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## VALLEY VEGETABLE NOTES

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### **MELON MEETING NOVEMBER 16**

The 1995 report on S. Texas melon research is being combined with the melon-cucurbit IPM workshop on Thursday November 16. Meeting registration will begin at 8:00 a.m. at the Texas A&M Research & Extension Center in Weslaco with a BBQ lunch at noon. The first 100 people to register for the meeting will receive free literature on IPM for cucurbits. The program will include presentations and discussions on plant disease, insect and weed pests and other cultural problems that cucurbit growers in Texas are facing. The meeting agenda is included in this newsletter for your convenience. The other aspect of the meeting will be the opportunity for melon and other cucurbit growers to voice their needs for both research and extension programs dealing with all aspects of cucurbit culture. For more information contact Dr. David Riley at (210) 968-5585.

### **BROAD MITES ON WATERMELONS STORMY SPARKS**

For some time we have been concerned about potential damage to melons by the broad mite. We first saw this type of damage in the greenhouse on plants treated with admire. We are now seeing some damage in the field. At least one field in Starr County has obvious broad mite damage. The ends of the vines are crumpled and appear a bronze color. In looking at these plants under the scope, broad mite eggs and adults are readily apparent. Hopefully this is occurring late enough that it will not impact on yield quantity or quality. We have some melon plots on the station that also have broad mite damage, but it occurred early enough to cause severe fruit deformities. These early infested plots resulted from use of transplants that were likely infested in the greenhouse and carried to the field. This damage is severe and would be devastating in a commercial situation. This is another problem everyone needs to keep an eye on, particularly early in the season.

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**A WHITEFLY MYSTERY AND ODDITY:  
SILVERLEAF AND CROWN GALL  
TOM ISAKEIT**

So how is it that a few nymphs (immatures) of the sweetpotato whitefly biotype B can cause the leaves of squash and pumpkin to turn silver? That's what researchers at the USDA Horticultural Research Laboratory in Orlando, led by R.K. Yokomi, are trying to determine. They ruled out a virus as the cause of the problem. They found that cells within a silver leaf are deformed and have large air spaces between them. The chloroplasts (bodies that contain chlorophyll) within the cells are deformed and the chlorophyll content of the affected plant is reduced, as well as its root weight. Cycocel, a plant growth regulator, can also cause silverleaf symptoms, suggesting to these researchers that hormones affecting plant growth are somehow involved. So, the mechanism of silvering still is not known. Yokomi and collaborators are now suggesting the involvement of bacteria that live symbiotically within the whitefly.

Continuing on the topic of bacteria associated with whiteflies, M. Zeidan and H. Czosnek at the Hebrew University of Jerusalem demonstrated that whiteflies can transmit the bacterium that causes crown gall disease. I must emphasize that this was done as part of an experiment and just because such transmission is possible, does not mean that it will happen in nature or that it will pose a new threat to commercial agriculture. (Personally, I think that man is probably the most serious vector of crown gall bacteria).

Using molecular techniques, these scientists placed the genetic material of the tomato yellow leaf curl virus (a very serious whitefly-transmitted virus that has not yet been found in the United States) into the crown gall bacterium. They found that whiteflies can acquire this genetically-altered bacterium and transmit the virus within it to tomatoes. This seems like a bizarre example of the whitefly as a vector of a pathogen, which, in turn, becomes the vector of another pathogen. However, these scientists foresee such a use of the crown gall bacterium as a tool for studying whitefly-transmitted diseases.

**MELON REPORT NEARLY DONE**

The 1995 Annual Research Report on Melon Production systems in South Texas is nearly completed. The Melon Report has been published for the past six years and is known throughout the industry as a very comprehensive report on all of the melon research done in this area of the world. The report is often used by melon producers who want to stay current on all aspects of melon research including; pathology, entomology, culture, breeding and variety trialing.

If you would like a copy of this year's Melon Report please contact either Dr. Marvin Miller or Dr. Lynn Brandenberger at the Texas A&M Research and Extension Center 2401 E. Hwy. 83, Weslaco, Texas 78596 or call (210) 968-5581.

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