

CORNELL
UNIVERSITY

STATION NEWS

GENEVA
NEW • YORKVOLUME LXXXIII • NO. 31
AUGUST 2 - 9, 2002

BRIEFS

Bayer Phases Out Azinphos-Methyl on 30 Crops

Bayer CropScience has voluntarily agreed to cancel or phase-out the labeled uses of the insecticide azinphos-methyl on 30 crops including potatoes, tomatoes, onions, beans, broccoli, cabbage, celery and cucumbers.

Use of the product on nine additional crops will continue for four years, at which time EPA will re-evaluate those registrations. Continued registration of azinphos-methyl for each of these crops will depend upon the results of additional data to be generated and continued need for the product.

"Azinphos-methyl has proven itself a safe and valuable crop protection product for both farmers and consumers for over 45 years," said Dr. Wayne Carlson of Bayer CropScience. "Nonetheless, we wanted to work together with the grower organizations so that we could cooperate with EPA in helping the agency meet its objective of reducing worker exposure."

The company worked with grower groups, EPA, and the USDA to reach agreement on which product uses could be cancelled. Decisions were based on such factors as alternative products, degree of pest problem and grower use patterns. EPA sought the reduction of the uses of azinphos-methyl in an effort to reduce farm worker exposure to pesticides.

The Vegetable Growers News

Rise in *E. coli* Found in Premature Infants

In a dangerous boomerang effect apparently caused by antibiotics, *E. coli* is on the rise among premature babies and has overtaken strep as the most common infection in such infants, a new study suggests.

The shift is worrisome because *E. coli* bacteria can be more deadly than streptococcus germs. The rate of Group B streptococcus blood infections in premature newborns fell by nearly three-quarters during the 1990s, probably because more women in labor took antibiotics to keep from passing the bacteria on to their babies during delivery, the researchers said.

But they added that during that same period, the rate of *E. coli* infections doubled, apparently because ampicillin, the antibiotic commonly used to wipe out strep, gave *E. coli* room to flourish.

The study, financed by the National Institutes of Health, was published in *The New England Journal of Medicine*. It was led by Dr. Barbara J. Stoll of the Emory University School of Medicine.

The Associated Press

Köller's Research Keeps New York One Step Ahead of Resistance

Doctors fear and farmers curse the 'super bugs' and 'super weeds' which have become resistant to the drugs and chemicals used to control them. By the early 1990s, there were 504 documented cases of a pest developing resistance to a particular insecticide. Similar patterns have since emerged with herbicides and fungicides.

Analyzing how resistance develops to these chemicals and which methods can be used to manage this problem has been the work of Wolfram Köller, a professor of plant pathology who is a world authority in the field of fungicide resistance.

For his consistently top-quality work in the field, Köller received the Lee M. Hutchins Award at the 2002 annual meeting of the American Phytopathological Society in Milwaukee last week. The Hutchins is given for a series of excellent publications in APS journals concerning research on fruit crops.

"Wolfram is highly deserving of this award as he is recognized throughout the world for his excellent research on fungicide resistance. He is frequently called upon by members of industry and academia to lecture and consult on the topic," said plant pathology chair Thomas Burr.

"Together with students and co-workers, he has done the classical field biology on the dynamics of apple scab resistance in nature as well as the basic genetics and molecular biology to identify resistance genes and mutations associated with them. Results of their work not only impact basic science but have resulted in implementation of resistance management practices by growers," said Burr. Köller begins testing new fungicides as soon as they are released, and sometimes before, so before resistance can develop in the field he has studied its development in the lab.

Since pests and diseases are constantly adapting, pesticide resistance can never be stopped entirely, but the development of resistance can be slowed, and that is the final goal. "We are really talking about an ongoing process of co-evolution," Köller explained. "The success of the program is a question of scale. If resistance to a new fungicide develops in five years, that is a disaster for growers. If we can get 30 years out of the same fungicide, that's progress."

Strategies for Resistance

In some cases, the mechanism for resistance is costly to the resistant mutant. In these cases, having resistance is a disadvantage when the pressure from the pesticide is removed. If pesticide use is stopped, the mutants will fade with time, and the population will become susceptible to the pesticide again. This question is the subject of some of Köller's most recent research. "It depends on the very crucial question: are the resistant mutants handicapped because they are resistant? Are they inherently less fit?" he said. "If they were, we might find a stable balance between the mutants' selection and their subsequent decline. The answer will be different from fungicide to fungicide."

Another important discovery from Köller's work is 'accelerated mutability.' Köller was the first to demonstrate that strains of *V. inaequalis*—the fungus that causes apple scab—that are already resistant to one fungicide will develop resistance more quickly to a second, unrelated fungicide. The property is common between fungicides with similar modes of action, and was thought to be caused by similar mechanisms for resistance. Köller, however, demonstrated the same phenomenon with unrelated fungicides and thus unrelated resistance mechanisms. This new concept has significant implications for resistance-management strategies, particularly concerning newly-developed fungicides.

For several of his baseline studies, Köller needed a population of the pathogen that had never been exposed to any fungicide. He found this only a short distance from the Experiment Station in the Montezuma National Wildlife Refuge, a 74-year-old, 7,000 acre wildlife reserve consisting largely of reclaimed marshland. Inside this reserve they found sev-

(RESEARCH, continued on page 2)

CALENDAR of EVENTS**AUGUST 2 - 9, 2002****MEETINGS****Chairs' and Unit Leaders' Meeting**

Date: Thursday, August 8, 2002
Time: 1:30 PM
Place: FST Conference Room

FITNESS**Aerobics**

Date: Monday and Friday
Time: 12:10 - 1:00 PM
Place: Sawdust Cafe

Taekwondo Class

Date: Monday, August 5, 2002
Time: 12:10 - 1:00 PM
Place: Jordan Hall Auditorium

Taekardio Class

Date: Wednesday, August 7, 2002
Time: 12:10 PM
Place: Jordan Hall Auditorium

CLASSIFIED

FOR SALE: B&P surplus, KR Wilson, 25 ton, hand operated hydraulic press. \$100. Please contact Al Fairbrother at ARF2, or 2304.

FOR SALE: 1971 SkyLark travel trailer (15'x 71/2'). Good condition. \$500. Contact Jeanne at jsr6 or 789-8763 after 5:30.

FOR SALE: Sears brand car-top carrier. Larger size, locks, can fit any vehicle if you buy the right straps. \$60. John Ludwig at JWJ2, x2407 or 539-3155.

FOR SALE: 1994 Hyundai Excel, 61K miles, standard transmission, white color with no rust. The car is running perfectly and is very economic. \$1500. For more information, please contact Bruno Lucas at X2493 or bl@nysaes.cornell.edu.

FARM EQUIPMENT FOR SALE: New Holland 273 Baler, \$1100; 36' portable electric Little Giant grain Auger, \$150'; 17' electric grain Auger, \$100; 17' electric grain elevator \$60. If interested please contact John Bourke at 548-9390.

FOR SALE: 1994 150 XLT Ext Cab Pickup Truck, all power, Tono cover, 132,000 miles but in good condition, well maintained. Asking \$4,995. Call 789-0174 after 6 pm.

HOUSEHOLD ITEMS NEEDED: A new Food Science & Technology Extension Associate (& family) needs: dining room table, chairs, desks, lamps, TV, mattresses (1 double, 2 singles or 4 singles), sofa, arm chairs, vacuum cleaner. Please call extension 2263 ask for Hans Justrich.

FOR RENT: New furnished 3 bedroom house on Seneca Lake 7 miles south of Geneva on the east side. Great view and beach. Call Penny at 315-585-2259 or x2254. Available in August.

Seabreeze Tickets Available

Seven days a week now through Labor Day (holidays included). Tickets are available in Room 150, Food Research Lab.

Station Researchers Win ASHS' Best

Bruce Reisch, along with two colleagues and a research assistant, collaborated on research by his graduate student that won an award from ASHS.

The American Society for Horticultural Sciences selected "Marker-assisted Selection for Powdery Mildew Resistance in Grapes," for the Society's Outstanding Fruit Publication for the year. The research was conducted by Marco Dalbo with Guang-Ning Ye, Norman Weeden, Wayne Wilcox and Bruce Reisch. The paper was the result of Dalbo's graduate research. Reisch and Wilcox are professors in horticultural sciences and plant pathology, respectively. Weeden is a former professor in horticultural sciences. Dalbo was a graduate student under Reisch, and now works at the experiment station in Videira, SC, Brazil. Ye was a postdoctoral research fellow in Reisch's lab and now works for Monsanto in St. Louis.

The article, which appeared in the January 2001 issue of the *Journal of the American Society for Horticultural Science*, was selected from among all the articles published in the society's three publications, the *Journal of the ASHS*, *HortScience*, and *HortTechnology*, during 2001. The award will be presented on Sunday, August 11 at a ceremony at the ASHS's Annual Conference and XXVI International Horticultural Congress in Toronto, ON, Canada.

(RESEARCH, continued)

eral apple trees that were nearly 100 years old, and had never been exposed to commercial fungicides. "This wildlife refuge was indispensable since it offered us a real non-managed population of apple scab which had never been exposed to any—even the oldest—fungicides," said Kölle.

Will there ever be modern pesticides without resistance? "Probably not," said Kölle. "But the way targets for new pesticides are being discovered is now guided by the revolution in genomics. These new research tools will allow us to determine the relative risk of resistance a new pesticide will face much ear-

lier than was possible in the past, and to counteract that resistance from the start."

Kölle received his M.S. in Chemistry and his Ph.D. in Biochemistry from the Philipps-University Marburg, in Germany. He did a postdoc at Washington State University and served as a senior research scientist in the Pesticide Division of Bayer AG in Leverkusen, Germany from 1982-86. In 1986, he joined the plant pathology faculty at the Station, where he is now a full professor. Previous Hutchins Award winners in the department include Burr, David Gadoury and Wayne Wilcox.

Whale Watch Volunteers Needed

It's time again to sign up to volunteer to work at the Experiment Station's Whale Watch booth on August 17 & 18, 2002. We'll be open 11 am - 7 pm on Saturday, and 12 am - 5 pm on Sunday. Volunteers are needed for two-hour time slots.

All volunteers will be treated to a pizza lunch on Thursday, August 15, courtesy of the director. At that time, you will find out all the details concerning the exhibit you signed up for and will receive a free ticket to get into the Whale Watch for the day you volunteer.

If you don't already own a NYSAES t-shirt, Station Club will sell you one at their cost of \$6.00 for sizes M, L & XL and \$7.00 for XXL.

Check out the schedule at <http://www.nysaes.cornell.edu/comm/whalewatch2002.html> and contact Gemma Osborne at gro2 to sign up.

RED CROSS BLOOD DRIVE

**Monday, August 12
9:00 AM - 2:30 PM**

Jordan Hall

Contact Donna Roelofs at x2325 or drr2 to make an appointment.

RENAISSANCE FESTIVAL

**Open Saturdays and Sundays
Now - August 11, 2002**

**10:00 AM - 7:00 PM
Station Club is sponsoring the sale of discount passes
\$14.99/adults
\$5.99 6- to 12-yr olds**

Tickets are available by contacting Amy Andersen at 2314, stopping by A103 Barton Lab or by email (ada10@nysaes.cornell.edu.)