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IPMnet NEWS

Issue #177

March 2010

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Global Principles, Local Practices

Providing global Integrated Pest Management information, 1993-2010

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I. NEWS ABOUT IPM

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IPM and Australian Vegetable Production

IPM has gained the attention and interest of AUSVEG, AUSTRALIA's national industry body representing the interests of vegetable and potato growers, though IPM adoption for vegetable crops is said to be "still fairly recent," the organization's website notes <http://www.ausveg.com.au/ipm.cfm>.

AUSVEG defines IPM as "a farm management strategy to keep the population of harmful pests below the point where they are causing unacceptable loss in marketable yield," and cites IPM management strategies as using "a range of complimentary tools and control techniques."

AUSVEG officially views IPM as "a model of continual improvement," for both research and adoption. The concept is visually represented by AUSVEG as a 5-step sequence: (1) Knowledge--being informed about key pests, pest lifecycles, natural enemies, and management options; (2) Prevention (indirect methods)--site selection, crop variety choice, time of planting, moisture and nutrition management, sanitation (removing diseased or infected plants), cultivation, and habitat management; (3) Observation--crop monitoring (scouting), pest prediction models, pheromone or sticky traps; (4) Intervention (direct methods)--mechanical, biological, and chemical controls; and, (5) Evaluation Planning--crop records, communicating/reading/listening/thinking, changing or adjusting management tactics.

Growers, consultants, and others in the vegetable production realm have varying experiences and thus perspectives about IPM, AUSVEG observes. These can range from minimal knowledge, to outright skepticism, or active enthusiasm. In practice growers align along a continuum from decreased and more effect pesticide usage to biointensive regimes that rely on beneficial organisms. As IPM gains in sophistication and impact, it can become an evermore important component of crop management and "potentially involve the whole market chain," AUSVEG believes. -> AUSVEG, 756 Blackburn Rd., Suite 7, Clayton North, VIC 3170, AUSTRALIA. Fax: 61-03-9558-6199. info@ausveg.com.au. Voice: 61-03-9544-8098. [#]

IPM Grants Emphasize Education and Extension

A U.S. government funded cluster of IPM-related research grants is taking a clearly different approach in 2010 and soliciting education- extension focused components as integral elements in grant proposals to be submitted, according to an official communication describing the program's new emphasis.

The National Institute of Food and Agriculture (NIFA, a branch of the U.S. Dept. of Agric.) conducts three specific IPM programs; Crops at Risk (CAR); Risk Avoidance and Mitigation

Program (RAMP); and, Methyl Bromide Transition (MBT), which together total an estimated US\$8.45M in program funding.

Applicants intending to submit proposals for any of the three main IPM grant headings are encouraged to view the procedure "with a fresh eye toward developing the next generation of extension professionals and/or pest managers," notes W. Hoffman, national program leader for agriculture, in his recent email message to pest managers across the country.

Within each of the three programs, the called for education and extension integrated projects will conduct practicum or educational internships directed toward preparing undergraduate or graduate students to be future extensionists or pest managers. The resulting exposure is envisioned to enhance participants' ability to foster IPM approaches that are consistent with the goals of the CAR, RAMP, and MBT programs.

For more detailed descriptions of each of NIFA's IPM programmatic trio see: <http://tinyurl.com/ctbg6b> (scroll down the list). -> W. Hoffman, WHoffman@nifa.usda.gov.
Voice: 1-202-401-1112.

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GLOBAL IPM NOTES

- * Use of moth-attraction technology (MAGNET) can enhance resistance management effectiveness of refuges for *Helicoverpa armigera* in cotton with Bollgard II® traits. -> S.J. Addison, SJAddie@gmail.com.
- * A recent study quantitatively demonstrated that commercially available plant-derived essential oil products vary in effectiveness against certain pest arthropoda listed on the labels, and often were even found to be phytotoxic. -> R.A. Cloyd, RCloyd@ksu.edu.
- * Yields of *Phaseolus vulgaris* (dry bean) planted in zero tillage stuble or a cover crop, along with a suitable herbicide program, compared favorably with the yields from no-cover control plots. -> R.E. Blackshaw, BlackshawRE@agr.gc.ca.
- * In Hawaii, researchers developed a novel, visually attractive, yellow bait station for effectively attracting several pest fly species while protecting bait against rainfall. -> J.C. Pinero, JPinero@ctahr.hawaii.edu.

* Combining an entomopathogenic fungus (*Beauveria bassiana*) with a botanical insecticide (neem) may have dual benefits, and can be effective in the field for managing *Bemisia tabaci* (sweetpotato whitefly) on *Solanum melongena* (eggplant). -> S. Ren, RenSxcn@yahoo.com.cn.

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II. IPM INFORMATION RESOURCES

- web, CD/DVD, video and shorter publications
- > *Other recently published materials*

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IPMnet NEWS welcomes information about **websites, publications, CD/DVDs, or videos** focused on, or related to, crop IPM, or invasive species. Please send a review copy of the material to the postal address at end of this file; or, send the URL to: IPMnet@science.oregonstate.edu. A {\$} indicates an item can be purchased, or that there may be charges for handling and postage, or both.

SP-IPM LAUNCHES A NEW INFORMATION SERIES

The CGIAR* Systemwide Program on Integrated Pest Management (SP-IPM) has launched a new information series as a periodic, concise mode of informing a broad audience about IPM research findings and innovations of SP-IPM members and their collaborators. The first entry under the banner of Technical Innovation Brief (TIB) is entitled, "Rodents--Gnawing Away at Crops, Stored Grain and Our Health," by recognized authority G. Singleton, currently on staff at the International Rice Research Institute in the PHILIPPINES. In his 2-page brief, Dr. Singleton establishes the hazard posed by rodents, and then discusses emerging innovative solutions and sets out specifics for rice field rat management. Weed scientists D. Johnson, *et al*, use Brief #2, February 2010, to point out the increasing importance of managing weeds. In "Lost to the Weeds--Changing Practices Favor an Old Enemy," the authors cite the negative impact on rice production of highly competitive weeds and the unacceptable concurrent yield losses in a world where food is a vital commodity. There is an urgent need for intensive, carefully selected practices; the authors strongly advocate for integrated weed management and an overall "longer term and broader approach to weed management" being an imperative in contrast to inflexible, rigid systems. All interested parties are encouraged to freely subscribe to TIB. See: www.spipm.cgiar.org.

-> SP-IPM Secretariate, c/o IITA, Ibadan, NIGERIA. sp-ipm@cgiar.org.

* *Consultative Group on International Agricultural Research.*

--excerpted, with thanks, from SP-IPM sources. [#]

LATE BLIGHT IN TOMATOES

The 18 February 2010 edition of WISCONSIN CROP MANAGER includes the article "Managing Late Blight in Tomatoes," containing facts, questions, and answers about *Phytophthora infestans*, the highly contagious fungus-like organism that mainly attacks potatoes and tomatoes and which is responsible for the disease known as late blight. With illustrations, tables, and a straight-forward text, the short paper by extension

plant pathologist A.J. Gevens, *et al*, provides information for both conventional and organic tomato production, presents a broad listing of blight resistant tomato cultivars, and offers suggestions for blight management primarily emphasizing sanitation. The information, while based on conditions in the U.S. state of Wisconsin, has potentially broader applicability.

See: <http://ipcm.wisc.edu/WCM/News/tabid/53/Default.aspx>.

--excerpted, with thanks, from WISCONSIN CROP MANAGER ; thanks to R. Schmidt. [#]

PASTURE PATHOLOGY

The Bio-Protection Research Centre (BPRC) at Lincoln Univ., NEW ZEALAND, has published PASTURE DISEASES IN NEW ZEALAND, a 2009, illustrated work by I. and B. Harvey. The 144-page publication includes over 100 photos and visuals, and outlines distribution and importance, symptoms, causal agents, and management techniques for more than 50 diseases of grasses, clovers, and lucerne (*Medicago sativa*). -> A. Heslop, Anna.Heslop@lincoln.ac.nz. Voice: 63-03-325-3696.

--excerpted, with thanks, from the BPRC website. [#]

CROP PROTECTION GUIDE

The Canadian Province of British Columbia has published FIELD CROP PROTECTION GUIDE, 2008-2009 as a "Guide to Best Management Practices in British Columbia for Cereals, Canola, Field Corn, Field Peas, Grasses and Legumes for Forage and Seed Production" for the region. In addition to the printed Guide, the same information is online in PDF at <http://tinyurl.com/y9zwpe2>. Following an in-depth introduction, the Guide's chapters cover weed, disease, and pest insect management, as well as application equipment and calibration. -> BC Ministry of Agriculture and Lands, PO Box 9120 STN PROV GOVT, Victoria, BC V8W 9E2, CANADA. Voice: 1-250-387-5121. [#]

= Other Recently Published Materials =

* The February 2010 edition of Fruit Fly News, FFN#15; <http://tinyurl.com/ygx8pro>.

* ENDURE News, issue 7, January 2010; www.endure-network.eu.

* Haustorium 56, December 2009, the parasitic plants newsletter; www.parasiticplants.org.

* Univ. of California Statewide IPM Program Annual Report, 2009 Highlights; www.ipm.ucdavis.edu/highlights.

* Brochures for new IPM3 modules; MAscerno, MAscerno@umn.edu.

* News item: "IITA to Intensify Fight Against Deadly Cassava Disease in Sub-Saharan Africa,

Supported by Bill & Melinda Gates Foundation," <http://tinyurl.com/ybuqcx1>.

* Announcement of **Lucid(R) Interactive Identification Tool**, "Bark Beetles of the Southeastern United States," <http://tinyurl.com/yetkfwm>.

* **CABI video**, "Looking for Danger: Plant Disease Surveillance," www.youtube.com/watch?v=0gedo2VJcEE.

* Revised "**NPM/IPM Pest Management Fast Facts**," from Univ. of Wisconsin; <http://tinyurl.com/y8suaf9>.

* Recent **U.S. Agricultural Research Service news releases**, found at: www.ars.usda.gov/is/pr/.

- "ARS Scientists Help Fight Damaging Moth in Africa," 10 December 2009
- "New ARS-Developed Soybean Line Resists Key Nematode," 31 December 2009;
- "In Organic Cover Crops, More Seeds Means Fewer Weeds," 25 January 2010;
- "ARS Scientists Turn to a Wild Oat to Combat Crown Rust," 04 February 2010.

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III. IPM MEDLEY

Equipment; Products; Processes; Services; Professional Opportunities

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= CONJURING UP UNEARTHLY WEEDS

In what surely must be a world class role reversal, U.S. weed scientist/botanist J.S. Holt, who has built a sterling career honing weed management strategies, answered a call from filmmakers to create a new and nasty range of invasive weed species. Of course, these became the audacious imaginary 'flora of Pandora' conjured up by Dr. Holt to populate the moon "Pandora" where much of the action in the recently released film "AVATAR" takes place. Holt, in her academic life as chair of botany and plant sciences and professor of plant physiology at the Univ. of California, Riverside, was initially contacted to help an actress in the film prepare for the role of a field botanist and how someone in that profession would behave and dress, as well as conduct plant sampling.

Holt's input soon expanded beyond coaching as the film crew asked her to apply her extensive knowledge of plant physiology and weed science to help develop the unearthly world they were creating. Based on an outline of Pandora's environment, Holt began the task of deciding how plants would adapt, especially in the absence of gravitational pull. Experience with pernicious earthly weeds helped round out nasty characteristics including exploding seed pods, caustic resins and oils, and appetites and ability to trap and digest small animals.

Out of the exercise came a full chapter on the flora of Pandora with vivid descriptions covering aspects from botanical characteristics to ecological impacts for a related publication, Avatar: An Activist Survival Guide and an "Avatar" video game. Holt even created a simple taxonomy containing both common and scientific nomenclature. Another output was a short essay noting the hazards of introducing non-native plants, in this case Pandora's *Scorpioflora maxima* (scorpion thistle), on planet Earth, a parallel to

Holt's strong conviction that invasive plant species can wreak havoc in real life ecosystems.

For full details, see: <http://tinyurl.com/yjm9tje>. -> J.S. Holt, 2133 Batchelor Hall, Univ. of California, Riverside, CA 92521, USA. Fax: 1-951-827-4437. Voice: 1-951-827-3801. Jodie.Holt@ucr.edu.

--excerpted, with thanks, from a PRWeb press release, and from J.S. Holt; thanks also to

S. Lloyd for information. [#]

= EQUIPMENT, PRODUCTS, PROCESSES, & SERVICES =

New Standard for Protective Clothing

ASTM International (ASTM), originally known as the **American Society for Testing and Materials**,

has developed a new protective clothing standard for applicators of pesticides (ASTM F2669) that strives for the right balance of protection while avoiding over-protection in hot/humid climates that can often result in low compliance, or even heat stress.

According to A. Shaw, chair of the task force that developed the new standard, the specifics take the level of potential risk into account in making a recommendation for protective gear. Three levels of protection were identified based on risk determined as part of pesticide registration. Clothing thus can range from a cotton, or cotton/polyester, coverall at Level 1 to garments meeting more stringent requirements for higher risk products. The standard is available in either print or PDF. {\$} See:

www.astm.org/Standards/F2669.htm. -> A. Shaw, AShaw@umes.edu. *Note:* ASTM is an international standards organization that develops and publishes voluntary consensus technical standards for a wide range of materials, products, systems, and services.

--excerpted, with thanks, from the ASTM website; thanks, also, to H-A. Rother for information.

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= PROFESSIONAL OPPORTUNITIES =

PLANT PATHOLOGIST, Pago Pago, AS, USA * Research (70%), extension (25%), and instruction (5%) in plant pathology for

sustainable production of taro,

banana, and other tropical crops; operate/maintain plant pathology laboratory; oversee tissue culture facility; provide plant disease diagnostic services. * REQUIRES: graduate degree in plant pathology; strength and stamina to conduct field work in the humid tropics; excellent written and oral English language skills; ability to work without supervision, either individually or on a team.

* CONTACT: D.L. Vargo, PO Box 5319, Pago Pago, AS 96799, USA. Fax: 1-684-699-5011.

DonVargo@rocketmail.com. [#]

WEED RESEARCH ASSOCIATE, Davis, CA, USA * Responsible for research and extension related to assessing the abundance, distribution, and perceived threat of glyphosate-resistant weeds; help develop and communicate economical and environmentally sound strategies for managing glyphosate-resistant weeds and preventing their evolution and spread; participate in all aspects of collaborative research including design, set up, data analysis, reporting, and evaluation. See: <http://tinyurl.com/y17hnd3>. * REQUIRES:

PhD; experience in herbicide resistance research; demonstrated ability to effectively bridge between basic research, applied research, and technology transfer efforts related to agricultural weeds or invasive plants. * CONTACT: B. Hanson, Dept. of Plant Sciences, MS 4, Univ. of California, Davis, CA 95618, USA. BHanson@ucdavis.edu. Voice: 1-530-752-8115. [#]

ENTOMOLOGY & BIOCONTROL SCIENTIST, Indooroopilly, QLD, AUSTRALIA * Research the exploration and evaluation of biological control agents; apply target-agent interactions, host specificity, and risk analysis; determine key mortality factors, molecular analysis, evolutionary associations, and biogeography; develop efficient protocols using best practices and novel techniques; identify host biocontrol agents having a high impact on both plant and insect targets. * REQUIRES: PhD; documented ecological research experience; demonstrated knowledge of biocontrol; ability to conduct or lead multi-disciplinary research; excellent interpersonal, oral, and written communication ability; capability to develop and lead innovative research; willingness to conduct research in remote areas; current drivers license. * CONTACT: CSIRO Position 2010/51. To apply, see <http://tinyurl.com/yb7j249> and scroll to very end.

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IV. IPM-RELATED PUBLICATIONS

- books, other longer publications

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IPMnet NEWS will gladly mention publications focused on, or related to, crop plant IPM, pest management, crop protection or invasives. To facilitate review please send a copy of the publication, along with full details, to IPMnet NEWS (address at end of this file). --many thanks, --Ed.

A {\$} symbol indicates a publication can be purchased, or that the publisher may charge for handling and postage, or both.

NEW PLANT PATHOLOGY TEXT GAINS PRAISE

The sweepstakes for a thoroughly informative and visually appealing introductory plant pathology text has a new, reader-friendly and broadly impressive leader published by the American Phytopathological Society (APS). The recently released (2010) second edition of **Essential Plant Pathology** has quickly gained acclaim and strong recommendations as "a core addition to personal, professional, academic, and community library collections and supplemental reading lists" on the basis of its solid technical content, graphically appealing and readily followed layout, and effective overall design for knowledge transfer. Authors and plant pathology educators G.L. Schumann and C.J. D'Arcy not only clearly explain the presented key concepts, but provide a wealth of supplemental material such as highlighted critical concepts, case studies, short summaries of important plant diseases, and other features, such as cultural and historic facts, to emphasize how plant pathology relates to the world in real terms. Each copy includes a linked PC and MAC compatible DVD that is integrated with the APS peer-reviewed education center, and which is arranged to facilitate course presentation and preparation. The hardbound new edition sparkles with nearly 300 color images throughout its 384 pages printed on high quality coated paperstock. For more detail plus specifics of a 60-day evaluation offer for instructors, and arrangements for university and college bookstore orders, see <http://tinyurl.com/ygiv4o6>. {\$} -> APS Press, 3340 Pilot Knob Rd., St. Paul, MN 55121, USA. Fax: 1-651-454-

0766. aps@scisoc.org. Voice: 1-651-454-7250. [#]

ALL ABOUT ROOT-KNOT NEMATODES

Among crop attacking plant-parasitic nematodes the most economically important are the *Meloidogyne* species, a highly diverse group distributed worldwide. A 2009 volume, **Root-Knot Nematodes**, edited by authorities R.N. Perry, *et al*, with contributions from more than 40 international scientist experts, draws together a mass of information covering: detection, life cycle biology, taxonomy, classification, morphology, sampling, and, importantly, management strategies and resistance characteristics of these pernicious pests. In its 19 chapters and 514 pages the hardbound work enlivens text material with dozens of black/white photos and line drawings as well as a 16-page full color photo section. The editors set out three broad aims: to summarize and bring focus to the main findings from the vast volume of literature produced over the years; to present and discuss recent advances in the molecular genetics of root-knot nematodes; and, third, to highlight control options and management strategies. An interesting, if disconcerting observation presented alludes to a "real concern across the nematological world for the future development and support of nematological expertise" and its current paucity impacting agricultural research and services. Overall the work stands as a practical reference for both researchers and extensionists. {\$}

See: <http://tinyurl.com/yz3Xfma>. -> CABI, Nosworthy Way, Wallingford, Oxfordshire OX10 8DE, UK. cabi@cabi.org. Fax: 44-0-1491-833508.

Voice: 44-0-1491-832111.

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V. IPM-RELATED RESEARCH/TECHNICAL ARTICLES

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SELECTED TITLES

Selections from current literature. **IPMnet NEWS** will gladly provide the address and email, as available, for first authors of the following titles. Direct requests to: IPMnet@science.oregonstate.edu.

Phytopathology

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“Integrated Management Strategies for *Phytophthora sojae* Combining Host Resistance and Seed

Treatments,” Dorrance, A.E., *et al*. * PLANT DIS., 93(9), 875-882, September 2009.

“Combating Plant Diseases—the Darwin Connection,” Hollomon, D.W., and K.J. Brent. * PEST.

MGMT. SCI., 65(11), 1156-1163, November 2009.

Weed Science / Invasives

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“Forest Roads Facilitate the Spread of Invasive Plants,” Mortensen, D.A., *et al*. * INVASIVE

PLANT SCI. & MGMT., 2(3), 191-200, July-September 2009.

“Effects of alternative winter cover cropping systems on weed suppression in organically grown tomato (*Solanum lycopersicum*),” Mennan, H., *et al.* * PHYTOPARA., 37(4), 385-396, September 2009.

Entomology

“Predicting Insect Pest Status Under Climate Change Scenarios: Combining Experimental Data and Population Dynamics Modeling,” Estay, S.A., *et al.* * JRNL. OF APPLD. ENTOM., 133(7), 491-499, August 2009.

"Development of a Biological Control-based Integrated Pest Management Method for *Bemisia tabaci* for Protected Sweet Pepper Crops,” Calvo, F.J., *et al.* * ENTOMO. EXPER. ET APPLI., 133(1), 9-18, October 2009.

Nematology

“Root-Knot Nematode-Resistant Alfalfa Suppresses Subsequent Crop Damage from the Nutsedge-Nematode Pest Complex,” Fiore, C., *et al.* * AGRON. JRNL., 101(4), 754-763, July-August 2009.

General

“Insect Pests and Insect-vectored Diseases of Palms,” Gitau, C.W., *et al.* * AUSTRAL. JRNL. OF ENTOM., 48(4), 328-342, November 2009.

“Potential for Pesticide and Nutrient Savings Via Map-based Automatic Boom Section Control of Spray Nozzles,” Luck, J.D., *et al.* * COMPUTERS AND ELEC. IN AGRIC., 70(1), 19-26, January 2010.

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VI. U.S. AID's IPM-COLLABORATIVE RESEARCH SUPPORT PROGRAM (IPM-CRSP)
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Two Non-chemical Techniques Introduced

Strawberry (*Fragaria*) crops in HONDURAS are attacked by *Phytonemus pallidus* (cyclamen mite)

a tiny pest that often goes undetected in new plantings and subsequently requires application of an acaricide. Since most acaricides currently registered for use on strawberry in Honduras do not have ovicidal effect, constant treatment is needed to keep mite populations at a manageable level. Enter the concept of treating planting material with hot water (43 deg. C. +/- 1 deg.) for 30 min. which in trials kept the crop mite free for 26 weeks. Hot water was more effective than an endosulfan dip. The hot water procedure improved yield and fruit quality while lowering production costs. The technology was introduced with support from the IPM CRSP.

A two-year field trial, following growth chamber and laboratory screening, revealed that application of *Bacillus pumilis* isolate ET consistently reduced witches' broom disease severity in *Theobroma cacao* (cacao) when three applications of bacteria per year were coupled with two phytosanitary prunings per year. *B. pumilis* and three other bacterial isolates were also tested for suppression of cacao pod disease and cherelle wilt in two cacao genotypes; *B. pumilis* significantly reduced wilt in both genotypes. While none of the four tested isolates reduced other pod diseases season-long, there was some suppression and delays in disease development. The reduction in witches' broom severity is the first report of a biological procedure to be able to suppress this condition which can cause severe losses. The IPM CRSP sponsored this research. -> IPM CRSP, OIRED, Virginia Tech, 526 Prices Fork Rd., Blacksburg, VA 24060, USA. Fax: 1-540-231-3519. IPM-dir@vt.edu. Voice: 1-540-231-3516.

–excerpted, with thanks, from IPM CRSP materials; thanks also to R. Muniappan for information. [#]

2009 Annual Report Published

The IPM-CRSP has published its FY 2009 ANNUAL REPORT covering 01 October 2008 - 30 September 2009, and made it freely available online at <http://tinyurl.com/ycl4744>. The information laden document, weighing in at a hefty 365 pages, covers the wide swath of the program's activities well under way globally and the results and achievements developing therefrom. The well established program, currently in Phase III, includes a vigorous training component. The U.S. Agency for International Development provides ongoing support. Virginia Tech has been the implementing institution ever since program inception 16 years ago.

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VII. IPMnet CALENDAR--UPDATE

- recent **additions** and **revisions** (only) to a global listing of forthcoming IPM-related events,
2010-2013.

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NOTES:

1. The **IPMnet CALENDAR--Update**, lists only:
 - (N)ew events not previously cited in **IPMnet NEWS**; and,
 - [R]evised events with new information compared to a previous mention in **IPMnet NEWS**.
2. The **IPMnet CALENDAR, Latest Complete Version**, can be requested any time from IPMnet@science.oregonstate.edu. It is also online at www.pestinfo.org/calendar.php3 courtesy of the International Society for Pest Information (ISPI) and B. Zelazny, ISPI's executive director. The latter site includes features intended for user convenience. The **IPMnet CALENDAR--Update** section appears in each **IPMnet NEWS** issue.
3. Please send information about future events, or revisions, to: **IPMnet NEWS**, at IPMnet@science.oregonstate.edu. Information listed in the **IPMnet CALENDAR** was supplied by, and collected from, various sources; IPMnet greatly appreciates all cooperation.

(N)ewly Listed, or [R]evised Entries: as of 01 March 2010

2010

- (N) 08-12 March * **22nd ASIAN PACIFIC WEED SCIENCE CONFERENCE**,
“Judicious Weed Management – Road to Sustainability,” Lahore, PAKISTAN. Info: G. Hassan, Dept. of Weed Sci., NWFP Agric. Univ., Peshawar 25130, PAKISTAN. Voice: 92-91-921-8206. secretarywssp@yahoo.com. www.wssp.org.pk/news.htm.
- (N) 18-19 March * **CHINA CROP PROTECTION SUMMIT**, “Capturing Opportunities in China’s Crop Protection Industry,” Shanghai, CHINA. Info: J. Cheung, voice: 86-20-3876-7072. emarket2@cnchemicals.com. [Http://tinyurl.com/yda4qy2](http://tinyurl.com/yda4qy2).
- (N) 21-26 March * **PLASMODESMATA 2010– 7th INTERNATIONAL CONFERENCE**,
Sydney, AUSTRALIA. Info: pd2010@bio.usyd.edu.au.
- (N) 22-24 March * **56th ANNUAL SOIL FUNGUS CONFERENCE**, Mt. Vernon, WA, USA.
Info: T. Paulitz, Paulitz@wsu.edu. <http://soilfungus.ars.usda.gov>.
- (N) 20-22 April * **IX SIMPOSIO INTERNACIONAL DE BIOTECNOLOGIA VEGETAL**,
Santa Clara, CUBA. Info: IBP, Univ. Central “Marta Abreu” de las Villas, Carretera Camajuani km 5.5, Santa Clara, Villa Clara, CUBA. info@ibp.co.cu. www.ibp.co.cu.

(N) 25-29 April * **16th INTERNATIONAL REINHARDSBRUNN SYMPOSIUM ON MODERN**

FUNGICIDES AND ANTIFUNGAL COMPOUNDS, Friedrichroda, GERMANY. Info:

I. Sikora, INRES-Phytomedicine, Univ. of Bonn, Nussallee 9, D53115 Bonn, GERMANY.

Fax: 49-228-739627. reinhardtsbrunn@uni-bonn.de. Voice: 49-228-733072.
<http://tinyurl.com/yz58wdo>.

(N) 30 May-04 June * **XV INTERNATIONAL BOTRYTIS SYMPOSIUM**, Cadiz, SPAIN.

Info: J.M.C. Fernandez, botrytiscadiz@viajeseci.es. <http://tinyurl.com/ydwl75m>.

(N) 07-11 June * **12th INTERNATIONAL CONFERENCE ON PLANT PATHOGENIC**

BACTERIA, Saint Denis, Reunion Island, FRANCE. Info: N. Currialet, icppb2010@cirad.fr. www.icppb2010.org.

(N) 10-13 June * **4th ANNUAL ARTHROPOD GENOMICS SYMPOSIUM**, Kansas City, KS,

USA. Info: S.J. Brown, K-State Arthropod Gen. Ctr., Div. of Biol., 116 Ackert Hall, Kansas

State Univ., Manhattan, KS 66506-4190, USA. SJBrown@ksu.edu. Fax: 1-785-532-6653.

Voice: 1-785-532-3482. www.k-state.edu/agc/symp2010.

(N) 13-23 June * **AN INTERNATIONAL SHORT COURSE IN AGROECOLOGICAL, INTEGRATED PEST MANAGEMENT (IPM), AND SUSTAINABLE AGRICULTURE**,

East Lansing, MI, USA. Info: K.M. Maredia, IIA, 416 Plant and Soil Sci., Michigan State

Univ., East Lansing, MI 48824, USA. KMaredia@msu.edu. Fax: 1-517-432-1982.
Voice: 1-517-353-5262. [Http://tinyurl.com/ylegxod](http://tinyurl.com/ylegxod).

(N) 14-18 June * **XVI BIENNIAL WORKSHOP ON THE SMUTS AND BUNTS**, Lethbridge,

ALB, CANADA. Info: D. Gaudet, Denis.Gaudet@agr.gc.ca.

(N) 20-25 June * **13th CONGRESS OF THE MEDITERRANEAN PHYTOPATHOLOGICAL**

UNION, Rome, ITALY. Info: P. Rosset, C.R.A. Centro di Ricerca per la Patologia Vegetale,

Via C.G. Bertero, 22, 00156 Rome, ITALY. mpucongress.2010@entecra.it.
Fax: 39-06-8680-2296. Voice: 39-06-8207-0220. <http://tinyurl.com/y8lyo59>.

(N) 04-09 July * **6th INTERNATIONAL WORKSHOP ON GRAPEVINE DOWNY MILDEW**

AND POWDERY MILDEW, Bordeaux, FRANCE. Info: pdm10@bordeaux.inra.fr.

<http://tinyurl.com/yzs4kl9>.

(N) 25-30 July * **3rd INTERNATIONAL SYMPOSIUM ON TOMATO DISEASES**,
Ischia,

Naples, ITALY. Info: Secretariat, info@3istd.com. Fax: 39-081-8770258.
Voice: 39-081-8770604. www.3istd.com.

(N) 26-28 July * **ROYAL ENTOMOLOGY CONFERENCE AND NETWORK MEETING**,

Swansea, Wales, UK. Info: M. Whitten, M.M.A.Whitten@swansea.ac.uk.
Voice: 44-0-172-789-9387. www.royensoc.co.uk.

(N) 09-11 August * **6th AUSTRALASIAN SOILBORNE DISEASES SYMPOSIUM**,
Twin

Waters, QLD, AUSTRALIA. Info: S. Brown, PO Box 108, Kenmore, QLD 4069,
AUSTRALIA. Voice: 61-7-3201-2808. Sally.Brown@uq.net.au. www.asds6.org.

(N) 11-15 August * **5th INTERNATIONAL RICE BLAST CONFERENCE**, Little
Rock, AR,

USA. Info: Y. Jia, Yulin.Jia@ars.usda.gov. <http://tinyurl.com/y9e7bpm>.

(N) 16-20 August * **12th INTERNATIONAL WORKSHOP ON FIRE BLIGHT**,
Warsaw,

POLAND. Info: P. Sobiczewski, Rsch. Inst. Of Pom., Pomologiczha 18 str., 96-100
Skierniewice, POLAND. Fax: 48-46-834-5375. Piot.Sobiczewski@insad.pl.
Voice: 48-46-834-5367. www.fireblight2010.pl.

(N) 22-27 August * **9th EUROPEAN CONGRESS OF ENTOMOLOGY**, “IPM
Challenges and

Prospects in Annual and Perennial Crops,” Budapest, HUNGARY. Info:
Secretariat c/o
SCOPE Ltd., Kende u. 13-17, H-1111 Budapest, HUNGARY. Fax: 36-1-386-9378.
budapest@ece2010.org. Voice: 36-1-209-6001. www.ece2010.org.

(N) 05-09 September * **INTERNATIONAL SYMPOSIUM ON PLUM POX VIRUS**,
Sofia,

BULGARIA. Info: I. Kamenova, AgroBioInstitute, 8 “Dragan Tzankov” Blvd.,
1164 Sofia,
BULGARIA. ippvs2010@abi.bg. Fax: 359-2-963-5408. www.ippvs2010.com.
Voice: 359-2-963-5407.

(N) 19-21 September * **3rd CONFERENCE ON PRECISION CROP PROTECTION**,
Bonn,

GERMANY. Info: E-C. Oerke, Nussallee 8, 53115 Bonn, GERMANY.
Fax: 49-228-73-2442. Voice: 49-228-73-2450. www.precision-crop-protection.uni-bonn.de/.

(N) 11-14 October * **POTENTIAL INVASIVE PESTS WORKSHOP**, Miami, FL,
USA.

Info: H. Paszko, PO Box 110750, Univ. of Florida, Gainesville, FL 32611-0750,

USA.

HPaszko@ufl.edu. Fax: 1-352-392-9734. Voice: 1-352-392-5930.
<http://tinyurl.com/yet3qjl>.

(N) 01-03 November * **BRITISH CROP PROTECTION COUNCIL CONGRESS 2010**,

London, UK. Info: M. Oakes, Michael.Oakes@ubm.com. Voice: 44-0-20-7921-8278.

(N) 16-18 November * **CANADIAN WEED SCIENCE SOCIETY ANNUAL CONFERENCE**,

Regina, Sask., CANADA. Info: A. Drabek, PO 674, Pinawa, MB R0E 1L0, CANADA.

Fax: 1-204-753-2363. assistant@cwss-scm.ca. Voice: 1-204-753-2915.
www.weedscience.ca/home.

2011

(N) 07-12 June * **11th WORLD CONGRESS ON PARASITIC PLANTS**, Martina Franca, ITALY.

Info: M. Vurro, ISPA-CNR, via Amendola 122/0, 70125 Bari, ITALY.

<http://ipps2011.ba.cnr.it>.

Maurizio.Vurro@ispa.cnr.it. Fax: 39-080-592-9374. Voice: 39-080-592-9331.

(N) 19-23 June * **13th EUROPEAN MEETING OF THE IOBC/WPRS WORKING GROUP**,

“Insect Pathogens and Insect Parasitic Nematodes,” Innsbruck, AUSTRIA.

(N) 25-30 September * **23rd ASIAN-PACIFIC WEED SCIENCE SOCIETY CONFERENCE**,

“Weed Management in a Changing World,” Sebel Cairns, QLD, AUSTRALIA.

Info: S. Ford,

EventCorp, 2A/15 Anthony St., West End, QLD 4101, AUSTRALIA.

www.apwss2011.com.

SFord@eventcorp.com.au. Fax: 61-07-3334-4499. Voice: 61-07-3334-4101.

2012

(N) 04-08 August * **AMERICAN PHYTOPATHOLOGICAL SOCIETY ANNUAL MEETING**,

Providence, RI, USA. Info: APS, 3340 Pilot Knob Rd., St. Paul, MN 55121, USA.

BFord@scisoc.org. Fax: 1-651-454-0755. Voice: 1-651-454-3848. www.apsnet.org.

2013

No (N)ew or [R]evised listings to report for this year.

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