CAES
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STATION NEWS

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The mission of The Connecticut Agricultural Experiment Station is to develop, advance, and disseminate scientific knowledge, improve agricultural productivity and environmental quality, protect plants, and enhance human health and well-being through research for the benefit of Connecticut residents and the nation. Seeking solutions across a variety of disciplines for the benefit of urban, suburban, and rural communities, Station scientists remain committed to "Putting Science to Work for Society", a motto as relevant today as it was at our founding in 1875.

VOLUME 5, ISSUE 10 | OCTOBER 2015

Departmental News

CAES
The Connecticut Agricultural Experiment Station
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STATION NEWS

The Connecticut Agricultural Experiment Station

DEPARTMENTAL NEWS

ADMINISTRATION

DR. THEODORE ANDREADIS met with State Representative, Melissa Ziobron to discuss algal research on Lake Pocotopaug in East Haddam (September 17); and presented opening remarks and an update on CAES activities at the Federated Garden Clubs of Connecticut President's Day/Board Meeting held at the Station (September 24).

ANALYTICAL CHEMISTRY

DR. JASON WHITE held a teleconference call with colleagues at the University of Florida concerning ongoing field experiments using nanoparticle amendments to suppress crop disease (September 1); along with **DR. CHRISTINA ROBB, DR. WALTER KROL, KITTY PRAPAYOTIN-RIVEROS, MICHAEL CAVADINI, JOSEPH HAWTHORNE, CRAIG MUSANTE, JOHN RANCIATO** and **TERRI ARSENAULT** participated in a quarterly FDA ISO Accreditation MFRPS conference call (September 3); along with **JOSEPH HAWTHORNE AND DR. ARNAB MUKHERJEE** participated in a CT DPH/14th Civil Support Team Medical and Analytical CBRNE (Chemical, Biological, Radiological, Nuclear and Enhanced Conventional Weapons**)** Symposium (September 9); along with **DR. BRIAN EITZER, DR. CHRISTINA ROBB, DR. WALTER KROL, KITTY PRAPAYOTIN-RIVEROS, MICHAEL CAVADINI, JOSEPH HAWTHORNE, CRAIG MUSANTE,** and **TERRI ARSENAULT** participated in the FDA FERN cCAP monthly teleconference call (September 10); attended the monthly Laboratory Preparedness Advisory Committee meeting at the Department of Public Health Laboratory in Rocky Hill CT (September 14); participated in an APHL-sponsored teleconference call for the Water Nanotechnology Paper Workgroup (September 21); along with **DR. ARNAB MUKHERJEE AND DR. SANGHAMITRA MAJUMDAR** participated in a teleconference call with colleagues at North Dakota State University to discuss potential collaborative work on the impact of nanoparticle exposure on plants (September 21); along with **KITTY PRAPAYOTIN-RIVEROS, MICHAEL CAVADINI, DR. ALIA SERVIN,** and **TERRI ARSENAULT** participated in an FDA AFRPS Technical Conference call for new grant awardees (September 23); along with **DR. BRIAN EITZER, DR. CHRISTINA ROBB, DR. WALTER KROL, KITTY PRAPAYOTIN-RIVEROS, MICHAEL CAVADINI, JOSEPH HAWTHORNE, CRAIG MUSANTE,** and **TERRI ARSENAULT** participated in the FDA FERN 2015-2020 grant awardee call (September 24); and along with **DR. SANGHAMITRA MAJUMDAR, DR. ROBERTO DE LA TORRE-ROCHE, DR. ALIA SERVIN** and **DR. LUCA PAGANO** attended the 12th Annual International Phytotechnologies Conference in Manhattan KS (September 27-30). Dr. White chaired the session of Plant-Nanoparticle interactions, chaired the Society Business Meeting, and chaired an Editorial Board meeting of the *International Journal of Phytoremediation*. **DR. SANGHAMITRA MAJUMDAR, DR. ROBERTO DE LA TORRE-ROCHE, DR. ALIA SERVIN** and **DR. LUCA PAGANO** all attended the meeting with "PhytoScholar" travel awards from the National Institute of Environmental Health Sciences (NIEHS).

DR. BRIAN EITZER along with **TERRI ARSENAULT** and **DR. SANGHAMITRA MAJUMDAR** attended a workshop on the use of Tracefinder Software at the Thermo Instruments facility in Cambridge MA (September 14), and participated in the NACRW organizing committee phone call (September 17).

DR. CHRISTINA ROBB attended the FBI Academic Biosecurity Workshop at the Yale West Campus in Orange, CT on September 16th; along with **DR THEODORE ANDREADIS, DR. BLAIRE STEVEN, DR. JOSEPH PIGNATELLO, GREGORY BUGEE** and **MICHAEL LAST** attended a meeting with State Representative Melissa Ziobron to discuss a potential research project on Lake Pocotopaug (September 17); and participated in a board meeting for the Eastern Analytical Symposium in Somerset, NJ (September 18).

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STATION NEWS

The Connecticut Agricultural Experiment Station

ENTOMOLOGY

DR. KIRBY STAFFORD III participated in conference call tick IPM working group (September 9); visited by Steve Young, Director of Northeastern IPM Center, to discuss the partnership grant award and learn about the institution and region (September 16) with **DR. SCOTT WILLIAMS** and **MEGAN LINSKE**; and met with Mason Kauffman and Steve Zatechka from U.S. Biologic, Inc. to discuss the rodent vaccine trials (September 22).

DR. DOUGLAS DINGMAN met with Mark Cooper (Director of Health, Westport Weston Health District) to confirm start and logistics of waterway sampling/DNA extraction in October for the Microbial Source Tracking Project (September 2).

MS. KATHERINE DUGAS attended the Connecticut Tree Protection Association (CTPA) EAB tour in Durham with **DR. CLAIRE RUTLEDGE** (September 3); with **MR. STEPHEN SANDREY** and **MR. ZACKARY BROWN**, set up and staffed Forest Pest display booth at the Woodstock Fair (1,266 attendeee) (September 3-7); with **MR. MARK CREIGHTON** and **MR. ZACARY BROWN**, set up and staffed joint Forest Pest/Honey Bee display booth at the Hebron Harvest Fair (361 attendees) (September 9-13); attended the Vernon Greenways Beetlemania Event with **MS. ROSE HISKES** (September 12); station staff and Vernon Greenways members identified and surveyed 401 ALB/EAB host trees along the Rail Trail, and distributed ALB/EAB identification cards to people using the trail (September 12); staffed a joint Forest Pest/ Honey Bee booth in the CT building at the Big E with **MR. MARK CREIGHTON**, **MS. ROSE HISKES**, and **MR. ZACARY BROWN** (1,321 attendees) (September 22); with **MR. MARK CREIGHTON** staffed the USDA's Forest Pest booth at the Durham Fair (September 24); staffed a Forest Pest booth at the Celebrating Agriculture even in Woodstock where (80 children made buttons with the CAES button machine) (September 26); and with **DR. GALE RIDGE**, hosted (15 first-graders and 2 teaches) from the Foote School in the Insect Information Office where the students learned about insect identification and forest pests in Connecticut (September 30).

DR. GALE RIDGE visited a crime scene in Bloomfield as part of a murder investigation researching fly species and environmental conditions of the area (September 2); and spoke about bed bugs to the Village for Families and Children in West Hartford (60 attendees) (September 3); and to staff at the Veterans Affairs Hospital in West Haven (40 attendees) (September 17).

DR. CLAIRE RUTLEDGE organized and presented at the 4th annual 'Emerald Ash Borer in Connecticut' workshop for the CTPA in Durham, CT (87 attendees) (September 3) and taught 'Insects that attack Trees' for the CTPA's Arboriculture 101. Wallingford, CT (35 attendees) (September 30).

DR. VICTORIA SMITH visited with Steve Young, Director of the Northeastern IPM Center, in the W. B. Young Building on the UConn Campus (10 attendees) (September 16) and participated in a meeting of the Yale University Biosafety Committee in New Haven (20 attendees) (September 17).

DR. KIMBERLY STONER was interviewed about bees and pollination by Bob Woods of Coastal Connecticut Magazine (September 3); gave a talk, "The Buzz about Bees" at the Guilford Public Library (60 attendees) (September 29).

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STATION NEWS

The Connecticut Agricultural Experiment Station

ENVIRONMENTAL SCIENCES

DR. PHILIP ARMSTRONG gave a brief overview of his research program to students at the Yale School of Public Health (September 3); and was interviewed about West Nile virus activity by the Record Journal (September 2); and the CT Radio Network (September 8).

MR. GREGORY BUGBEE participated in a meeting of local and state officials, including Senator Ted Kennedy Jr. , Representative Shaun Scanlon and Guilford First Selectman Joe Mazza, in Guilford to discuss invasive aquatic plant problems in Lake Quonnipaug (September 11); spoke on the CAES invasive aquatic plant survey of Coventry Lake at a Town meeting in Coventry (about 80 attendees) (September 15); and was interviewed by Virginia Fisher of FOXCT on invasive aquatic plant problems in CT (September 29).

DR. DOUGLAS BRACKNEY was appointed Clinical Assistant Professor in the Department of Epidemiology of Microbial Diseases, Yale School of Public Health (July 1) and introduced his scientific research interests to the incoming class of Master's students within the Department of Epidemiology of Microbial Diseases, Yale School of Public Health (50 attendees) (September 3).

DR. GOUDARZ MOLAEI introduced his research and service activities at the CAES to the students and faculty at the Department of Epidemiology of Microbial Diseases, Yale school of Public Health (about 50 attendees) (September 3); gave an invited talk on "Olfaction" to the faculty and graduate students at the Ferdowsi University of Mashhad, Iran (about 25 attendees) (September 13); gave an invited talk on "Biogenic Amines in Insects and the Future of Insect Pest/ Vector Control", to the joint meeting of the Tehran University of Medical Sciences, and Entomological Society of Iran (about 35 attendees) (September 15); and visited universities and research institutions to discuss research collaborations and the possibility of hosting faculty in their sabbatical and PhD students as visiting scholars at CAES (September 12-15).

MR. JOHN SHEPARD participated in a conference call meeting of the Board of Directors for Northeastern Mosquito Control Association (11 attendees) (September 25).

MR. MICHAEL C. THOMAS demonstrated insect collecting and preservation techniques to the Yale University Terrestrial Arthropod and University of Connecticut Entomology classes at the Yale Forestry Camp in Norfolk (12 student attendees) (September 11-12).

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STATION NEWS

The Connecticut Agricultural Experiment Station

FORESTRY AND HORTICULTURE

DR. JEFFREY WARD participated in a New England Society of American Foresters planning meeting (September 8); invited speaker on "Recognizing Herbivory Problems and What to Do" at the University of New Hampshire Deer Management workshop in Hillsborough, NH (43 attendees) (September 9); spoke on "Silviculture for the Birds: Managing forests for a diversity species" at Coverts Project seminar in Norfolk (24 attendees) (September 19); was interviewed about fall foliage outlook by Ted Koppy, News12 Connecticut (September 22); participated in an Connecticut Invasive Plant Council field tour investigating possible running bamboo escapes (4 attendees) (September 24); and attended an executive committee meeting of the Connecticut Urban Forest Council, New Haven (September 25).

DR. ADRIANA ARANGO VELEZ administered practical and oral examination to arborist candidates for the Connecticut Tree Protection Examining Board (September 9); met with Kevin Broderick and Andrew J. Bosse at Pequot Fish and Game Preserve (Newtown) to examine Norway Spruce attacked by southern pine beetle (September 21).

DR. ABIGAIL MAYNARD judged fruits and vegetables at the North Haven Fair (September 10); and spoke about the New Crops Program to two teachers from Hamden Hall Country Day School at Lockwood Farm (September 30).

DR. SCOTT WILLIAMS with **MR. MICHAEL SHORT** and **MS. MEGAN LINSKE**, conducted a small mammal trapping demonstration and deer exclosure explanation to students in the Wildlife Management Techniques class in the Department of Natural Resources and the Environment at the University of Connecticut (20 students, 1 teacher) (September 14).

MR. JOSEPH P. BARSKY participated in the quarterly meeting of the New England Society of American Foresters Executive Committee in East Concord, NH (September 9); and with **MS. AMANDA MASSA**, staffed a CAES booth featuring tree physiological research projects at the Brooksvale Fall Festival in Hamden (50+ visits) (September 26).

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STATION NEWS

The Connecticut Agricultural Experiment Station

PLANT PATHOLOGY AND ECOLOGY

DR. SANDRA ANAGNOSTAKIS attended the annual meeting of the Chestnut Federal Regional Project in Hungry Mother State Park in Marion, VA, and reported on Station chestnut research (September 10-13); and gave a talk on "Chestnuts for Connecticut" to the Hartland Land Trust in East Hartland, CT (25 adults) (September 28).

DR. WADE ELMER presented the invited lecture "Using Mineral Nutrition to Suppress Plant Disease"to the faculty at the Agricultural University of Iceland in Reykjavik, Iceland (22 adults) (September 22).

DR. YONGHAO LI gave a talk entitled 'Foliar diseases of spruce and their control' at the Connecticut Christmas Tree Grower Association annual meeting in Plainfield, CT (40 adults) (September 19); was interviewed by Matt Scott at Fox CT on Leaf-peeping in Connecticut: What can you expect from this year's fall foliage? (September 15); was interviewed by Sam Kantrow at News 8 (WTNH) about impact of drought conditions on fall foliage (September 17); and attended the System for True, Accurate, and Reliable Diagnostics (STAR-D) Phase 2 Workshop in Salem, OR (September 21-24).

DR. LINDSAY TRIPLETT gave the first lecture of the 2015-2016 Sigma Xi lecture series at Quinnipiac University titled "American Heirloom: the rice that helped a country grow", (8 adults) (September 15); along with and **DR. TEJA SHIDORE** visited Dr. Gerry Berkowitz's laboratory at the Department of Plant Science and Landscape Architecture at UConn and learned about techniques for measuring early signaling events in plant defense and presented a departmental seminar, "Self-killing turned outward: novel antibiotic functions for a family of type III secreted proteins", for 16 attendees (September 17); and participated via Skype in the Master's defense examination of Mr. Valentin Trouiller, a Master's candidate from Blaise Pascal University in Clermont-Ferrand, France (September 28). Mr. Trouiller conducted a six-month internship at CAES in Dr. Triplett laboratory who served as his supervisor. He was granted a Master's degree in Genomics, Ecophysiology, and Plant Production. The PPE department celebrated with a crepes lunch from Crepes Choupette in New Haven (September 30).

DR. NEIL SCHULTES visited Dr. Timothy McNellis in the Department of Plant Pathology and Environmental Microbiology at Penn State University and discussed potential collaborations involving the genetics of metabolism in *Erwinia amylovora* (August 18); visited Dr. George Mourad at the Biology Department at University of Indiana-Purdue Ft. Wayne, IN and worked with graduate students to oversee and plan their projects (September 7-12); and participated in Geeta Buda's Master's Defense for her thesis "Genetic and Biochemical Characterization Reveals the Substrate Specificity of the Three-Member Azaguanine-Like Transporter Family of *Zea mays*" (September 13).

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STATION NEWS

The Connecticut Agricultural Experiment Station

DEPARTMENTAL RESEARCH UPDATES SEPTEMBER 2015

De la Torre-Roche, R.; **Servin, A.**; **Hawthorne, J.**; Xing, B.; Newman, L.A.; Ma, X.; Chen, G.; White, J.C. 2015. T errestrial trophic transfer of bulk and nanoparticle La_2O_3 does not depend on particle size. *Environ. Sci. Technol.* DOI: 10.1021/acs.est.5b02583.

Abstract: The bioaccumulation and trophic transfer of bulk and nanoparticle (NP) La2O3 from soil through a terrestrial food chain was determined. To investigate the impact of growth conditions, lettuce (*Lactuca sativa*) was grown in 350 or 1200 g of bulk/NP amended soil. Leaf tissues were fed to crickets (*Acheta domesticus*) or darkling beetles (*Tenebrionoidea*); select crickets were fed to mantises. In the small pot (350 g), La2O3 exposure reduced plant biomass by 23-30% and La tissue content did not differ with particle size. In the large pot (1200 g), biomass was unaffected by exposure and La content in the tissues were significantly greater with bulk particle treatment. Darkling beetles exposed to bulk and NP La2O3-contaminated lettuce contained La at 0.18 and 0.08 mg/kg; respectively (significantly different, $P<0.05$). Crickets fed bulk or NP La2O3-exposed lettuce contained 0.53 and 0.33 mg/kg, respectively (significantly different, $P<0.05$) with 48 h depuration. After 7 d depuration, La content did not differ with particle size, indicating that 48 h may be insufficient to void the digestive system. Mantises that consumed crickets from bulk and NP-exposed treatments contained La at 0.05-0.060 mg/kg (statistically equivalent). These results demonstrate that although La does trophically transfer, biomagnification does not occur and NP levels are equivalent or less than the bulk metal.

Van Treuren, W., Ponnusamy, L., Brinkerhoff, R. J., Gonzalez, A., Parobek C. M., Juliano, J. J. **Andreadis, T. G.**, Falco, R. C., Zeigler, L. B., Hathaway, N., Keeler, C., Emch, M., Bailey, J. A., Roe, R. M., Apperson, C. S., Knight R. and Meshnick S. R. 2015. Variation in the microbiota of *Ixodes* ticks with geography, species and sex. *Appl. Environ. Microbiol.* 81:6200-6209. doi:10.1128/AEM.01562-15

Abstract: *Ixodes scapularis* is the principal vector of Lyme disease on the East Coast and in the upper Midwest regions of the United States, yet the tick is also present in the Southeast, where Lyme disease is absent or rare. A closely related species, *I. affinis*, also carries the pathogen in the South but does not seem to transmit it to humans. In order to better understand the geographic diversity of the tick, we analyzed the microbiota of 104 adult *I. scapularis* and 13 adult *I. affinis* ticks captured in 19 locations in South Carolina, North Carolina, Virginia, Connecticut, and New York. Initially, ticks from 4 sites were analyzed by 454 pyrosequencing. Subsequently, ticks from these sites plus 15 others were analyzed by sequencing with an Illumina MiSeq machine. By both analyses, the microbiomes of female ticks were significantly less diverse than those of male ticks. The dissimilarity between tick micro-biomes increased with distance between sites, and the state in which a tick was collected could be inferred from its microbiota. The genus *Rickettsia* was prominent in all locations. *Borrelia* was also present in most locations and was present at especially high levels in one site in western Virginia. In contrast, members of the family *Enterobacteriaceae* were very common in North Carolina *I. scapularis* ticks but uncommon in *I. scapularis* ticks from other sites and in North Carolina *I. affinis* ticks. These data suggest substantial variations in the *Ixodes* microbiota in association with geography, species, and sex.

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STATION NEWS

The Connecticut Agricultural Experiment Station

VALLEY LABORATORY

DR. JATINDER AULAKH visited with Pete Picone (September 2) Wildlife Biologist with DEEP, CT, about potential collaborative research projects; mapped "Kudzu" infested sites in CT with Nicole Gabelman from UCONN (September 15); and attended a meeting (September 16) with Dr. Steve Young, Director of the Northeastern IPM center, at UCONN and apprised other IPM co-ordinators of his research interests.

DR. RICHARD COWLES presented "Management options for EAB," at the CT Tree Protective Association EAB Workshop, Durham, (75 participants) (September 3); and spoke about "Christmas tree insect update" at the CT Christmas Tree Growers' meeting, Plainfield, (40 attendees) (September 19).

DR. JAMES LAMONDIA examined candidates for the Connecticut arborist license and participated in the quarterly meeting of the Connecticut Tree Protection Examining Board in New Haven (September 9); was interviewed about the effects of drought on crops in Connecticut by Mike Krafcik of FoxCT News (September 9); and spoke about the latest research on growing hops and malting barley in Connecticut as part of a program sponsored by the Connecticut Farm Bureau in Watertown, CT (15 people) (September 23).

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STATION NEWS

The Connecticut Agricultural Experiment Station

Williams, S. C. and M. A. Gregonis. 2015. Survival and movement of rehabilitated white-tailed deer fawns in Connecticut. *Wildlife Society Bulletin* 39:664-669.

Abstract. Connecticut (USA) has a volunteer-based, white-tailed deer (*Odocoileus virginianus*) fawn rehabilitation program. In 2010 and 2011, 29 apparently orphaned or injured fawns were raised and released at about 3 months of age by licensed rehabilitators at no cost to taxpayers. Our objectives were to compare survival and movements of fawns subjected to 2 different release techniques. Thirteen fawns were soft-released with feed and water provided *ad libitum*, and the remaining 16 were hard-released into a 2,250 -ha block of state forest. Fawns were monitored daily using expandable radiocollars for 30 days and tri- or biweekly thereafter. When mortality sensors activated, signs of trauma, struggle, hair, caching behavior, and scats were inspected to determine cause of death, and necropsies were performed in a laboratory for fawns evidently succumbing to sickness or starvation. Hard-release fawns experienced 100% mortality within 35 days. Sources of mortality included coyote (*Canis latrans*), bobcat (*Lynx rufus*), vehicles, and pneumonia. Soft-release fawns experienced 69% mortality within 86 days from coyote, vehicles, illegal shooting, and legal archery harvest. The Kaplan–Meier 100-day survival rate for all fawns was 0.138 (SE = 0.064) for both years combined; 86% of fawns were dead within 86 days of release. All fawns exhibited high fidelity to release sites. Some soft-release fawns survived longer by staying proximate to the pen, but in addition to unacceptably high mortality rates, all fawns, regardless of release technique, lacked the behavioral attributes needed by truly wild white-tailed deer to survive to adulthood.

Molaei, G., Armstrong, **P. M.,** Abadam, C. F., Akaratovic, K. I., Kiser, J. P., **Andreadis, T. G.** 2015. Vector-host interactions of *Culiseta melanura* in a focus of eastern equine encephalitis virus activity in southeastern Virginia" *PLoS One*. 2015; 10(9): e0136743.

Abstract. Eastern equine encephalitis virus (EEEV) causes a highly pathogenic mosquito -borne zoonosis that is responsible for sporadic outbreaks of severe illness in humans and equines in the eastern USA. *Culiseta* (*Cs.*) *melanura* is the primary vector of EEEV in most geographic regions but its feeding patterns on specific avian and mammalian hosts are largely unknown in the mid-Atlantic region. The objectives of our study were to: 1) identify avian hosts of *Cs. melanura* and evaluate their potential role in enzootic amplification of EEEV, 2) assess spatial and temporal patterns of virus activity during a season of intense virus transmission, and 3) investigate the potential role of *Cs. melanura* in epidemic/epizootic transmission of EEEV to humans and equines. Accordingly, we collected mosquitoes at 55 sites in Suffolk, Virginia in 2013, and identified the source of blood meals in engorged mosquitoes by nucleotide sequencing PCR products of the mitochondrial cytochrome b gene. We also examined field-collected mosquitoes for evidence of infection with EEEV using Vector Test, cell culture, and PCR. Analysis of 188 engorged *Cs. melanura* sampled from April through October 2013 indicated that 95.2%, 4.3%, and 0.5% obtained blood meals from avian, mammalian, and reptilian hosts, respectively. American Robin was the most frequently identified host for *Cs. melanura* (42.6% of blood meals) followed by Northern Cardinal (16.0%), European Starling (11.2%), Carolina Wren (4.3%), and Common Grackle (4.3%). EEEV was detected in 106 mosquito pools of *Cs. melanura*, and the number of virus positive pools peaked in late July with 22 positive pools and a Maximum Likelihood Estimation (MLE) infection rate of 4.46 per 1,000 mosquitoes. Our findings highlight the importance of *Cs. melanura* as a regional EEEV vector based on frequent feeding on virus-competent bird species. A small proportion of blood meals acquired from mammalian hosts suggests the possibility that this species may occasionally contribute to epidemic/epizootic transmission of EEEV.

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STATION NEWS

The Connecticut Agricultural Experiment Station

Wu, Fang, Yuan Yuan, Shuang-Hui He, Asanka R. Bandara, Kevin D. Hyde, Vera F. Malysheva, **De-Wei Li**, Yu-Cheng Dai 2015. Global diversity and taxonomy of the *Auricularia auricula-judae* complex (Auriculariales, Basidiomycota). *Mycological Progress* 14: 95. DOI 10.1007/s11557-015-1113-4.

Abstract: *Auricularia auricula-judae* was previously considered a single species, but was recently demonstrated to be a species complex. The economically important, cultivated *Auricularia* mushrooms are included in the complex. Two species are cultivated, but have been treated as a single species: *A. auricula-judae*. Fifty samples of so-called *A. auricula-judae* from Asia, Europe, and North America were analyzed using morphology and molecular phylogeny. Phylogenetic analyses were carried out by ITS sequence and combined ITS, LSU, and rpb2 sequence, and 16 ITS, 16 LSU, and 16 rpb2 sequences were newly generated. Seven species in the complex were delineated, including three species new to science: *Auricularia angiospermarum*, *A. minutissima,* and *A. tibetica*. Illustrated description of the three new species and discussions in relation to other species are introduced in this paper. *Auricularia heimuer* is the most extensively cultivated species of *Auricularia. Auricularia villosula* is also cultivated, but has been named by the mushroom production industry *A. heimuer*. The size of basidiospores and presence or absence of medulla are important characters for differentiating the species within the complex, and ITS sequence data is a sensitive marker to discriminate species. A synoptic table of comparison of species in the complex is provided including the most important characters of the seven species.

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STATION NEWS

The Connecticut Agricultural Experiment Station

JOURNAL ARTICLES APPROVED SEPTEMBER 2015

Cornillot, Emmanuel, **Scott Williams** et al. (21 authors). A targeted immunomics approach identifies diagnostic antigens in the human pathogen *Babesia microti*. *Journal of Clinical Investigation*

Douglas, Sharon. Disease management guide for Connecticut arborists 2015-2016. *Connecticut Tree Protective Association*

Eevers, N., **J. Hawthorne, J. C. White,** J. Vangronsveld, and N. Weyens. Exposure of *Cucurbita pepo* to DDE-contamination alters the endophytic community: a cultivation dependent vs. cultivation independent approach. *Environmental Pollution*

Gent, M. P. N., W. H. Elmer, K. Macherla, and R. J. McAvoy. Effects of salinity and irrigation management on poinsettia. *HortScience*

Hamilton, Jill, Ashely Hart, Daniel Runcie, Walid El Kayal, **Adriana Arango-Velez,** and Janice Cooke. Teasing apart the influence of photoperiod and temperature on growth cessation and dormancy in white spruce (*Picea glauca*). *Functional Ecology*

Holden, P., **J. C. White** et al. (40 authors). Implementing environmentally-relevant exposures for improved interpretation of laboratory toxicology studies of manufactured and engineered nanomaterials (M&ENMs). *Environmental Science and Technology*

LaMondia, J. A. and P. Timper. Interactions of microfungi and plant parasitic nematodes. Chapter in *Biology of Microfungi*, Springer

Lefkowitz, Rafael and **Gale E. Ridge.** Telemedicine diagnosis of a tropical dermatosis in a seafarer. *American Journal of Industrial Medicine*

Misencik, M. J., N. D. Grubaugh, **T. G. Andreadis,** G. D. Ebel, and **P. M. Armstrong.** A new flavivirus infecting *Culiseta melanura* mosquitoes. *Vector-Borne and Zoonotic Diseases*

Molaei, Goudarz, Philip Armstrong, Alan Graham, Laura Kramer, and **Theodore Andreadis.** Insights into recent emergence and expansion of eastern equine encephalitis virus in a new focus in the Northern New England USA. *Parasites & Vectors*

Mosa, K. A., K. Kumar, S. Chhikara, **C. Musante, J. C. White,** and O. P. Dhanker. Enhanced boron tolerance in plants mediated by bidirectional transport through plasma membrane intrinsic proteins. *Scientific Reports*

Mukherjee, A., S. Majumdar, A. Servin, L. Pagano, O. Parkash, and **J. White.** Carbon nanomaterials in agriculture: a critical review. *Frontiers in Plant Science*

Rutledge, Claire. Emerald ash borer in Connecticut. *Connecticut Botanical Society Newsletter*

Triplett, Lindsay R., Stephen P. Cohen, Christopher Heffelfinger, Clarice L. Schmidt, Cheick Tekete, Valerie Verdier, Adam J. Bogdanove, and Jan E. Leach. A resistance locus in the American heirloom rice variety Carolina Gold Select is triggered by diverse TAL effectors and is effective against African strains of *Xanthomonas oryzae* pv. *oryzicola*. *The Plant Journal*

Ward, Jeffrey S., Thomas E. Worthley, Thomas J. Degnan, and **Joseph P. Barsky.** STORMWISE: integrating arboriculture and silviculture to create storm resilient roadside forests. *USDA FS Gen. Tech. Rep. NRS-P-xxx, 20th Central Hardwood Forest Conference*

Zhang, Yanyan, **Joseph J. Pignatello,** Shu Tao, and Baoshan Xing. Bioaccessibility of PAHs in fuel soot assessed by an in vitro digestive model with absorptive sink: effect of food ingestion. *Environmental Science and Technology*

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STATION NEWS

The Connecticut Agricultural Experiment Station

GRANTS RECEIVED SEPTEMBER 2015

DR. QUAN ZENG received approval on his proposal "Develop Novel Antisense Antimicrobials for the Control of Fire Blight" from the USDA-NIFA-Exploratory Research ($100,000). In this project, Dr. Zeng is going to use the notion of RNA silencing and develop novel antisense molecules to silence the expression of essential genes in fire blight pathogen *Erwinia amylovora*, thus to control the disease infection. Dr. Zeng (PI) will collaborate with Dr. Ching-Hong Yang (co-PI) from Univ. Wisconsin-Milwaukee on this project.

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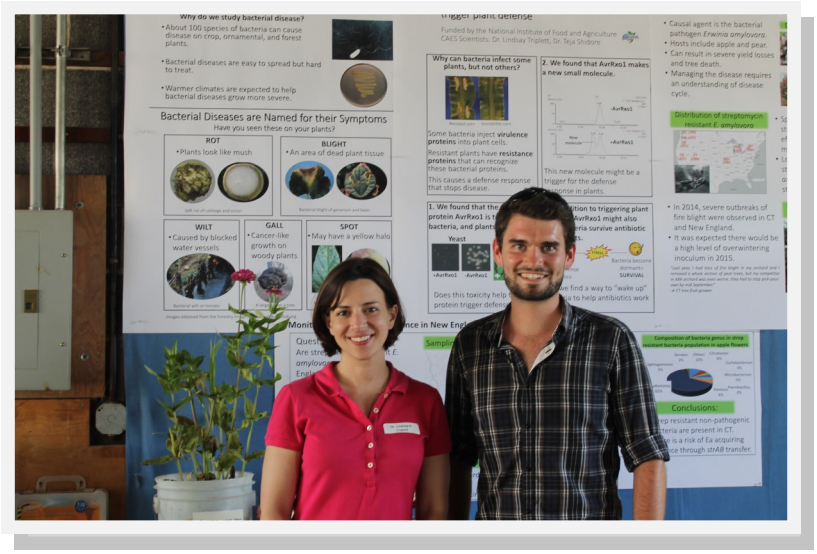
STATION NEWS

The Connecticut Agricultural Experiment Station

ARTICLES OF INTEREST SEPTEMBER 2015

Dr. Jason C. White (front center) and Dr. Heather Henry (NIEHS, far right) along with the 2015 NIEHS PhytoScholars



Dr. Lindsay Triplett and Mr. Valetin Trouiller at Plant Science Day 2015

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