The IR-4 Project
Providing Safe and Effective Pest Management Solutions for Specialty Crop Growers

Newsletter

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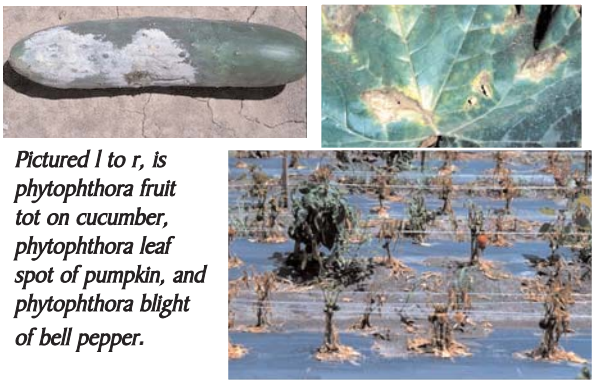
Phytophthora capsici: From No Problem, to Big Problem, to New Tools

— by IR-4 Plant Pathology Program Manager, Dave Thompson

Phytophthora capsici (P. capsici) causes a crown, foliage and fruit blight of peppers and cucurbit crops such as pumpkins, cucumbers, and watermelons. In the late 1980s, *P. capsici* wasn't really a problem and captan registrations on cucurbits and peppers were cancelled due to the fact that no disease needing control could be identified. However, by 1999, *P. capsici* was making headlines as being resistant to metalaxyl (the active ingredient in Ridomil) in many fungicide trials being reported by researchers.



Pictured l to r, is phytophthora fruit tot on cucumber, phytophthora leaf spot of pumpkin, and phytophthora blight of bell pepper.

In a 2004 *APSnet* article Mohammad Babadoost stated "recently, the incidence of *Phytophthora* blight on cucurbits has dramatically increased in cucurbit-growing areas of the world, causing up to 100% yield loss." Cucurbit industries, particularly processing, are seriously threatened by heavy crop loss resulting from *Phytophthora* blight. For example, outbreaks of *Phytophthora* blight have threatened Illinois' pumpkin and other cucurbit processing industries, where 90% of US grown processing pumpkins are produced. Similarly, the pickling cucumber industry of Michigan is jeopardized by the increased occurrence of Phytophthora blight. Because of heavy crop losses these growers often must abandon their own farms, where they grow production cucurbits, and move into other areas, sometimes traveling more than 50 miles to find uninfected fields.

As early as 1982, fungicides were being evaluated; however, the search for something to control metalaxyl-resistant strains did not get underway until the mid to late1990s. In 1998, the first Emergency Use Exemption (Section 18) was granted in Georgia for use of dimethomorph on cucumbers and cantaloupes. Early fungicide efficacy trials identified useful products but results were inconsistent. In some trials a product would work but in others the product would be ineffective in controlling the disease.

IR-4 organized a workshop of researchers held in conjunction with Cucurbitaceae 2002 Conference, in Naples, FL. The purpose of the workshop was to share results. Researchers presented basic biology of this devastating disease and their experience in controlling it. Cultural techniques, such as raised beds and use of red light on seedlings were discussed. Cucurbit breeders became interested as resistant pepper cultivars had been developed. Methods of working with the pathogen were shared and friendships developed. While insights were gained and a list of fungicides to evaluate was identified, no monies were available to pay for efficacy trials. Therefore, researchers went home with new ideas to try but each worked independently for funding.

In 2004, IR-4 initiated Pilot Efficacy Projects and *P. capsici* on cucurbits and peppers was identified as the plant pathology Pilot Project. The project was initiated with a gathering of researchers and company representatives at a workshop held in conjunction with the Southern Division of American Phytopathological Society (APS) meeting. There, research from the previous two years and earlier, was discussed and potential products and methods of application were identified. Further discussion with chemical company representatives brought out three new numbered compounds and an old one, captan, for evaluation. Monies were proposed,

continued on page 6

Inside this issue...

A Mushroom Story

— by Marylee Ross, IR-4 Field Research Director

Fighting fungi on fungi can be tricky business. That is just one of the problems that mushrooms producers face. Last year I had the honor of working with Dr. Christine Smith at Lambert Spawn in Coatesville, Pennsylvania on an IR-4 magnitude of residue trial testing the fungicide Imazalil on Agaricus mushrooms. I received a quick lesson on Agaricus mushroom production because as her colleague Dr. Mark Loftus pointed out, "you grow green plants."

Button mushrooms in stacked grow out trays.

Mushrooms are not green plants they are the fruiting heads of fungi, void of chlorophyll. Without chlorophyll they cannot synthesize the sun's energy, therefore mushrooms require a rich substrate in order to grow. Typically horse manure and straw to which nutrients and gypsum, as a pH buffer, can be added, is a marriage of horse farmers' and mushroom growers' needs. This compost is carefully prepared to produce a nutrient rich, highly organic growing medium. The right amalgamation is crucial since fungal, viral and bacterial pests are major concerns for this crop. Serious yield losses can result from opportunistic organisms. Tightly sealed, monitored and environmentally controlled conditions are created in the buildings where mushrooms are grown. They grow in trays that are lined up and stacked like bunk beds in the dark. Temperature, moisture and CO^2 are critical elements. The only light is from blacklight lures to sticky traps. The traps are designed to control insect pests (primarily flies) attracted to the compost that can burrow into mushroom stems and vector diseases.

Lambert Spawn is the oldest supplier of quality spawn in the United States. Stringent quality control measures are taken to insure spawn that is free of contaminants as well as being uniformly viable. Spawn is grain, typically millet, rye or barley inoculated with mycelium. It is mixed into compost in trays. Within approximately two weeks the compost is fully colonized. At this stage a "casing" layer of peat or compost is applied over top to force the mycelia from vegetative to reproductive. More spawn is mixed with the compost at casing to hasten growth and improve crop quality. Pinning occurs as pea size fruiting bodies emerge. Pin mushrooms quickly mature into pre-button, button, closed cap, open cap and finally, portabella mushrooms. Only seven to eight weeks pass from initial spawning to harvest and even the spent substrate, high in organic matter, has many other uses. While this seems like a quick turn around, the process is quite complex. Yet the popularity of mushrooms is on an increase making them a year-round crop.

Button mushrooms, foreground, and portabellas being harvested.

Marylee Ross (green gloves), Dr. Christine Smith (wearing the vest) and Jose Martinez Zorita covering newly prepared trays to keep temperature and CO_2 levels up.

Agaricus mushrooms are Pennsylvania's largest cash crop, producing 45% of the Agaricus and specialty mushrooms grown in the US of which 60% are fresh market. The Mushroom Company in Cambridge, Maryland processes much of the rest into canned and frozen products.

According to Agricultural Marketing Resource Center, 2005-06 US mushroom crop sales were 843 million pounds valued at $881 million. Since 1970 mushroom production has increased 7% each year, but the number of growers has dropped from 500 to about 150. Future trends are expected to include more interest in and production of specialty mushrooms like criminis, italians, shitake, enoki, oyster, maitake, wood ear and other species. Which means, IR-4 and the Northeast region, may see more requests for mushroom trials.

A Word of Thanks...

As you may know, the last six months have been extremely difficult due to the uncertainty of the IR-4 budget for 2007. Factors such as conversion of the "Special Grant" for IR-4 into a competitive grant and uncertainty regarding indirect costs associated with the grant put IR-4's work in a precarious circumstance.

On March 30, USDA issued a Request for Application and IR-4 responded. A review panel will make its recommendation and awards will be granted by July 1. (for background information visit ir4.rutgers.edu/budget)

Though we are not assured of an award, we to need to thank our supporters who worked tirelessly to help IR-4 through this uncertainty. They include Mint Industry Research Council President, Rocky Lundy, and other members of the IR-4 Commodity Liaison Committee, members of the Minor Crop Farmers Alliance, members of CropLife America, and IR-4 regulatory partners, EPA and California Department of Pesticide Registration. As a result of their efforts, IR-4 remains a high priority of Congress even during the current very difficult budget situation.

Thank you for your support!

Awarding Meritorious Service

— by Edith Lurvey, IR-4 Northeast Regional Field Coordinator

Marylee Ross was nominated for the Meritorious Service Award by Dr. Kathryne Everts, Vegetable Pathologist at Lower Eastern Shore Research and Education Center (LESREC). The nomination was supported with glowing letters from Dr. Reginal Harrell, Acting Associate Dean and Associate Director, College of Agriculture and Natural Resources, Maryland Agricultural Experiment Station, Dr. Charles E. Beste, Maryland IR-4 State Liaison Representative, and Dr. Van Starner, Chair of the IR-4 Training Committee. Marylee has served as the IR-4 Field Research Director at the

Marylee Ross

LESREC since 2000, conducting approximately 20 magnitude of residue trials per year. She has become something of a 'go to researcher' for difficult commodities, such as chives, honey and mushrooms. She often manages to get samples in difficult years when other researchers might lose their plots. Marylee loves a challenge and eagerly steps up to the plate when something new is needed. For example, she did an excellent job on a mushroom trial in 2006, is picking up a watercress trial in 2007, as well as adding greenhouse trials to her repertoire. She learns what is needed for a successful crop, and is willing to do what is necessary to get them done well.

Marylee is generous with her time and knowledge, sharing her experience with newer researchers here in the northeast. She has also served as the Northeast Region's field representative on the Training Committee since its inception. She actively participated in the planning and execution of the national training in Phoenix in February of 2006. Without her hard work, the meeting would not have been as successful as it was.

Marylee also works with the growers on the Delmarva peninsula, learning their concerns and needs and disseminating information on IR-4. Another example of her outreach is her close work with Van Starner and others at IR-4 headquarters to put together the 2007 EPA tour, coming up June 27. She helped put together a similar program a few years ago. That tour was so successful, that the current tour is a repeat request. Marylee uses the tours to showcase IR-4 field work, Eastern Shore agriculture in general, and the work of the Lower Eastern Shore Research and Education Center specifically.

IR-4 Calendar

2007 Food Use Workshop
September 11 - 13, 2007, Tampa, FL

2007 Ornamental Workshop
October 10-11, 2007
Cherry Hill, NJ

Combined Southern / Northeast and ARS State Liaison Meeting
October 16-18, 2007
Nashville, TN

National Research Planning Meeting
October 30 - 31, 2007
Princeton, NJ

USDA/ARS New Hire

Kristie Fenn is the new Field Research Director at the USDA Vegetable Laboratory in Charleston, SC. She has been with the USDA at this location for two years as an Agricultural Science Technician . She earned her BS in Environmental Horticulture from the University of Washington.

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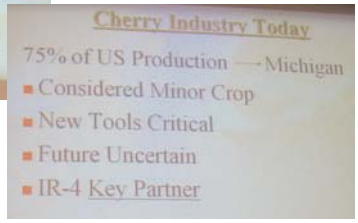
IR-4: Supporting I

"IR-4 is about partnership with registrants and growers and about addressing critical grower needs," stated Cherry Marketing Institute President and IR-4 Commodity Liaison Committee (CLC) member, Phil Korson. "We strongly support the IR-4 Program and believe it is key to new minor (or specialty) crop labels." Phil delivered this message at the 2007 Michigan IR-4 Meeting held March 20. The meeting focused on Michigan agriculture and the work of IR-4 and was targeted for Michigan policy-makers and stakeholders. Its purpose was to increase awareness of the state's rich variety of agricultural crops, examine projections for economic opportunities, learn about pests that stress these crops and discuss IR-4's importance as it relates to pest management in Michigan agriculture. Over 50 people registered for the meeting that was held at the James B. Henry Center for Executive Development on the campus of Michigan State University (MSU). Five attendees received Michigan Department of Agriculture pesticide recertification credits to renew their applicator credential.

Cherry Marketing Institute President, Phil Korson, finds IR-4 a key partner in producing quality cherries for Michigan growers.



Michigan is a unique agricultural state. It is second only to California in crop diversity and is a major processing state. It is also the home of Gerber Products Company, who owns 80% of the $890 million baby-food market. In Michigan, the value of specialty crops is significant at over $1.7 billion and accounts for 26% of the economic impact of Michigan agriculture. Specialty crops make up more than 50% of the state's plant-based agriculture.

When discussing future economic opportunities for Michigan growers, Tom Kalchik, from MSU's Product Center for Agriculture and Natural Resources stated, "Success depends on the industry's ability to match crop production to certain consumer drivers," and identified the drivers as "wellness, indulgence, ethnicity, convenience and value."

The "wellness driver" is related to products that are organic, natural, functional, allergen-free and medicinal. These products avoid harm, are perceived healthier and enhance consumers' health. Examples include cherries, which are used as anti-inflammatory, dry bean or chestnut flour, which is free of one or more commonly known food allergens, and foods that are used under a physician's orders and care and are generally not available in stores or supermarkets. One example are foods formulated to be free of the amino acid phenylalanine for use by persons with phenylketonuria (PKU), a genetic disorder that can result in mental retardation if not treated. Another more available medicinal plant is ginseng. Treatment claims *(this has not been evaluated by the FDA)* for ginseng are numerous and include the use of the herb to support overall health and boost the immune system. IR-4 has supported US ginseng growers and has worked on over nine ginseng projects. Recently, IR-4 submitted a petition to the EPA requesting a tolerance for fluazinam to battle the ginseng diseases of rhizoctonia, root, crown rot and stomatinia black root rot.

The "indulgence driver" includes locally grown, heirloom and community supported agricultures, as well as sustainable, slow, gourmet and artisan foods. Tom talked about the three main goals of sustainable foods as environmental health, economic profitability, social and economic equity and referred to the slow foods movement as seeking to protect the "pleasure of the table from homogenization of modern fast food and life." (More about slow foods can be found at www.slowfoodusa.org.)

Ethnic food production in Michigan is also an opportunity for growers. Tom quoted from a study conducted by the Hale Group, showing ethnic foods growing at a rate of 5% a year. This growth is attributed to the rising ethnic population, mainstream consumers' demand for bolder tastes and people's desire to experiment with new cuisines.

Convenience products present opportunities for growers too. While Tom referred to opportunities being greatest in the wellness, indulgence and ethnic drivers, he encouraged the audience to consider the convenience driver, recognizing that this would require more investment, such as processing equipment to produce fruits and vegetables pre-packaged for consumer convenience.

Fresh market produce, sold direct to consumers, and wholesale to restaurants and grocery markets, makes up a genuine area of economic opportunity for Michigan

Michigan Growers

growers, Kalchik reported. 74% of Michigan fruits and 44% of Michigan vegetables are sold as commodities and while Michigan citizens consume $1.9 billion of higher value fresh fruits and vegetables, most of these come from out of state. According to Eat Fresh and Grow Jobs, Michigan-2006, the potential total economic impact of fresh market produce could increase Michigan jobs by 1,889 and new personal income by $187 million. The Michigan asparagus growers recognized this opportunity and formed a cooperative of growers who committed to providing fresh asparagus to these markets during the growing season. Working in cooperation, they have become a "reliable resource" for fresh asparagus at a price double that previously received for processing. IR-4 plays its part too in assisting Michigan asparagus growers. In February, IR-4 submitted a petition to EPA requesting a tolerance to include asparagus on the fenheximid label.

Buurma Farms Inc. is a grower / packer / shipper organization with farms in Michigan, Ohio and Georgia. They grow and/or market about 60 different vegetables on 3000 acres and have been in business since 1896. Owner, and IR-4 CLC member, Bruce Buurma, confirmed the opportunities in the fresh market convenience industry stating "the bag lettuce market is taking over." Bruce discussed the challenges in his industry. "I used to sell to 100 grocery store chains but now, those stores have been consolidated into a handful of mega stores that are more demanding than ever. We have to be better farmers to meet the needs of consumers and the environment and IR-4 has helped us get this done."

He went on to give one example of IR-4's role in helping growers in the North Central Region state of Ohio. Every year IR-4 conducts a Food Use Workshop to prioritize the next year's research. One year, Bruce learned the value of attending these workshops. He needed to have oxyfluorfen labeled on green onions and that year he went on a crusade to discuss the need and gather consensus with every farmer in the state. He brought this message to the IR-4 Food Use Workshop where he met face-to-face with agrichemical representatives and researchers. His efforts were recognized and eventually paid off when green onions were put on a priority list by the registrant for a state specific label for oxyfluorfen. Bruce concluded, "Without IR-4, Michigan and the North Central Region would be lacking in fresh fruits and vegetables. IR-4's research has brought valuable pest control tools to growers in our state and the region. This makes it possible for us to bring safe, diverse and reasonably priced produce to homes throughout the North Central Region and the U.S."

Each year IR-4 conducts research and submits data to EPA to support a number of tolerances for almost every specialty crop grown in Michigan. Researcher, John Wise, who works on IR-4 projects for apples, pears, blueberries, grapes, peaches, plums and cherries, concentrates his work on the critical performance characteristics of insecticides available for controling Michigan fruit pests. He spoke at the meeting on Integrating Reduced-Risk Tools into 21st Century Specialty Crop Production. His research evaluates the newer, reduced risk insecticides, which he believes, compared to the older broad spectrum materials, need to be combined with quality orchard scouting, precise application timing, and enhanced grower knowledge for optimum results. His conclusion, "the greatest challenge will be effectively matching a blend of Integrated Pest Management (IPM) tools to site-specific conditions."

So when North Central Region IR-4 Program Director Bob Hollingworth addressed the participants, he posed the question, "who benefits from IR-4?" The answer was clear. Growers, food processors, food and organic retailers and the general public all benefit from research data developed by IR-4.

Trevor Nichols Research and Extension Center and IR-4 Field Research Director, John Wise discusses the need for a holistic approach when using newer reduced risk pest management tools.

Each year IR-4 conducts research and submits data to EPA to support a number of tolerances for almost every specialty crop grown in Michigan.

P. Capsici

continued from page 1

became uncertain, and then finally paid for eight field trials, four on peppers and four on cucurbits. Results were somewhat variable but cyazofamid, mandipropamid, fluopicolide, and captan showed promise in some trials.

A third workshop was organized for the winter of 2005. Results were discussed and due to continued variability, it was decided that researchers would focus on one crop and many trials of the same treatments and rates. Peppers were chosen as the crop and a list of ten treatments were put together. The best performers from 2005 plus a new numbered compound, SA-110201 were evaluated in 2006. Twelve field trials were conducted using these treatments, ten of which were on peppers, one on squash and one on watermelon. Monies for these trials came from a number of sources including chemical companies, commodity groups and IR-4. Researchers gathered at Cucurbitaceae 2006 to discuss the results. As usual, they were variable but good performers could be identified. A conference call held in February 2007 discussed the need for further testing. During the call, which included researchers and chemical company representatives, it became apparent that the chemical companies were now ready to develop more extensive evaluation programs for these promising fungicides. They will work with researchers on new candidate fungicides. IR-4 will direct companies with new compounds to appropriate researchers.

Working Group Established
This group of researchers is now organizing an international P. capsici conference with Alex Csinos of the University of Georgia and Pam Roberts of the University of Florida as the lead organizers. The value and future of the P. capsici project can be seen in the development of a USDA/CSREES working group.

At the encouragement of James L. Green, National Program Leader - Horticulture, Dr. Mary Hausbeck is taking the leadership in developing a proposal to form a USDA CSREES Multistate Project on Phytophthora capsici. If approved, the project would make travel funds available from the Dean and Directors' Hatch budgets for their faculty working with P. capsici to attend at least one national P. capsici Multistate Project meeting each year. It would facilitate networking, planning-reporting (such as that of IR-4), collaboration and research. It would also place the P. capsici Multistate Project group in a good position to apply for integrated, multistate, competitive grants. There are a number of CSREES Hatch projects and competitive grant projects related to P.

continued on back page

Clearances Dec. '06- Feb.'07

The trade names listed below are provided as a means to identify the chemical for which a tolerance has been established. A trade name listed here may not be the name of the product on which the new food use(s) will be registered. Only labeled products may be used on a food crop.Be sure to obtain current information about usage regulations and examine a current product label before applying any chemical.

Glyphosate
Trade Names: Roundup, Glyphomax, Rattler
Crops: noni (Indian mulberry) pea-dry, sunflower, safflower, Vegetable, legume, group 6 (except soybean)
PR# 06164, 06120, 06162, 06139, 06140, 06142, 08853
Federal Register: 12/20/06

Boscalid
Trade Names: Endura, Pristine
Crops: Leafy greens subgroup 4A (except head & leaf lettuce), Leafy petioles subgroup 4B
PR#: 09302
Federal Register: 12/20/06

Fluroxypyr
Trade Names: Starane, Tomahawk, Tomigan
Crops: garlic bulb, onion bulb, shallot bulb **PR#:** 07705
Federal Register: 12/20/06

Myclobutanil
Trade Names: Eagle, Nova, Rally, Systhane
Crop: hop **PR#:** 06939
Federal Register: 12/20/06

Dimethomorph
Trade Names: Acrobat, Forum
Crops: Brassica (head & stem) subgroup 5A **PR#:** 07199, 07248, 07620
Federal Register: 12/20/06

Zeta-Cypermethrin
Trade Names: Fury, Mustang
Crops: cilantro, turnip greens,
PR#: 08390
Federal Register: 12/29/06

Sethoxydim
Trade Name: Poast, Vantage
Crops: borage, buckwheat, okra, turnip greens, Vegetable, root and tuber group 1 (includes Radish tops)
PR#: 01348, 02339, 07208, 06289, 02048, 02468, 02470, 04128, 05378,
Federal Register: 2/28/07

Previously unreported

Diflubenzuron
Trade Names: Dimilin, Adept, Micromite **Crops:** barley, Brassica, leafy greens, subgroup 5B, oat, peanut, pummelo, turnip greens, triticale, wheat,
PR#: 08032, 08031, 08028, 08023, 08024, 07737, 09499
Federal Register: 11/29/06

Paraquat
Trade Names: Boa, Cyclone, Gramoxone, Starfire
Crop: ginger, garlic, okra, onion, dry bulb, shallot, triticale, Vegetable, cucurbit, group 9, wheat **PR#:** 07824, 02983, 01913, 00292, 01476, 02978, 02982, 02985, 03069, 03070, 03926 06224, 06503
Federal Register: 9/26/06

Fenbuconazole
Trade Name:
Crops: Bushberry subgroup 13B, grape **PR#:** 06368
Federal Register: 9/22/06

Propiconazole
Trade Name: Enable, Govern, Indar **Crops:** cranberry, mint, Leafy petioles subgroup 4B
PR#: 06320, 07359, 09419, 06350 **Fedral Register:** 9/22/06

Pendimethalin
Trade Name: Alamo, Banner, Break, Orbit, Tilt, PropiMax
Crops: Fruit, stone, group, Fruit, pome, group11, juneberry, leek, pomegranate, onion-green, onion- welsh; shallot, strawberry, Vegetable, fruiting, group 8
PR#: 05097, 04578, 02739, 06669, 06609, 06610, 0661,1 06674, 06608, 06760, 02219, 02740, 02741
Federal Registry: 9/27/06

Western Region IR-4 Training

— by IR-4 Western Region Assistant Field Coordinator, Stephen Flanagan

Western region researchers, along with others from as far a field as Gainesville, Florida and Minot, North Dakota, met in balmy Hawaii for a two day field and laboratory GLP training event.

Martin Beran's presentation on QA and researcher harmony was an off the charts funny and informative highlight of the Western Region's recent Hawaii training. After counting down the "Top 10 Findings of 2006", Martin entertained the audience by turning the tables and suggesting a new QA in-life inspection checklist. Instead of the standard QA checklist how about the following check-offs? "Was QA greeted with open arms?", "Did the researcher cordially ask QA 'How was your flight?'?" "Did the researcher have hot cocoa on hand (the kind with the little marshmallows)?

After the laughter subsided the group did return to seriously reviewing ways to cooperate effectively between QA and researchers. With new projects like the ePen notebooks and old fashioned problems like freezer failures, there were more than enough topics to fill one day of classroom discussions. Researchers in the field sessions discussed electricity failures (a Saturday night car meets telephone pole incident at the station in Aurora, OR) and freezer backup preparations, along with many germane topics. Presentations by Rebecca Sisco and Stephen Flanagan covered a variety of topics garnered over the past two year's QC and QA notebook reviews.

The laboratory breakout was lead by Matt Hengel and included discussions covering archiving data, sample handling and storage stability. Mike McChesney from the UC Davis laboratory presented a photo journal of how to capture analytical data into PDF format. Dr. Vince Hebert from Washington State University covered sample processing with the goal to improve consistency across the entire IR-4 program. Storage stability issues concerning low recoveries and other analyses and storage issues rounded out the discussions. The laboratory session wrapped up with a tour of the Hawaii lab led by Karl Yanagihara with a detailed demonstration of how the lab runs coffee studies.

What exactly is an untreated buffer row? How do you select permanent markers or locate adjacent field plots on your maps? How do you use aerial maps and digital photos in your paper notebooks? Applications, Sample harvesting, Shipping, Test Substance, EPA audits and Crop Destruct were among the various field breakout topics. A key element of the classroom training was using electronically scanned notebook pages to stimulate discussions and illustrate how to and how not to conduct and document various research activities. Regardless of the presented topics the discussion between researchers was a key component of the training's success.

The evening reception included an opportunity to mingle with colleagues and for James Kam to show off the "apple of the east", rambutan. James brought in branches of fruit from the untreated controls of a current IR4, Hawaii study. Visually it's a bright red spherical fruit which resembles a double sized cockle-bur with longer and fortunately softer appendages. Taste wise rambutan is well… I won't

attempt at description, hit up your local Asian market or head to Hawaii for a first hand taste. The rambutan fruit was sampled by the braver souls and served as a precursor for day two's specialty crop tour around the island of Oahu.

Oahu: home to Waikiki, Pearl Harbor, the North Shore and Sunset Beach is also home to Sumida's watercress farm, a BYU papaya farm and Dole farming's pineapple and coffee fields. With many pineapple growers leaving the islands for the cheaper growing regions of Central America and Asia, growers like Dole are diversifying their cropping profile to maintain profitability. One attempt at this diversification is Dole's coffee fields which in time may produce a product comparable to the exclusive Kona coffee grown on the big island of Hawaii. Seeing this diverse island farming gave the group an appreciation for the Hawaiin Island's unique specialty crops.

A few Hawaiian tropical fruit, from the top left & moving clockwise: Star Fruit, Pineapple, Coffee and Papaya flowers.

The postscript for a long day in the classroom and an excellent tour of Oahu from our gracious Hawaiian hosts was to bid the tropics adieu and return to our respective homes. I wonder what the temperature differential was returning to Minot, ND? Although we visited the islands and received a taste of its unique crops, we mainlanders are still mere neophytes regarding Hawaii. This Hawaiian experience successfully combined setting and people allowing for an interchange of ideas and techniques, a process which can now carry on well beyond the islands.

P. Capsici

continued from page 7

capsici. In addition, considerable dollars were allocated by Congress through 2006 for P. capsici research, extension and education projects across the US. Coordination of the efforts through the Multistate Project should be beneficial. The national significance of P. capsici has increased. Formation of the Multistate Project should enhance attention and funding for P. capsici.

Gathering researchers together was the first step, gaining awareness and possible solutions the next. Measurable results from these group discussions are the future registration of cyazofamid, fluopicolide, mandipropamid, fluazinam, and SA-110201 for the control of P. capsici and captan use being considered for re-registration through a subpart D hearing to reclaim uses lost in Special Review.

There is more to be learned and working in partnership with chemical companies, researchers, IR-4 and the USDA / CSREES will help cucurbit and pepper growers in their battle against this devastating disease.

All photos in this article were provided by Mohammad Babadoost Dept. of Crops Sciences University of Illinois Urbana-Champaign

2007 Food Use & Ornamental Workshops

The **2007 IR-4 Food Use Workshop** will be held September 11-13, 2007 in Tampa, Florida at

The Embassy Suites Hotel
3705 Spectrum Boulevard
Tampa, FL 33612

Reservations for the hotel can be made by calling 813.977.7066. Mention the IR-4 Food Use Workshop to secure the special rate of $114 (single). The cut-off date for hotel reservations is **August 20, 2007**.

The **2007 Ornamental Workshop** will be held October 10-11, 2007 in Cherry Hill, New Jersey at

Crowne Plaza Cherry Hill
2349 West Marlton Pike
Cherry Hill, NJ 08002.

To make hotel reservations call 856.665.6666 or make reservations via the website at crowneplaza.com/cherryhillnj. Mention the IR-4 Food Use Workshop to secure the special rate of $99 (single). The cut-off date for hotel reservations is **September 7, 2007**.

For more information contact: Cheryl Ferrazoli at ferrazoli@aesop.rutgers.edu or 732.932.9575 x 4601.

You can register for the workshops online at ir4.rutgers.edu!

The IR-4 Project
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