

**SHORT SUBJECTS
AND TIMELY TIPS
FOR PESTICIDE USERS**

Topic	Page No.
BIOLOGICAL CONTROL, IPM, AND EXOTIC PESTS PEST CONTROL	
Douglas-fir Tussock Moth in the Pacific Northwest	1-3
Pink Hibiscus Mealybug Discovered in Imperial County, CA	3
Mechanized Delivery Methods for Field Release of Beneficial Insects	3
PEST CONTROL	
Insecticide Sprays Can Target Feeding Habits of Pests	4
REGULATORY	
EPA Issues Fact Sheet on Spray Drift	4
First Joint Review Pheromone Registered in Canada to Frustrate Forest Foe	4
California Drafting Regulations for Methyl Bromide, Chloropicrin	5
MISCELLANEOUS	
Advanced Pesticide Training Conducted	5
Colorado Scientists Blame Toad Die-Off on A Deadly Fungus	6
Instrument Developed for Tree Counting	6
ON THE INTERNET	6-7
PUBLICATIONS	7-8
UPCOMING EVENTS	8-9
CALL FOR ARTICLES	9

BIOLOGICAL CONTROL, IPM, AND EXOTIC PESTS PEST CONTROL

DOUGLAS –FIR TUSSOCK MOTH IN THE PACIFIC NORTHWEST

Iral Ragenovich
USDA Forest Service, Pacific Northwest Region

The Douglas-fir Tussock Moth Early Warning System (EWS) has indicated an increasing trend of Douglas-fir tussock moth (DFTM) populations in the Pacific Northwest over the last 2 years, indicating a potential outbreak in calendar years 2000, 2001 and possibly beyond. The tussock moth typically defoliates trees in large areas, which may result in significant tree mortality. Localized outbreaks of the Douglas-fir tussock moth have occurred on the Malheur NF in the 1980's, and on the Wallowa-Whitman NF in the early 1990's. These outbreaks were reflected in the fluctuations of the EWS trap catches during those times. The trap catches for 1997 and 1998, however, indicate a more widespread population increase, and it is anticipated that the potential DFTM outbreak will be similar to the outbreak that occurred in the early 1970's, during which almost 700,000 acres were defoliated in 1973. Although the 1999 traps are still in the field,

larval sampling this spring indicates there are a number of areas throughout the Region in suboutbreak levels. And the 1999 aerial survey recorded approximately 20,000 acres of defoliation on the Pine RD of the Wallowa Whitman NF.

Based on the results of the 1998 DFTM EWS trapping, the Region has established a team to conduct an Environmental Impact Statement on the short-term management of the Douglas-fir tussock moth in the Region. The objective is to maintain desired conditions of forest areas of high value that are at risk from defoliation from the Douglas-fir tussock moth, and where preserving the vegetation would maintain desired habitats for both fish and wildlife, as well as preserving campgrounds, scenic viewsheds in recreation areas. Additionally, there is a concern for public health because the hairs on the larvae can cause welts and rashes (called Tossockosis) on some people if they come in contact with the insect.

The Notice of Intent to do an EIS was issued in June, Public Scoping was completed in August, and alternatives have been developed. The EIS team is currently working on the analysis of the effects of the various alternatives. The Draft EIS is scheduled to be released the first of January. The proposed alternative, as stated in the Notice of Intent, is to spray either *Bacillus thuringiensis var. kurstaki* (Bt) and/or TM-Biocontrol (the DFTM virus) on lands on nine national forests within Region 6. Treatment would be primarily through aerial application. The target areas would be ecologically sensitive lands where defoliation would affect habitats for fish and wildlife as well as recreation areas, and other highly valued areas. The actual acres to be sprayed will depend on detection of the insect populations in these areas and could reach 400,000 acres. The proposed action is not designed to control the outbreak across the Region, but rather to protect specific areas within the National Forest system. The proposal does not consider lands bordering the National Forests.

The DFTM Early Warning Trapping System was developed following the 1970's outbreak, specifically to give managers an "early alert" to a potential outbreak and allow them lead-time to plan a management action. In this potential outbreak, the EWS has allowed us to do just that.

The Forest Service is the registrant for TM-Biocontrol, the registered name for the Douglas-fir tussock moth virus. The Forest Service maintained the Goose Lake strain of the Douglas-fir tussock moth and produced this virus for about 10 years in facilities located in Corvallis, OR. There are currently about 400,000 acres doses in stock. Jack Stein with the Forest Health Technology Enterprise Team (FHTET), recently obtained a re-registration for TM-Biocontrol from EPA, and is currently pursuing state registrations with the States of Oregon, Washington, and California. Also, based on input and needs identified by the Defoliator Working Group, Dick Reardon (FHTET) developed a cooperative agreement with Dr. Imre Otvos with the Canadian Forest Service to conduct a number of bioassays on TM-Biocontrol, including shelf-life studies and bioassays on different wild DFTM populations. These have been underway for the past 2 years, and will help us determine appropriate application levels. Dave Thomas, Forest Health Protection, WO, is coordinating the Human Health and Ecological Risk Assessment for TM-Biocontrol that will provide support, and be used in the Environmental Impact Statement (EIS).

For further information on the Douglas-fir Tussock Moth EIS, contact Bill Funk with Natural

Resources in the Pacific Northwest Region at (503) 808-2984.

For additional information regarding this article –

CONTACT: IRAL RAGENOVICH (OR)

(503) 808-2915

**PINK HIBISCUS MEALYBUG DISCOVERED IN
IMPERIAL COUNTY, CA**

(Source: News Release, Sept. 2, 1999, CDFA99-068, California Department of Food and Agriculture)

The California Department of Food and Agriculture (CDFA) announced on Sept. 2, 1999 that pink hibiscus mealybug (*Maconellicoccus hirsutus*) has been discovered in the cities of Calexico and El Centro, Imperial County. This is the first discovery of this insect in the United States. This insect caused substantial damage to ornamentals, fruit trees, and forest trees during the 1990s in the Caribbean. The Forest Service has cooperated with APHIS in successfully introducing mealybug parasites in Puerto Rico and the U.S. Virgin Islands. For a copy of the news release –

CONTACT: PAT SKYLER (CA)

(916) 454-0817

**MECHANIZED DELIVERY METHODS FOR FIELD
RELEASE OF BENEFICIAL INSECTS**
(Susan Mahr, University of Wisconsin)

(Source: *Midwest Biological Control News*, Vol. VI, No. 9, Sept. 1999)

“Summary – There are many challenges in the development of mechanical methods to safely and effectively deliver natural enemies over large areas. Mechanical delivery of pathogens (microbial pesticides) and insect-parasitic nematodes by conventional pesticide delivery equipment has been a reality for decades. Recent developments for the delivery of lacewing eggs, *Trichogramma* in host eggs, predatory mites, and other small arthropods have resulted in the commercialization of both air and ground equipment for the delivery of both liquid and dry formulations of these natural enemies. Although further refinements may be necessary, we are entering a period when large-area releases of natural enemies is becoming a reality.”

For a copy of the article –

CONTACT: PAT SKYLER (CA)

(916) 454-0817

PEST CONTROL

INSECTICIDE SPRAYS CAN TARGET FEEDING HABITS OF PESTS

(Source: *Agnat*, November 18, 1999 and *Science Daily* website)

“COLUMBUS, Ohio – Farmers may one day be able to tailor a spray of insecticide to target the feeding habits of the species that most threaten their crops, according to a study at Ohio State University.” According to Dr. Franklin R. Hall, Department of Entomology, Ohio State University, all species leave a unique footprint on the plants they eat and more pests could be killed if spray delivery parameters were matched to that footprint.

For a copy of this press release –

CONTACT: PAT SKYLER (CA)

(916) 454-0817

REGULATORY

EPA ISSUES FACT SHEET ON SPRAY DRIFT

The Fact Sheet - which can be accessed at:

<<http://www.epa.gov/pesticides>>

provides EPA’s position on spray drift issues and a summary of responsibilities and activities of EPA and others. If you are unable to access this site and would like a copy of the fact sheet –

CONTACT: PAT SKYLER (CA)

(916) 454-0817

FIRST JOINT REVIEW PHEROMONE REGISTERED IN CANADA TO FRUSTRATE FOREST FOE

(Source: *Pest Management News*, Vol. 11, Issue 1-2, 1999)

The Eastern Pine Shoot Borer Phermone is the first pheromone to ever be registered in Canada for use in forestry. Having completed the Joint Review process set up between Canada and the US under the NAFTA Technical Working Group on Pesticides, the pheromone has been granted a time-limited registration.

For a copy of the Proposed Regulatory Decision Document (PRDD99-03) –

CONTACT: PAT SKYLER (CA)

(916) 454-0817

CALIFORNIA DRAFTING REGULATIONS FOR METHYL BROMIDE, CHLOROPICRIN

(Source: *Pesticide & Toxic Chemical News*, Vol. 27(47), Sept. 16, 1999)

According to DPR Director Paul E. Helliker, California EPA's Department of Pesticide Regulation is developing statewide regulations on agricultural use of methyl bromide and chloropicrin. "In addition to those two fumigants, DPR is re-evaluating other high-risk pesticides to determine if new regulations are appropriate, Helliker added. These mandatory rules would replace some of the discretionary controls now set at the county level."

For a copy of the article –

CONTACT: PAT SKYLER (CA)

(916) 454-0817

MISCELLANEOUS

ADVANCED PESTICIDE TRAINING CONDUCTED

The USDA Forest Service, Washington Office, Forest Health Protection, conducted a two-week advanced pesticide training session from November 1-12, 1999. The training was held at the National Conservation Training Center at Shepherdstown, WV and was opened to employees of the Forest Service and its Federal and State cooperators. Employees who attended the training session were those whose functional responsibilities include the planning, conduct, supervision and implementation of projects where chemical and biological pesticides will be applied. A total of 27 participants were trained from the following agencies: USDA Forest Service (10), National Park Service (9), Department of Defense Air Force (2), Virginia Department of Agriculture (3), North Carolina Department of Agriculture (2), and University of Georgia, School of Forest Resources (1).

A second training session will be conducted in Phoenix, AZ, February 28-March 10, 1999 (see Upcoming Events in this newsletter for details). To date, 50 employees are enrolled to participate in this next session. The breakdown of the current enrollees is: USDA Forest Service (34), other Federal agencies (9), Department of Defense (4), and State cooperators (3).

For additional information –

CONTACT: JESUS COTA (DC)

(202) 205-1595

COLORADO SCIENTISTS BLAME TOAD DIE-OFF ON A DEADLY FUNGUS

(Source: *Pesticide & Toxic Chemical News*, Vol. 27(46):4, Sept. 9, 1999)

According to the article, a fungus (chytrid fungus), which has been linked to a decline of amphibians in Australia and Central America “has been confirmed in a population of endangered boreal toads west of Denver, the Colorado Division of Wildlife recently announced.” The decline was suggested to be the result of pesticides but no link has been established because many of the population declines occurred in pristine areas.

For a copy of the article –

CONTACT: PAT SKYLER (CA)

(916) 454-0817

INSTRUMENT DEVELOPED FOR TREE COUNTING

(Source: *Technology & Development News*, USDA Forest Service, July-August 1999)

The San Dimas Technology & Development Center has developed a microprocessor controlled “Digital Tally Meter” specifically for tree counting. It is a handheld unit, which maintains counting statistics and cruise notification for up to nine species or strata of trees. For additional information –

CONTACT: JERRY KEMPF (CA)

(909) 599-1267

ON THE INTERNET

The following EPA site provides current information on: Regulatory Activity – All Types, Active Ingredient Applications, Active Ingredient Approvals, Tolerance Applications, Tolerance Approvals, Use approvals, Special Local Need Approvals, Experimental Use Permit Approvals, Biotech Notifications, and Tolerance Reassessments Completed. The site can be accessed at:

<http://www.epa.gov/pesticides/biopesticides/reg_act_all.htm>

(Source: *Midwest Biological Control News*, Vol. VI, No. 11, 11/99) -

Rutgers University is offering free of charge an educational wall poster which outlines the entomopathogenic nematode life cycle, biology, ecology, and host range, as well as practicalities of crop protection. (Multiple copies will require a fee for postage and handling.) Send orders to: Randy Gaugler, Dept. of Entomology, Blake Hall, 93 Lipman Dr., Rutgers University, New Brunswick, NJ 08901-8524.

(Source: *IPMnet News*, 12/99) -

A full color leaflet, **Using Pesticides Safely** sets forth the necessary basic precautions: “read the label, protect self and others, and properly store and dispose of pesticides.” Copies are available

free of charge from: M.D. Shenk, IPPC, 2040 Cordley Hall, Oregon State University, Corvallis, OR 97331, Fax (541) 737-3080.

PUBLICATIONS

(Editor's note: For a copy of any of the below listed ASAE Papers, contact Pat Skyler (916) 454-0817.)

Brown, R.B. and M. Darvishvand Taher. 1999. Modeling pesticide spray deposition in a plant canopy using a virtual nozzle. ASAE Paper No. 991113. St. Joseph, MI:ASAE.

Derksen, R.C., C.R. Krause, R.D. Fox, and R.D. Brazee. 1999. The impact of application variables on the effectiveness of nursery stock sprays. ASAE Paper No. 991029. St. Joseph, MI:ASAE.

Landers, A.J. 1999. The international (BCPC) spray classification scheme – 14 years of continuous development. ASAE Paper No. 991012. St. Joseph, MI:ASAE.

Potter, W.D., W. Bi, D. Twardus, H. Thistle, M.J. Twery, J. Ghent, and M. Teske. 1999. Intelligent decision support for aerial spray deposition management. Presented at the *American Association for Artificial Intelligence Workshop*, Orlando, FL.

Salyani, M. 1999. Optimization of sprayer output at different volume rates. ASAE Paper No. 991028. St. Joseph, MI:ASAE.

Sidahmed, M.M., K. El-Dirany, and M. Haidar. 1999. A classification system for agricultural sprays. ASAE Paper No. 991025. St. Joseph, MI:ASAE.

Sumner, P.E. and S.A. Sumner. 1999. Comparison of new drift reduction nozzles. ASAE Paper No. 991156. St. Joseph, MI:ASAE.

Teske, M.E., H.W. Thistle and R.E. Mickle. 1999. Modeling ULV spraying. ASAE Paper No. 991032. St. Joseph, MI:ASAE.

Teske, M.E. and D.L. Valcore. 1999. An initial examination of winglet vortical effects. ASAE Paper No. 991031. St. Louis, MI:ASAE.

Trent, A. and H. Thistle. 1999. Aerial Application of Gypsy Moth Pheromone Flakes and Sticker. ASAE Paper No. 991115. St. Joseph, MI:ASAE.

Wolf, R.E., D.R. Gardisser, and W.L. Williams. 1999. Spray droplet analysis of air induction nozzles using WRK DropletScan™ technology. ASAE Paper No. 991026. St. Louis, MI:ASAE.

**Riparian Management in Forests of the
Continental Eastern United States.**

(by Elon S. Verry, James W. Hornbeck, And C. Andrew Dolloff)

This publication summarizes state-of-the-art in management of forested riparian areas. “Fortunately our nation has come to understand the values of riparian areas, and the importance of providing management. This summary of science and management for riparian areas will help insure the health of our nation’s waters and the lands that border them.” – Phil Janik, Deputy Chief, USDA Forest Service.

For additional information –

CONTACT: CRC PRESS LLC	US & Canada	(1-800-272-7737)
	Europe, Middle East and Africa	(44-1462-488900)
	Australia and New Zealand	(61-3-9210-7777)

Rangeland Weeds besides providing practical, science-based information it also profiles in detail 29 of the most serious weed species found in western North America. The publication contains full color photos and distribution maps. For more information, contact University of Arizona Press, 1230 N. Park Ave., Suite 102, Tucson, AZ 85719, phone 520-626-4218.

Invasive Plants: Changing the Landscape of America: Fact Book, Randy G. Westbrooks. The author is the Noxious Weed Coordinator, U.S. Department of Agriculture. The book can be viewed on the web at:

<<http://www.nbii.gov/invasive/>>

Then click on the book title under “What’s New” and then click enter.

American Insects, a Handbook of the insects of America north of Mexico, by R.H. Arnett, Jr. features over 1,200 photos and drawings and complete family keys as well as other useful information.

CONTACT: ST. LUCIE PRESS (FL) (561) 994-0555

UPCOMING EVENTS

18-21 January 2000. **11th USDA Research Forum on Invasive Species** (formerly the USDA Interagency Gypsy Moth Research Forum. It has been renamed to reflect the increased focus on invasive species such as Asian longhorned beetle, hemlock woolly adelgid, and nun moth), Loews Annapolis Hotel, 126 West Street, Annapolis, MD 21401. Contact: Kathy McManus, USDA Forest Service, 51 Mill Pond Road, Hamden, CT, Phone (203) 230-4330, Fax (203) 230-

4315, Email within Forest Service <kmcmanus/ne,ha>, outside Forest Service
<kmcmanus/ne_ha@fs.fed.us>

5-10 February 2000. **Weed Science Society of America Annual Meeting**, Toronto, Canada.
Contact: WSSA, J. Breithaupt, P.O. Box 1897, Lawrence, KS 66044, Phone (913) 843-1235, Fax
(913) 843-1274, E-mail: <jbreith@allenpress.com>

7-11 February 2000. **Western Forest Insect Work Conference**, Portland, OR. Contact: Darrell
Ross, Oregon State University, Corvallis, OR, Phone (541) 737-6566, Email:
<rossd@fsl.orst.edu>

28 February – March 10, 2000. **USDA Forest Service Advanced Pesticide Management
Training (Western session)**, Bureau of Land Management National Training Center, Phoenix,
AZ. Contact: Jesus Cota, Phone (202) 205-1595. Additional information can be found on the
internet at: <<http://www.ntc.blm.gov/coming.html>>

26-29 March 2000. **Entomological Society of America, North Central Branch Meeting**,
Minneapolis, MN. Contact: Ted Radcliffe, 219 Hodson Hall, University of Minnesota, 1980
Folwell Ave., St. Paul, MN 55108, Phone (612) 624-9773.

11-12 July 2000. **California Conference on Biological Control II**, Riverside, CA. For
additional information, Phone (909) 787-7292, or visit their website at:
<<http://www.biocontrol.ucr.edu/CCBCII.html>>

2-5 August 2001. **The Practice of Biological Control: Importation and Management of
Natural Enemies in the New Millennium**, Bozeman, MT. For additional information contact:
Tim Kring (501) 575-3186.

CALL FOR ARTICLES

Please forward to me all articles, meeting announcements, publications, reports, or other items of
interest that you would like included in the next issue of *Short Subjects & Timely Tips for
Pesticide Users*. Please include the name, State, and telephone number of the individual who can
be contacted for further information:

CONTACT: PAT SKYLER (CA)

(916) 454-0817/Fax (916) 454-0820
Within Forest Service (FS): pskyler/r5,rsl
Outside FS: pskyler/r5_rsl@fs.fed.us

The Washington Office, Forest Health Protection, Forest Health Technology Enterprise Team sponsors, compiles, edits, and distributes this
informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are
welcome and may be sent to Pat Skyler, Editor, USDA Forest Service, Remote Sensing Lab, 1920 20th Street, Sacramento, CA 95814, or by E-
mail: (within FS – pskyler/r5,rsl), (outside FS – pskyler/r5_rsl@fs.fed.us). Reference to a commercial product or source in this newsletter does
not constitute endorsement by the USDA Forest Service. Information should be verified by contacting the original source of information as
neither the editor nor the USDA Forest Service guarantees the accuracy of the information provided in this newsletter. Pesticides can be injurious
to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance
with label precautions.
