobile
PO Box 68 863-674-4097 fax
LaBelle, FL 33975 gmcavoy@gnv.ifas.ufl.edu

[http://www.ifas.ufl.edu/~gmcavoy/index.htm](http://www.ifas.ufl.edu/~gmcavoy/index.htm)

**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

**Rohm and Haas Company**
Robert Murray
7100 Twin Eagle Lane
Fort Myers, Florida 33912
Phone 941-561-8733 Mobile 941-994-4657
Special Thanks to the generous support of our sponsors; who make this publication possible.

Ted and Trudy Winsberg
Green Cay Farms, Inc.
Rt. 1, Box 331B
Boynton Beach, Florida 33437-9727
Phone 561-499-5345

Donna Muir Strickland
Monsanto Crop Protection
PO Box 1723
LaBelle, Florida 33975
Phone 941-675-4250
Special Thanks to the generous support of our sponsors; who make this publication possible.
NOTE: The acknowledgement of sponsorship in no way constitutes or reflects an official endorsement of these businesses or their products or services by either the University of Florida, IFAS, the Florida Cooperative Extension Service, or the Hendry County Extension Office. Sponsors have no control over the content of this publication.