

CORNELL
UNIVERSITY

STATION NEWS

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SEPTEMBER 15-22, 1995

BRIEFS

DIALING PROCEDURE WHEN
USING A CALLING CARD

If you need to use a calling card when dialing long distance, please use the following procedure. Dial 9 + ATT access code 102880 + number calling and proceed with normal calling card options. Example:

- Number to be Called: 607-567-8901
- 9-102880-607-567-8901 + calling card options

LIBRARY NEWS

A New Look For The Plant Pathology Library

The Plant Pathology Library has now been reclassified to the Library of Congress system. Relabeling is complete except for books currently in circulation. Please return any books you have from the Plant Path Library to the Library in Jordan Hall to have a new call number placed on the spine. If you wish the book returned, please let the library personnel know. Thank you for your cooperation.

THE STATION IN 2030

A new Plant Health building, a visitor center, new uses for Parrott Hall, Jordan Hall, and the Station Barn, room for bio-tech firms, and major changes in roadways and foot traffic patterns are just a few features of the Station's Master Plan for the year 2030. The plan will be presented to Station employees in a meeting scheduled for Thursday, September 21, beginning at 1:00 p.m. in the Jordan Hall Auditorium. At that meeting, a representative from Saratoga Associates, Inc., the architectural firm that was hired by SUNY Construction Fund to help the Station develop a master plan for the physical facilities, will brief employees on the study they have been working on for the past year. To develop the plan, Saratoga Associates worked closely with the

(Continued on page 3)

NYS LEGISLATORS VISIT EXPERIMENT STATION



Helene Dillard tells assembled NYS legislators how research can directly affect profit by pointing out that a "7% rot" rate in tomatoes as a result of the Anthracnose fungus can cause processors to reject the entire truckload of tomatoes and possibly

prevent harvest of entire fields of processing tomatoes. (inset) Assemblyman Edward Sullivan (left), chairman of the state Higher Education Committee, compares clusters of healthy grapes to those affected by downy mildew, a disease that plant pathologist David Gadoury (right) and others at the Station are striving to control. Research on this disease directly affects the potential value of New York State's \$41.8 million grape harvest.



The demonstrations were hands-on and the statistics irrefutable as researchers at Cornell's Agricultural Experiment Station in Geneva took the opportunity Tuesday, September 12, to prove to key New York State legislators that research conducted at the Station directly improves the economic viability of New York State agriculture, with positive influences on consumer health and the environment.

Apple trees trained on Y-trellises, genetically engineered crook neck squash resisting Mosaic Virus, nematode-infested grubs, diseased green beans, "killer" tomatoes, and moldy grapes were part of the proof. So were new methods of insect control that reduce pesticide use, breeding programs that improve the disease resistance of New York state grapes and apples, processing expertise that saves New York State food producers money and time, and aroma compounds that enhance the value-added potential of food and fluids.

"It was a rare opportunity to show the NYS legislators that we are not just a farm station but that we attack agriculturally important problems by integrating research in the laboratory with state-of-the-art molecular tools and commodity-based projects in the field," said entomologist Wendell Roelofs, whose department's pioneering research in the chemistry of insect sex attractants has reduced pesticide use across commodities.

(Continued on page 2)

(LEGISLATORS, Cont.)

The legislators participated in a two-day tour of Cornell University on September 12 and 13, spending Tuesday afternoon at the Experiment Station in Geneva.

"I was pleased that the visitors from Albany showed genuine interest in the Station, and that we were able to attract members of the legislative staff who hold important assignments including serving on the agriculture section of the Senate Finance Committee, the Legislative Commission on Science and Technology, and the Economic Development section of the Division of the Budget," said Dr. Jim Hunter, director of the Geneva Station. Key legislators who participated were Assemblyman Edward Sullivan, Chairman, Higher Education Committee; Assemblyman William Magee, Member, Agriculture and Higher Education Committees; and Assemblyman Daniel Fessenden, Ranking Minority Member, Agriculture Committee. The visitors were accompanied by members of the Cornell Government Liaison staff.

Strong words of praise for the entire afternoon's program at Geneva were expressed. "We do a lot of these 'things'," said Assemblyman Sullivan, "but this visit was exceptionally well organized and the presentations gave a good sense of programs at Geneva."

Hunter reported that the faculty did a marvelous job in their presentations to demonstrate the link between Station programs and the economic viability and competitiveness of New York agriculture, and that this was reinforced by Joe Nicholson, owner of Red Jacket, and Cindy and Richard Peterson, owners of Swedish Hill Winery, who expressed strong support for the Station and the Extension Service.

On his walk to the Pilot Plant, Sullivan waxed enthusiastic over the contributions Station research made to industry, saying "I think we as a legislative body should do more to support New York State agriculture. Research is clearly critical."

Hunter said that the visitors were made aware of the serious impact budget cuts have had



Mark McLellan explained to state legislators how food science programs at Geneva benefit industry and consumer health, resulting in new food ventures and jobs for state residents. In no uncertain terms, he told them: "State budget cuts over a period of 10 years are severely impacting the effectiveness of our research and outreach programs."

at the Station, but that emphasis was on the "importance of what we do and how well we do it."

"It is a difficult budget climate in New York State, however, we are working hard to position the Station for the support it deserves from the taxpayers once the state's financial situation improves," said Hunter.

The tour started in Barton Lab in the Entomology Department where Mike Villani, Jan Nyrop and Tony Shelton demonstrated the importance of collaborative research between entomologists, horticulturists, and extension agents in combating insect pests. Plant pathologists Helene Dillard and David Gadoury aptly demonstrated the importance of laboratory research on diseases as it is applied in the field in the fruit and vegetable industry, using statistics on tonnage, yield, and profit margins to prove their point.

Horticulturist Susan Brown and plant pathologist Herb Aldwinckle spoke about the

Station's fruit breeding program, and how it integrated both classical and molecular genetic methods of variety improvement.

In the Pilot Plant, Mark McLellan made a strong case for food science programs at the Station, their importance to industry and consumer, and the "devastating effect" of funding cuts over the past 10 years. In the laboratory, Terry Acree and Deborah Roberts explained the economic importance of value additives like flavor and taste, and the use of the gas chromatograph.

The group then took a driving tour of Station farms. At the Loomis Farm the field planting of transgenic apple rootstocks was pointed out and emphasis placed on how this planting related to the earlier presentation. Terence Robinson described orchard trials designed to test the effect of high density plantings, trickle irrigation, rootstocks, varieties and fertilizer applications on yield and quality of fruit.

At the Crittendon Farm, the group observed a planting of yellow crook neck squash of Dennis Gonsalves. They could easily see the commercial variety that had been devastated by the Zucchini Yellow Mosaic Virus and the genetically engineered line that was still green and producing marketable fruit.

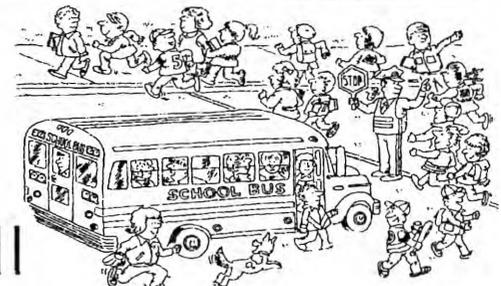
At Research North, Jim Tette and Curt Petzoldt presented the goals of IPM and discussed the specifics of a sweet corn trial that is in progress.

At Red Jacket Orchards, owner Joe Nicholson described his operation to the group, pointing out his collaborative association with the Station, Cooperative Extension, and Cornell University. At this stop, Bob Andersen discussed his program with tree fruits other than apples and showed fruit of a new plum (Victory) developed in Ontario. The group proceeded to Swedish Hill Winery and on to Ithaca where they were met by President Rawlings, Vice President Henry Dullea, and Dean Lund for dinner. They toured the Ithaca campus on Wednesday. 🍎



SCHOOL'S OPEN...

please
drive
carefully!!



(BRIEFS, Cont.)

Station's Master Plan Committee, which was under the chairmanship of Pat Krauss.

"There is a future for the Experiment Station after we get through the New York fiscal crisis," said Hunter. He encourages all employees to attend this meeting and "look forward optimistically to the future."

This is an excellent opportunity for those interested in the future of the Station to see what the Station should look like by the year 2030 and to better understand the programmatic issues driving that vision.

MORE ON APPLE EXPORTS

Entomologist and professor emeritus Ed Glass has written to alert interested readers of the BRIEFS report on *Apple Export Facts* (September 8-15, 1995), about certain additional facts. "Apple exports to the United Kingdom and many other countries in 1994 would not have been possible but for earlier research by Station scientists. The apple maggot existed in northeastern North America long before the early settlers from Europe brought the apple. Hawthorne was its host. Sometime prior to the mid-1800s, it adapted to apple and has become one of the major insect pests of this fruit. The United Kingdom placed a quarantine on apples from the Northeastern areas of North America until Dr. Paul Chapman, then working in the Station's Hudson Valley Laboratory, demonstrated in 1933 through careful experiments that no stage of the apple maggot could survive 30 days or more in cold storage at 34 degrees F. or less for 30 days. The quarantine was lifted for apples stored for the prescribed time and temperature.

"When controlled atmospheric storage was developed, the question was raised whether or not the apple maggot would be killed in the modified atmosphere at the slightly higher temperatures. Professor Robert Smock, pomologist at Ithaca, was a major developer of this new technology to keep apples in prime condition for extended periods of time. In cooperation with Chapman and Smock, I repeated in 1961 Chapman's earlier work in controlled atmospheric storage and determined that the new storage conditions were also lethal to both the apple maggot and plum curculio in the minimum 90 days required for CA certification.

"These events are further evidence of the leadership that the Station has provided over the years in all phases of fruit and vegetable production from the seed to consumption. It also demonstrates our partnership with Ithaca staff," he said.

GRAPE HARVEST 1995

The unusually long, dry weather in New York has made this a very difficult grape harvest to predict but Thomas Henick-Kling, who directs the Station's Wine Research & Extension Program, issued a memo to New York winemakers last week that addresses some of this season's harvest issues.

"I am not trying to predict how good the wines from this year will be," he said. "Nevertheless, this year has the potential to give us outstanding wines—if it does not rain from now until harvest and if we watch the development of the grapes carefully until they reach the desired maturity." His advice to winemakers is to watch the physical maturation of the berries and the cluster stems, taste the berries, and follow sugar and acid content.

Drought stress may have an effect on the harvest. "In some very dry vineyards the vines might stop photosynthesis" if the grapevines cannot find enough water to keep photosynthesizing. "Regularly taste the berries to follow the flavor progression and development of phenolic substances," he suggested. "The sugar content should continue to rise each week. If the vines shut down, it might lead to under-ripe fruit."

On a more positive note, warm dry weather can lead to grape maturity much faster. "If this happens, many winemakers will be tempted to wait for even riper—more sugar, less acid—grapes," cautioned Henick-Kling. These grapes might be over-ripe and the most desirable flavors will no longer be present. "White grapes might be too phenolic (in this case minimize skin contact during vinification); red grapes might have only jammy fruit aromas with lots of broad tannins." Henick-Kling suggested that winemakers might harvest some fruit at two different maturities to capture desired qualities from each stage of development.

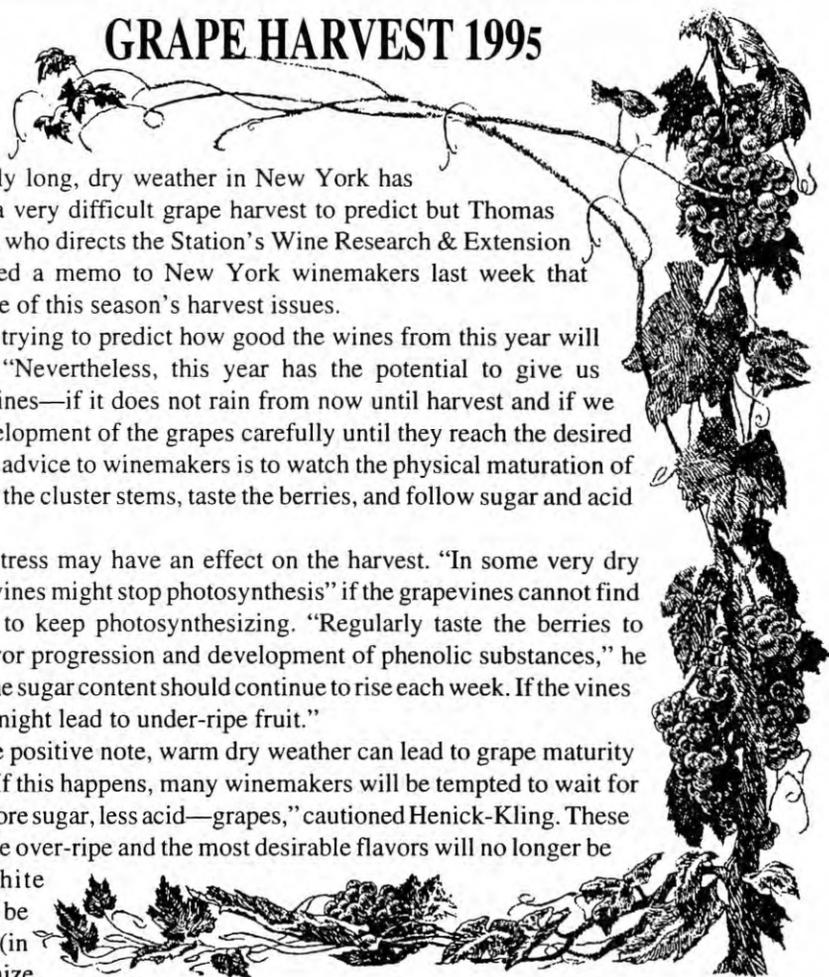
The solution to the over-ripe, under-ripe harvesting dilemma is to sample the grapes, watch the flavor progress, and pick when desired flavors have been reached. Watch for bunch rot and check with the vineyard extension specialists if there are any questions, he suggested.

Another effect of drought stress is lack of nutrients for yeasts, particularly lower amounts of nitrogen. "Nutrients like ammonium hydrogen phosphate (DAP) and a number of proprietary yeast nutrients will have to be added to the must so the growing yeast has them available during the early phase of fermentation," said Henick-Kling, who suggested 0.5 to 1g/L as "the best guess."

Another reason to add yeast nutrients is to avoid off-odor which develops in Riesling, Silvaner, Muller-Thürgau, and possibly some other white grape varieties. "The formation of this off-odor during fermentation can be inhibited to some degree by providing the yeast with adequate amounts of nitrogen." Again, 0.5 to 1 g/L DAP (or other nutrients) can be effective, said Henick-Kling.

CORRECTION

In last week's *Station News* story on the students from Hobart and William Smith Colleges who spent the summer conducting research at the Experiment Station as Howard Hughes Scholars, Warren Lamboy was inadvertently omitted from mention. Lamboy, who is a research associate at PGRU, worked as Kate Hammontree's mentor on a "Comparison of Genetic Diversity between Specimens of *Vitis riparia* from Different Geographic Regions Using RAPD Markers."



THIS WEEK'S CALENDAR

SEPTEMBER 15-22, 1995

EVENTS • MEETINGS

Friday, September 15, 4:00 pm

Pavilion

Plant Pathology Department Picnic

Monday, September 18, 6:30 pm

Staff Room, Jordan Hall

English as a Second Language

Wednesday, September 20, 6:30 pm

Staff Room, Jordan Hall

English as a Second Language

Thursday, September 21, 1:00 pm

Auditorium, Jordan Hall

Presentation of the Master Plan to Employees

REMINDER

Saturday, September 23

John Minns' and Mike Dunham's Retirement Party.

Deadline to sign up is

Tuesday, September 19

See Donna Roelofs in Entomology.

CLASSIFIED

FOR RENT: Two-bedroom house. Wall-to-wall carpeting, new siding, new windows, new roof, stove and refrigerator, off-street parking, ideal for two people. Pets negotiable. Available October 1. \$550/month plus security and utilities. Call 789-3681.

MISSING: A very contaminated metric triple-beam balance is missing from the mixing room in the Pesticide Facility. If anyone knows where it is, please call Marty at 781-5307 or just drop it off at the Pesticide Facility.

FREE: Refrigerator, working condition. Call Rob at x306.

FOR SALE: 1990 Honda Accord LX Special. 5-speed, power sunroof, all options, & spoiler. Asking \$8000. Call 716-396-2698.

YOGA CLASSES: To be offered on Wednesday evenings from 5:30-7:00 pm & 7:15-8:45 pm, and on *Saturday mornings*, 10:15-11:45 am, starting Wednesday September 27, at Hobart and William Smith Sport and Recreation Center, 283 Hamilton St. Call Anna Gilman at 789-7223 for details. (No classes on Oct 4, Oct 7, and Oct 14.)

FOR SALE: For departments only, as is, price firm. They work but no guarantees: Mac SE FDHD, 4mb with std keyboard no hard disk—\$150; Mac Plus, 4mb with keyboard no hard disk—\$100; Jasmine 20 HD—\$30; DataFrame 30—\$30; Apple PC drive for 5.25" floppy—\$50; Laserwriter IINT—\$500 has paper feed problem. Call Nancy x288 to arrange funds transfer.

SEMINAR

PLANT PATHOLOGY

Date: Tuesday, September 19
Time: 3:00 pm
Place: Barton Lab, Room A133
Speaker: Carl Chen
 Department of Plant Pathology,
 Geneva
Topic: Joint action of *Pratylenchus penetrans* and *Verticillium dehliae* on *Solanum tuberosum*.

PEOPLE

New Employee:

Daniel Irwin is a new Utility Plant Operator in the Heating Plant.

SAVE THE DATE
Retirement Party for
Charles "Bud" Smith

Tuesday, October 24
6:30 pm

Abigails' Restaurant

See next week's *News*
 for more
 information and
 reservation form.



PUT YOUR BEST FOOT FORWARD

WalkAmerica

The March of Dimes is sponsoring a local WalkAmerica on Sunday, October 1, to raise money to fund research and education in its Campaign for Healthier Babies. WalkAmerica is a 5-mile trek which begins at 10:00 am (registration at 9:00 am) at the Seneca Lake State Park. Many local businesses are participating with teams and Donna Roelofs is trying to organize a team from the Experiment Station. She welcomes any and all walkers. If you are interested in participating as a walker or as a sponsor, please contact her via QuickMail or at x325. "Let's put our best foot forward and show our community support!" she says.



Aerobics at the Sawdust Cafe



beginning at 12:10 pm
every Monday,
Wednesday
and Friday
Everyone is welcome!
No sign-up is necessary