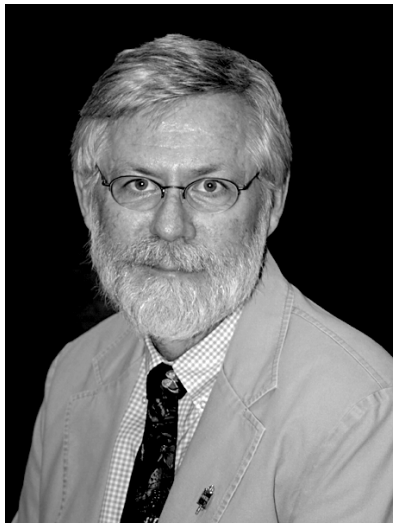
NORTH CENTRAL BRANCH
Entomological Society of America

59th Annual Meeting
March 28-31, 2004



President Rob Wiedenmann

The Fairmont Kansas City
At the Plaza
401 Ward Parkway
Kansas City, MO 64112

Contents

Registration

All participants must register for the meeting. Registration badges are required for admission to all sessions, mixers, and other functions. The meeting registration desk is located in the ballroom level outside the Salon meeting rooms. The registration desk will be open for check-in for those that pre-registered and for on-site registration at the following times:

Sunday	noon – 6:00 p.m.
Monday	7:30 a.m. – 5:00 p.m.
Tuesday	7:30 a.m. – 5:00 p.m.

Messages, Program Changes, Lost & Found

A message board and tacks for posting announcements will be available near the registration desk. Notices concerning program changes should be submitted to the meeting registration desk. Lost and found items may be turned in and retrieved at the registration desk.

Spouses and Guests

No formal spouse/guest program is planned. Information about the Kansas City and the Country Club Plaza area is available at the registration desk.

Employment Opportunity Center

Employers are invited to post available positions, and job seekers are encouraged to post their vitae, in folders provided in the employment room.

Audio/Visual Equipment

An audio/visual preview room is available for speakers to preview presentations. CDs with session papers or symposia are available for viewing on a computer in the A/V room. All meeting rooms will be equipped with an

LCD projector and laptop projector. PowerPoint presentations uploaded on the NCB web site will be downloaded and available for preview. Speakers who did not upload presentations prior to March 19 MUST provide to the program staff, in the A/V preview room, his/her PowerPoint presentation at least 24 hours before the beginning of the session. The A/V Room will be available the same hours as the registration desk is open (see above). PowerPoint presentations brought to the meeting must be on Zip disks or CD. We will not directly connect laptops for file transfer, because of incompatibility. Timers and pointers are available for moderators at the A/V Room.

Guidelines for Speakers and Moderators

Speakers and moderators will follow standard practices for ESA meetings. Moderators are responsible for maintaining the printed schedule, by not starting any presentation prior to the scheduled time, and by not allowing a speaker to exceed the allotted time.

Poster Presentations

Posters will be displayed in Salon III. Posters for all student competition sections are to be set up Sunday, March 28, between 4:00 p.m. and 8:00 p.m. These posters must be removed Monday between 6:00 and 8:00 p.m. Posters to be displayed Tuesday (remaining sections posters) are to be set up Monday between 8:00 and 10:00 p.m. These posters are to be removed before 12:00 p.m. Wednesday. Authors are requested to be present at their poster(s) to answer questions between 3:00 – 4:00 p.m. Monday, and 4:00 – 5:00 p.m. Tuesday. Poster authors must bring their own pushpins to attach posters to boards made of foamcore.

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NCB-ESA Website (http://esa.ent.iastate.edu)
John VanDyk, Webmaster
Ian MacRae John Lloyd Dave Ragsdale

Special Events

Awards Luncheon
Tuesday 12:00 – 1:15 p.m.
Salon IA & IB

The Awards Luncheon will consist of presentation of major awards (e.g., C. V. Riley, J. H. Comstock, ESA Graduate Student Scholarship), BCE Awards, as well as North Central Branch winners of National ESA Awards.

ESA NCB Mixer
Tuesday 7:00 – 9:00 p.m.
Salon IA & IB

A mixer open to all ESA meeting participants is scheduled for Tuesday evening from 7:00 to 9:00 p.m. Everyone is encouraged to attend. Plenty of excellent

food will be available so you will not need to worry about a meal that night. This is an opportunity for sharing conversation and ideas with fellow NCB members. The mixer will be preceded by the Linnaean Games Playoff between the winning student team and the old Masters in Salon II. Immediately following the Playoff will be the presentation of the winners of the Linnaean Games and Student Paper and Poster Awards.

2004 NORTH CENTRAL BRANCH AWARD RECIPIENTS

2004 North Central Branch C. V. Riley Award

Shripat Kamble
University of Nebraska-Lincoln

Dr. Shripat Kamble is the 2004 winner of the North Central Branch's C. V. Riley Award. He is being recognized for his numerous accomplishments in research and extension, together with his many years of leadership and service to the ESA and the North Central Branch, and his professional stature among his colleagues. His research on the fate and efficacy of termiticides in various soils has been instrumental in helping pest control operators and homeowners understand the chronology of the insecticide breakdown and mobility and to estimate the duration of effective termite treatments.

Dr. Kamble has also made many significant contributions to the IR-4 program, as well as other applied entomological research projects. His training of graduate students and postdoctoral researchers has also helped extend the impact of his applied entomological research. His activities in the BCE Program have included serving as Director and receiving two awards. He has also been honored with several other awards and has been very actively involved in the International Congress of Entomology for the last three meetings. He has just been elected to his second term on the ESA governing board.

2004 ESA North Central Branch Graduate Student Scholarship Award

Patricia L. Anderson
Iowa State University

Patricia L. Anderson is the 2004 winner of the ESA North Central Branch Graduate Student Scholarship Award. Patricia is a Ph.D. candidate at Iowa State University where she expects to complete her degree this fall. Her research is aimed at characterizing the effects of *Bt*-corn anthers on monarch butterflies. Patti's research showed that exposure to high levels of *Bt* anthers in the laboratory had adverse effects on monarch larvae; however, further studies on dose response and anther distribution showed that toxicologically relevant pollen densities are uncommon on milkweed leaves in cornfields. When larvae were exposed to anthers in field studies, no adverse effects were detected. Patti conducted a weight-of-evidence analysis of risk for anthers and concluded that *Bt* anthers alone are not likely to pose a significant risk to monarch butterflies.

Patti has given over 25 presentations at professional meetings, co-authored a book chapter, published two refereed journal articles and two extension publications, and has written three successful grant proposals. Patti has served on the ESA National Student Affairs committee and the ESA Rules and Meeting Review committees. As a member of the Student Affairs Committee, Patti chaired a subcommittee that was responsible for the development of the new *ESA Student Activity Award*. She has been a member of five Linnaean Game teams. Patti is also very active at Iowa State serving on ten

committees, president of the entomology graduate student organization, and volunteers at the ISU insect zoo and the Chistina Reiman Butterfly Garden. Patti has received several awards: the Herbert Osborn Award for professional performance, the Graduate Student Senate Leadership Award, and the Mark and Mary Andrews Scholarship for outstanding university service.

2004 ESA North Central Branch
J. H. Comstock Award

Michael E. Rogers
University of Kentucky

The 2004 North Central Branch ESA winner of the J.H. Comstock Graduate Student Award is Michael E. Rogers. Dr. Rogers received his Ph.D. in Entomology in December of 2003 from the University of Kentucky. Michael's dissertation research concerned the ecology, behavior, and conservation of native and introduced tiphiid wasps that parasitize Japanese beetle and masked chafer grubs. He unraveled the wasps' seasonal biology and behavioral interactions with their hosts, including the first demonstration of parasitoids using species-specific kairomones from host frass and body odor to locate victims under the soil. His work showed that parasitism by *Tiphia* can be enhanced by providing certain nectar-producing flowers or other supplemental food, and also demonstrated how professional turf managers and homeowners who apply soil insecticides for grub control can modify the timing to conserve endemic biological controls.

As a graduate student, Michael authored five grant proposals that received over $180,000 in extramural funding, was senior author for seven refereed papers in national or international journals, and authored a chapter on Tiphiidae for the Encyclopedia of Entomology (2004). He gave several invited symposium presentations, co-organized a Formal Conference at the ESA national meeting, was active on UK's Linnaean Games and Student Debate teams,

and participated in many outreach activities. Michael also won the 2003 NCB-ESA Graduate Student Scholarship Award. Dr. Rogers recently joined the faculty at the University of Florida where he is an Assistant Professor with responsibilities for citrus IPM.

PROGRAM

March 28, 2004
Sunday Afternoon

Registration
Noon – 6:00 p.m.

NCB Executive Committee
Business Meeting
8:00 a.m. – noon
Conference Suite

March 28, 2004
Sunday Evening

Poster Set-Up
4:00 – 8:00 p.m.
Salon III

Insect Photo Salon
6:00 – 7:00 p.m.
Salon IA & IB

Linnaean Games Opening Round
7:00 – 9:00 pm
Gamesmaster: W. Wyatt Hoback
University of Nebraska at Kearney
Salon IA & IB

March 29, 2004
Monday Morning

Continental Breakfast
7:00 – 8:00 a.m.

Registration
7:30 a.m. – 5:00 p.m.

Opening Session & Preliminary Business Meeting
8:30 – 10:00 a.m.
Salon IA & IB

Welcome

Call to Order
Rob Wiedenmann, President
North Central Branch
Entomological Society of America

Local Arrangements Update
Sonny Ramaswamy

Opening Remarks
Kevin L. Steffey
President
Entomological Society of America

Paula Lettice
Executive Director
Entomological Society of America

ESA Governing Board Report
Scott Hutchins
NCB Representative to Governing Board

President's Address
Rob Wiedenmann

Preliminary Business Meeting

March 29, 2004
Monday Morning
BS/MS Student Competition Papers
Sections A, Cd, D
10:30 a.m. – 12:00 p.m.
Pavilion I

Moderators:
Michael E. Gray, Department of Crop Sciences, University of Illinois, Urbana, IL 61801
Richard M. Houseman, Department of Entomology, University of Missouri, Columbia, MO 65203

10:30 001 Survival of immersion and anoxia in the tiger beetle, *Cicindela hirticollis.*
Mathew L. Brust and William W. Hoback, University of Nebraska at Kearney, Kearney, NE, 68849, Charles B. Knisley, Randolph-Macon College, Ashland, VA

10:42 002 The effect of three types of light: halogen, mercury vapor and ultra violet on nocturnal species of carrion beetle including *Nicrophorus americanus* the federally endangered american burying beetle.
Daniel G. Snethen, RR 3, Box 67, Colome, SD 57528, William W. Hoback, Department of Biology, University of Nebraska Kearney, Kearney, NE 68849

10:54 003 Male burying beetles (Coleoptera: Silphidae) increase bait attractiveness.
Brian D. Sass, Jeffrey J. Hamik and William W. Hoback, 316 West 25 Street, University of Nebraska at Kearney, Kearney, NE 68849

11:06 004 Traps and product samples as indicators of stored-product insects in flour mills.
Andy R. Allen and Bhadriraju Subramanyam, 201 Shellenberger Hall, Kansas State University, Manhattan, KS 66502

11:18 005 Trapping plum curculio (*Conotrachelus nenuphar* Herbst) in an Indiana apple orchard.
Craig Roubos, 901 W. State Street, Purdue University, West Lafayette, IN 47907-2089

11:30 006 Coming out of the closet: a case study in forensic entomology.
Timothy E. Huntington, Leon G. Higley and Frederick P. Baxendale, 202 Plant Industry, University of Nebraska-Lincoln, Lincoln, NE 68583

March 29, 2004
Monday Morning
BS/MS Student Competition Papers
Sections Eb, F, Fa, Fb
10:30 a.m. – 12:00 p.m.
Pavilion VII

Moderators:
Kent S. Shelby, USDA, ARS, Biological Control of Insects Research Lab, Columbia, MO 65203
Philip J. Boeve, Monsanto Company, 9591 Fenner Road, Perry, MI 48872

10:30 007 Refinement of economic thresholds for defoliating insects on potato in central Nebraska.
Benjamin J. Zechmann and Wyatt Hoback, 905 W. 25th St., University of Nebraska at Kearney, Kearney, NE 68849

10:42 008 The effect of cropping systems on variant western corn rootworm adult and egg densities.
Jared B. Schroeder, Susan T. Ratcliffe and Michael E. Gray, 1102 South Goodwin Ave, S-320 Turner Hall MC-046, University of Illinois, Urbana, IL 61801

10:54 009 Diversity of stored product insects in midwestern feed mills.
Zeb Larson and Subramanyam Bhadriraju, 201 Shellenberger Hall, Kansas State University, Manhattan, KS 66506

11:06 010 Differences in feeding behaviors of two chinch bug species on resistant and susceptible buffalograss and sorghum germplasm.
Wyatt G. Anderson, Tiffany M. Heng-Moss and Frederick P. Baxendale, Department of Entomology, 202 Plant Industry Building, University of Nebraska-Lincoln, Lincoln, NE 68583-0816, Gautam Sarath, UNL East Campus, 332 Keim Hall , USDA-ARS, Lincoln, NE 68583-0939

11:18 011 Identifying resistance to aphids and aphid-transmitted viruses in potato.
Jeffrey A. Davis, Edward B. Radcliffe, David W. Ragsdale and Christian A. Thill, 1980 Folwell Ave., 290 Hodson Hall, University of Minnesota-St. Paul, St. Paul, MN 55108

11:30 012 A model for predicting survival of confused flour beetle larvae during heat treatment of mills.
Dhanaraj Boina[1], Subramanyam Bhadriraju[2] and Sajid Alavi[2], [1]Department of Entomology, [2]Department of Grain Science and Industry, Kansas State University, Manhattan, KS 66506

March 29, 2004
Monday Morning
PhD Student Competition Papers
Sections A, B, Ea, F, Fa, Fb
10:15 a.m. – 12:00 p.m.
Salon IA & IB

Moderators:
Ted A.Wilson, University of Missouri, Columbia, MO 65211
Scott Hutchins, Dow AgroSciences LLC, Indianapolis, IN 46268

10:15 013 Gene expression profiling in atrazine-treated *Chironomus tentans* using restriction fragment differential display-PCR (RFDD-PCR).
Troy D. Anderson and Kun Yan Zhu, Department of Entomology, 123 Waters Hall, Kansas State University, Manhattan, KS 66506

10:27 014 Reduced trypsin-like proteinase activity is the major mechanism of resistance to Cry1Ab in a dipel-resistant european corn borer strain.
Huarong Li, Department of Entomology, 123, Waters Hall, Kansas State University, Manhattan, KS 66506; Brenda Oppert, Grain Marketing and Production Research Center, USDA ARS, 1515 College Avenue, Manhattan, KS 66502; Randall A. Higgins, Lawrent L. Buschman, Kun Yan Zhu, Department of Entomology, 123, Waters Hall, Kansas State University, Manhattan, KS 66506; and Fangneng Huang, Department of Grain Science and Industry, Kansas State University, Manhattan, KS 66506

10:39 015 Development of enumerative and binomial sampling plans for soybean aphid.
Erin W. Hodgson, Eric C. Burkness, David W. Ragsdale and William D. Hutchison, 219 Hodgson, 1980 Folwell Ave., University of Minnesota, St. Paul, MN 55108

10:51 016 Banded sunflower moth egg sampling and unrecognized sunflower yield loss.
Kirk D. Mundal and Gary J. Brewer, Hultz Hall, North Dakota State University, Fargo, ND 58105

11:03 017 Molecular cloning and characterization of major digestive serine proteases from the first larval instar of hessian fly.
Omprakash -. Mittapalli, Smith Hall 901 W. State St, Dept. Entomology, Purdue University, West Lafayette, IN 47907-2089, Richard H. Shukle, Smith Hall, 901 W. State St, USDA-ARS, Dept. Entomology, Purdue University, West Lafayette, IN 47907-2089

11:15 **BREAK**

11:30 018 Fecundity and progeny production of *Tribolium castaneum* (Herbst) following sub-lethal exposure to 50°C in the pupal and adult stages.
Rizana M. Mahroof and Bhadriraju Subramanyam, 201 Shellenberger Hall, Department of Grain Science and Industry, Kansas State University, Manhattan, KS 66502, Paul W. Flinn, Grain Marketing and Production Research Center, USDA-ARS, Manhattan, KS 66502

11:42 019 Factors affecting adoption and implementation of Integrated Pest Management (IPM) in Indiana public schools: perceptions versus practice.
Alfred J. Fournier, 901 West State Street, Purdue University - Entomology Dept., West Lafayette, IN 47907

11:54 020 Population genetics of the Indian meal moth *Plodia interpunctella* using microsatellite markers.
Tony Grace, Srini Kambhampati, 123 Waters Hall, Kansas State University, Manhattan, KS 66506 and Bhadriraju Subramanyam, 306 Shellenberger Hall, Kansas State University, Manhattan, KS 66506

March 29, 2004
Monday Morning
PhD Student Competition Papers
Sections A, Ca, Cc, Cd, Ce, Cf
10:15 a.m. – 12:00 p.m.
Salon II

Moderators:
Steve Yaninek, Department of Entomology, Purdue University, West Lafayette, IN 47907-2089
Richard Weinzierl, Department of Crop Sciences, University of Illinois, Urbana, IL 61801

10:15 021 Phylogenetic analysis of *Chaenusa sensu lato* (Hymenoptera: Braconidae) using mitochondrial NADH 1 dehydrogenase gene sequences.
Robert R. Kula, Gregory Zolnerowich and Carolyn J. Ferguson, 123 West Waters Hall, Kansas State University, Manhattan, KS 66506-4004

10:27 022 Host use by the exotic parasitoid, *Pimpla disparis* (Vierick).
Susan E. Moser, 222 I-Building, University of Illinois, Urbana, IL 61802

10:39 023 *Frankliniella occidentalis* (Thysanoptera: Thripidae) and its predator *Amblyseius cucumeris* (Acari: Phytoseiidae) on impatiens.
Junrui Zhi, James R. Nechols and David C. Margolies, Department of Entomology, 123 Waters Hall, Kansas State University, Manhattan, KS 66506

10:51 024 Influence of the surrounding landscape on incidence of the aphid-transmitted viruses potato virus Y and potato leafroll virus in seed potato.
Matthew W. Carroll, Ian V. MacRae, Edward B. Radcliffe and David W. Ragsdale, 219 Hodson Hall, 1980 Folwell Ave., University of Minnesota, St. Paul , MN 55108

11:03 025 Effects of Bt-corn anthers on monarch butterfly larvae.
Patricia L. Anderson, 110 Insectary Bldg., Iowa State University, Ames, IA, 50011, Richard L. Hellmich and Leslie C. Lewis, Genetics Laboratory c/o Insectary Bldg, USDA-ARS Corn Insects and Crop Genetics Research Unit, Ames, IA 50011

11:15 **BREAK**

11:30 026 The role of volatile sunflower chemicals in host selection by female banded sunflower (Cochylidae) and sunflower moths (Pyralidae).
Maboko S. Mphosi and Stephen Foster, Hultz 202, North Dakota State University, Fargo, ND 58105

11:42 027 Control of sugarbeet root maggot (Diptera: Otitidae) by integrating *Metarhizium anisopliae* (Fungi Imperfecti) and cereal cover crops.
Ayanava Majumdar and Mark A. Boetel, 202 Hultz Hall, North Dakota State University, Fargo, ND 58105, Stefan T. Jaronski, NPARL, 1500 North Central Avenue, United States Department of Agriculture-ARS, Sidney, MT 59270, Robert J. Dregseth and Allen J. Schroeder, 202 Hultz Hall, North Dakota State University, Fargo, ND 58105

11:54 028 Geographic and voltinism differentiation among North American *Ostrinia nubilalis* using mitochondrial DNA analysis.
Brad S. Coates, Douglas V. Sumerford and Richard L. Hellmich, 113 Genetics Laboratory, Iowa State University, Ames, IA 50010

12:06 029 Community-level estimation of non-predatory chironomid production in a southern Illinois stream.
Denise A. Walther, Matt R. Whiles, David W. Butler and Michael B. Flinn, Department of Zoology, Southern Illinois University, Carbondale, IL 62901-6501

March 29, 2004
Monday Afternoon

Symposium
Challenges in Developing Action Thresholds for Ornamental Crops
1:30 – 5:30 p.m.
Pavilion I

Organizers and Moderators:
James R. Nechols and
David C. Margolies
Department of Entomology
Kansas State University
Manhattan, KS 66506

1:30 030 Introduction.
James R. Nechols, Department of Entomology, Kansas State University, Manhattan, KS 66506

1:40 031 Integrated pest management in floriculture production systems: are action thresholds realistic?
Raymond A. Cloyd, 384 National Soybean Research Laboratory, 1101 West Peabody Drive, University of Illinois, Urbana, IL 61801

2:10 032 Action thresholds for greenhouse bedding plants: a moving target.
George P. Opit, James R. Nechols, David C. Margolies - all from the Department of Entomology, and Kimberly A. Williams, Department of Horticulture, Forestry, and Recreation Resources, Kansas State University, Manhattan, KS 66506

2:40 033 Developing site-specific action thresholds.
John P. Sanderson, 135 Insectary Bldg., Dept. of Entomology, Cornell University, Ithaca, NY 14853

3:10		**BREAK**
3:25	034	Sampling and thresholds for ornamentals: it works in cut roses. **Christine Casey**, Department of Entomology, Box 7613, North Carolina State University, Raleigh, NC 27695, Michael Parrella, Department of Entomology, One Shields Avenue, University of California, Davis, CA 95616
3:55	035	How are pest management decisions made in managed landscapes? **Michael J. Raupp**, 4112 Plant Sciences Building, University of Maryland, College Park, MD 20742
4:25	036	Aesthetic thresholds and their development for the production and sale of ornamental crops. **Clifford S. Sadof**, Department of Entomology , 901 W. State St, Purdue University , West Lafayette, IN 47907-2089
4:55	037	Summary and Panel Discussion. **David C. Margolies**, Department of Entomology, Kansas State University, Manhattan, KS 66506

March 29, 2004
Monday Afternoon

Symposium
New Products and Technologies for the Future
1:30 – 5:30 p.m.
Salon IA

Organizers and Moderators:
Bhadriraju Subramanyam
Department of Grain Science and Industry
Kansas State University
Manhattan, KS 66506

Nandi Nagaraj
Department of Entomology
Kansas State University
Manhattan, KS 66506

1:30	038	Introduction. **Subramanyam Bhadriraju and Nandi Nagaraj**, 123 West Waters, Kansas State University, Manhattan, KS 66506
1:35	039	An overview of Yieldgard®corn insect traits. **Robert J. Starke**, Mailzone C3NE, 800 N. Lindbergh, Monsanto Company, St. Louis, MO 63167
2:00	040	FMC product update. **Terry Mize**, 10100 N. Ambassador Drive, FMC Corporation, Agricultural Products Group, Kansas City, MO 64153

2:25	041	Yield and protection benefits of using Poncho™ seed treatment insecticide on corn. **Mike Schwarz**, P. Hewitt and B. May, Research Triangle Park, 2 T.W. Alexander Drive, Bayer CropScience, Raleigh NC, 27709, R. Knake, 1400 Preston Road, Suite 400, Gustafson Inc., LLC, Plano, TX 75093
2:50	042	Storgard® product line extension and Trécé relocation and future in Oklahoma. **Donna Lingren**, P. O. Box 129, 7569 Highway 28 West, Trécé, Inc., Adair, OK, 74330, Michael A. Mullen, 1710 Muirfield Drive, Statesboro, GA 30458
3:05		**BREAK**
3:20	043	Portable products for measuring temperature. **Jay Duenow**, 1201 Shaffer Road, Bldg. 2, P.O. Box 1820, Raytek Corporation, Portable Products Division, Santa Cruz, CA 95061
3:45	044	The new phosphine label. **Herb Yeaman**, 1207 Gordon Avenue, Degesch America, Inc., Richmond, VA 23224
4:10	045	ECO2FUME and VAPORPH3OS products and their application in the grain and food processing industries. **Brian McSwigan**, Cytec Industries, 5 Garret Mountain Plaza, Global Phosphine Gas, West Paterson, NJ 07424
4:35	046	Dow AgroSciences product update. **Suresh Prabhakaran**, 9330 Zionsville Road, Dow AgroSciences LLC, Indianapolis, IN 46268
5:00	047	What's new in Nikon microscopes. **Gary Tockman**, 2751 Highway 100, Boyce Scientific, Inc., Gray Summit, MO 63039

5:25 048 Conclusions.
Subramanyam Bhadriraju, 201 Shellenberger Hall, Kansas State University, Manhattan, KS 66506

March 29, 2004
Monday Afternoon

Symposium
Established and Emerging Insect Pests of Oil Crops in the North Central Region
1:30 – 5:30 p.m.
Salon II

Organizer and Moderator:
Denise L. Olson
Department of Entomology
North Dakota State University
Fargo, ND 58105

1:30 049 Classical biological control of soybean aphid.
Zhishan Wu, George E. Heimpel and David W. Ragsdale, 219 Hodson Hall, 1980 Folwell Ave., University of Minnesota, St. Paul, MN 55108, Keith R. Hopper, 501 S. Chapel St., USDA-ARS, Beneficial Insect Introductions Research Laboratory, Newark, DE 19713, David Voegtlin, 607 E. Peabody Dr., Illinois Natural History Survey, Champaign, IL 61820

2:00 050 Bean leaf beetle and bean pod mottle virus research and management in soybean: Two pests, one crop, several options, many questions.
Marlin E. Rice, Department of Entomology, Iowa State University, Ames, IA, Jeffrey D. Bradshaw, Department of Entomology, Iowa State University, Ames, IA, and John H. Hill, Department of Plant Pathology, Iowa State University, Ames, IA

2:30	051	Sunflower midge: a pest management challenge. **Gary J. Brewer**, 1300 Albrecht Blvd., 202 Hultz Hall, North Dakota State University, Fargo, ND 58105
3:00	052	The palestriped flea beetle, *Systena blanda* (Melsheimer), as an emerging pest of sunflower and soybean in South Dakota. **Michael A. Catangui**, 230 Ag. Hall, Department of Plant Science, South Dakota State University, Brookings, SD 57007
3:30		**BREAK**
3:45	053	Insect pests of canola. **David Bragg**, Extension Entomology, Washington State University, Pomeroy, WA 99347-0190
4:15	054	Impact of seed size and reduced inputs on control of the crucifer flea beetle in canola. **Janet J. Knodel**, 5400 Highway 83 South, NDSU-NCREC, Minot, ND 58701, Denise Olson, Department of Entomology, Hultz Hall, North Dakota State University, Fargo , ND, 58105, Bryan Hanson and Robert Henson, Carrington REC, P.O. Box 219, NDSU, Carrington, ND 58421, Lorilie Atkinson, 5400 Highway 83 South, NDSU-NCREC, Minot, ND 58701
4:45	055	Biorational versus chemical insecticides for crucifer flea beetle control. **Denise L. Olson** and Frank Antwi, Department of Entomology, Hultz Hall, North Dakota State University, Fargo , ND 58105, Janet J. Knodel, NDSU, Highway 83 S, North Central Research and Extension Center, Minot, ND 58701

5:15 056 Cuphea – Exploring insect interactions with this new oil crop.
Robert W. Behle, Terry A. Isbell and Steven C. Cermak, 1815 N. University St., USDA-ARS-NCAUR, Peoria, IL, 61604-3902

March 29, 2004
Monday Afternoon

Submitted Papers
Sections B, Ca, Cc, Ce, D, Ea, F
1:30 – 4:00 p.m.
Salon IB

Moderators:
Frank Arthur
USDA, ARS, Biological Research Unit
Grain Marketing and Production Research Center
Manhattan, KS 66502
Jamee Brandhorst-Hubbard
Department of Entomology
University of Kentucky
Lexington, KY 40546-0091

1:30 057 Ovarial patency in *Heliothis virescens*: pharmacological analysis of subcellular mechanisms.
Maciej A. Pszczolkowski and Sonny Ramaswamy, 123 West Waters, Kansas State University, Manhattan, KS 66502, Asoka Srinivasan, Tougaloo College, Tougaloo, MI 39714

1:42	058	An evaluation of the effectiveness of DNA versus antibody-based techniques for studying predator-prey interactions in the field. **James D. Harwood** and John J. Obrycki, Department of Entomology, S-225 Agric. Science Center - North, University of Kentucky, Lexington, KY 40546-0091
1:54	059	Current and future prospects for biological control of weeds in Illinois. **Robert N. Wiedenmann**, Susan L. Post and Charles G. Helm, 607 E. Peabody, Illinois Natural History Survey, Champaign, IL 61820
2:06	060	Flight activity of aphid vectors of potato virus Y in Minnesota and North Dakota seed potato fields. **Erin E. Hladilek**, Robert A. Suranyi, Edward B. Radcliffe, David W. Ragsdale and Ian V. MacRae, 219 Hodson Hall , 1980 Folwell Ave., University of Minnesota, St. Paul, MN 55108
2:18	062	Evaluation of an automatic sprayer for the control of stable flies on pastured cattle. **David J. Boxler** and John B. Campbell, 461 West University Dr., University of Nebraska, WCREC, North Platte, NE 69101
2:30	063	Evaluation of several insecticide ear tags for horn fly control in western Nebraska. **John B. Campbell** and David J. Boxler, 461 West Univ. Dr. North Platte Ne. 69101, Univ. Nebraska, North Platte, NE 69101
2:42		**BREAK**
3:00	064	Altered pheromone response in an insecticide-resistant population of the codling moth. **Richard A. Weinzierl**, 1102 South Goodwin Avenue, University of Illinois, Urbana, IL 61801

3:12 065 The headsup network - using telemarketing for good instead of evil!
Ian V. MacRae, UMN NWROC, 2900 University Ave, University of Minnesota, Crookston, MN 56716

3:24 066 Resistance to diatomaceous earth by stored-product insects.
Paul G. Fields, 195 Dafoe Rd., Agriculture and Agri-Food Canada, Winnipeg, Manitoba, R2M 2K2, and Charles Adarkwah, Humboldt University of Berlin, Berlin, Germany

3:36 067 Soybean Aphid - How do we measure control ?
Brent A. Neuberger, Bob S. Hooten and Gail G. Stratman, 12342 N. Road, FMC, Stromsburg, NE 68666

March 29, 2004
Monday Afternoon

Student Competition Posters
All BS, MS, and PhD Posters
1:30 – 5:00 p.m.
Salon III
(Authors present 3:00 – 4:00 p.m.)

D068 Adult Japanese beetle (Coleoptera: Scarabaeidae) control on floribunda roses in the home landscape: cultural and chemical approaches.
Justin M. Vitullo and Clifford S. Sadof, Smith Hall, 901 W. State Street , Purdue University, West Lafayette, IN 47907

D069 Hymenoptera community structure of riparian buffers in Missouri: potential reservoirs of natural enemies for adjacent crops.
Johnathan G. White, Dianne L. Hall and Robert W. Sites, 1-87 Ag Bldg., University of Missouri, Columbia, MO 65211

D070 Promoters to improve the efficiency of artificial hybrid dysgenesis in *Tribolium castaneum*.
Kendra S. Siebert, Entomology Department, West Waters Hall, Kansas State University, Manhattan, KS 66503, Marce D. Lorenzen, 1515 College Ave, USDA GMRL, Manhattan, KS 66502, Yoonseong Park and Susan J. Brown, Biology Department, Ackert Hall, Kansas State University, Manhattan, KS 66503, and Richard W. Beeman, 1515 College Ave, USDA GMRL, Manhattan, KS 66502

D071 Predator-prey interactions involving minute pirate bug, thrips, and soybean aphid on soybean in Missouri.
Lisa N. Meihls, Thomas L. Clark and Wayne C. Bailey, Department of Entomology, 1-87 Agriculture Building, University of Missouri, Columbia , MO 65211

D072 Developing components of IPM for twospotted spider mite on greenhouse floricultural crops.
Kiffnie M. Holt, George P. Opit, James R. Nechols and David C. Margolies, 123 West Waters Hall, Kansas State University, Manhattan, KS 66502

D073 Photoperiodic induction of reproductive diapause in *Geocoris uliginosus* (Say) (Heteroptera: Geocoridae).
Sonja L. Brannon and Kenneth V. Yeargan, S-225 Ag. Sci. Ctr N, University of Kentucky, Lexington, KY 40509

D074 Does powdered sugar entering brood cells harm immature honeybees?
Nicholas P. Aliano and Marion D. Ellis, Department of Entomology, 202 Plant Industry Bldg., University of Nebraska-Lincoln, Lincoln, NE 68583

D075 Activity period of four species of carrion beetle on the Pine Ridge Indian Reservation of southwestern South Dakota.
Louden Whirlwind Horse, PO Box 500, Little Wound High School, Kyle, SD 57752, Daniel G. Snethen, RR 3, Box 67, Colome, SD 57528, William W. Hoback, Department of Biology, University of Nebraska Kearney, Kearney, NE 68849

D076 Spilling the guts: carcass preparation by *Nicrophorus marginatus*.
Jeffrey J. Hamik, Brian D. Sass and William W. Hoback, 316 West 25th Street, University of Nebraska at Kearney, Kearney, NE 68849

D077 Movement and survival of *Ostrinia nubilalis* (Hübner) larvae in *Zea mays* L. hybrid seed production fields after destruction of male corn plants.
Kate T. Kronback, Richard L. Hellmich, Douglas V. Sumerford and Leslie C. Lewis, 7 Genetics Laboratory, Iowa State University, USDA, ARS Corn Insects and Crop Genetics Research Unit, Ames, IA 50011

D078 Let there be light: behavioral responses of cowpea bruchids (*Callosobruchus maculatus*) to different wavelengths of light.
Matt R. Tarver, Barry R. Pittendrigh, Eric S. Furgason, Richard E. Shade and Larry L. Murdock, 901 W. State St., Purdue University, West Lafayette, IN 47907

D079 Preference for light sources in two tiger beetle species *Cicindela nevadica lincolniana* Casey and *Cicindela togata globicollis* Casey.
William J. Allgeier and Leon G. Higley, 202 Plant Industry Bldg., Department of Entomology, University of Nebraska-Lincoln, Lincoln, NE, 68583

D080 Learning about predator prey relationships.
Tierney R. Berger, W. Wyatt Hoback and Leon G. Higley, Plant Industry, University of Nebraska, Lincoln, NE 68504

D081 Trap bias in burying beetle sampling protocols.
Austin L. Joy, Jon C. Bedick, Jeffery Hamick, Brian Sass, John J. Riggins and William W. Hoback, 905 W. 25th Street, University of Nebraska at Kearney, Kearney, NE 68849

D082 Evaluation of wet meadow restoration using soil invertebrate biodiversity.
John J. Riggins, Department of Biology, 905 W 25th Street, University of Nebraska at Kearney, Kearney, NE 68849, Craig A. Davis, Department of Zoology, 430 Life Sciences West, Oklahoma State University, Stillwater, OK 74078, Kerri M. Skinner and W. Wyatt Hoback, Department of Biology, 905 W 25th Street, University of Nebraska at Kearney, Kearney, NE 68849

D083 Developmental response of *Phormia regina* (Calliphoridae) to temperature.
Paul D. Nabity and Leon G. Higley, 208 Plant Industry, University of NE-Lincoln, Lincoln, NE 68583-0816

D084 The effect of plant hydration status on the growth of impatiens, the reproductive rate of western flower thrips, and thrip-related foliage damage.
Catherine A. Bohnert, 2423 North Twyman Road, Avila University, Indep., MO 64058

D085 Western corn rootworm beetle populations in fields planted to transgenic corn.
Amanda R. Schroeder and Gerald E. Wilde, 123 W. Waters Hall, Kansas State University, Manhattan, KS 66506

D086 Estimating bean leaf beetle, *Cerotoma trifurcata* (Forster), damage in snap beans (*Phaseolus vulgaris* L.).
Kathleen V. Bennett and William D. Hutchison, 219 Hodson Hall, 1980 Folwell Ave, University of Minnesota, St. Paul, MN 55108

D087 Arthropod-weed interactions associated with glyphosate resistant soybean in Missouri.
Clinton G. Meinhardt, Thomas L. Clark, Wayne C. Bailey, 1-87 Agriculture Building, University of Missouri - Columbia, Columbia, MO 65211, and Reid J. Smeda, 210 Waters Hall, University of Missouri - Columbia, Columbia, MO 65211

D088 Gender composition of non-target coccinellids in Cry3Bb1 rootworm resistant maize.
Bradley L. McManus and Billy W. Fuller, NPB box 2140c room 248c, South Dakota State University, Brookings, SD 57007, Perrine Lavelle, 16 rue Chevreul, L'Hay les Roses, France, 94240, Wade W. French, 2923 Medary Ave., Agricultural Research Service Northern Grain Insects Research Laboratory, Brookings , SD 57006, Mark A. Boetel, 256 Hultz Hall, 1300 Albrecht Blvd. P.O. Box 5346, North Dakota State University, Fargo, ND 58105-5346, Graham P. Head, 800 North Lindbergh Blvd, Monsanto Co., St. Louis, MO 63198, Mike M. Ellsbury, 2923 Medary Ave., Agricultural Research Service Northern Grain Insects Research Laboratory, Brookings, SD 57006

D089 Plant insect interactions: an investigation of susceptible and resistant wheat to two aphid species.
Lisa D. Franzen, Tulio B. Macedo, Tiffany M. Heng-Moss and Leon G. Higley, 202 Plant Industry Building, University of Nebraska-Lincoln, Lincoln, NE 68583-0816

D090 Behavioral observations of soybean aphids, *Aphis glycines* Matsumura, to identify sources of resistance in non-host beans.
Andrea E. Ray-Chandler, John Reese and Ralph Charlton, 123 West Waters Hall, Kansas State University, Manhattan, KS 66506

D091 Effect of temperature on performance of Noviflumuron against the subterranean termite, *Reticulitermes flavipes* (Kollar).
Neil A. Spomer and Shripat T. Kamble, Department of Entomology, 201 Plant Industry Bldg., University of Nebraska , Lincoln, NE 68583-0816

D092 Expression and induction of two family 4 cytochrome P450 (CYP4) genes identified from *Chironomus tentans* exposed to atrazine.
Diana K. Londono and Blair D. Siegfried, 202 Plant Industry building, East Campus, University of Nebraska-Lincoln, Lincoln, NE 68583, Gautam Sarath, 332 Keim Hall, East Campus, University of Nebraska-Lincoln, USDA-ARS, Lincoln, NE 68583

D093 PCR-RFLP analysis on mitochondrial DNA in screwworms.
Sasi Maliphan, Steven R. Skoda, Jeff T. Krumm and John E. Foster, 202PI Bldg., University of Nebraska at Lincoln, Lincoln, NE, 68506

D094 Characterization of Cry1F resistance in laboratory selected European corn borer, *Ostrinia nubilalis* (Lepidoptera: Crambidae).
Eliseu J. Pereira, 202 Plant Industry Bldg, University of Nebraska, Lincoln, NE 68583-0816, Bruce A. Lang, 301 Campus Dr, Mycogen Seeds, Huxley, IA 50121, Terence A. Spencer, 202 Plant Industry Bldg, University of Nebraska, Lincoln, NE 68583-0816, Nicholas P. Storer, 9330 Zionsville Rd, Dow AgroSciences, Indianapolis, IN 46268-1053, and Blair D. Siegfried, 202 Plant Industry Bldg, University of Nebraska, Lincoln, NE 68583-0816

D095 Prey suitability of *Myzus lythri* for *Harmonia axyridis* and *Coleomegilla maculate*.
Bethzayda Matos, 4 Insectary, Iowa State University, Ames, IA 50011 and John J. Obrycki, S-225 Agric. Sci. Bldg. North, University of Kentucky, Lexington, KY 40546-0091

D096 Molecular markers for genetic variation in predatory mites.
Bhanu S. Konakandla, Fengyou Jia, Yoonseong Park and David C. Margolies, Dept. of Entomology, Waters Hall, Kansas State University, Manhattan, KS 66506-4004

D097 Within-plant distribution of twospotted spider mite, *Tetranychus urticae* Koch (Acari: Tetranychidae), on impatiens: development of a presence-absence sampling plan.
Fahad J. Alatawi, G P. Opit, D C. Margolies and J R. Nechols, KSU, Manhattan, KS 66502

D098 Crop colonization, feeding and reproduction by *Hippodamia convergens* as indicated by stable carbon isotopes.
Jarrad R. Prasifka, Genetics Laboratory c/o Insectary, USDA - ARS Corn Insects Unit, Ames, IA 50011, Kevin M. Heinz, Texas A&M University, Department of Entomology, College Station, TX 77843-2475 and Kirk O. Winemiller, Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, TX 77843-2258

D099 Biological control of the Indian meal moth on finished stored products using egg and larval parasitoids.
Matthew J. Grieshop, Department of Entomology, Kansas State University, Manhattan , KS 66506, Paul W. Flinn, USDA Grain Marketing and Research Center, 1515 College Avenue, Manhattan, KS 66502 and James R. Nechols, Department of Entomology, Kansas State University, Manhattan, KS 66506

D100 Population genetics and breeding structure of wood-feeding cockroaches of the genus *Cryptocercus*.
Benjamin T. Aldrich and Srini Kambhampati, 123 West Waters Hall, Department of Entomology, Kansas State University, Manhattan, KS 66506 and Elliot S. Krafsur, Department of Entomology, Iowa State University, Ames, IA 50011

D101 Survival of wheat curl mite on virus infected wheat plants.
Benjawan Siriwetwiwat and Gary L. Hein, Panhandle Res. & Ext. Center , 4502 Ave I, UNL, Scottsbluff, NE 69361 and Roy C. French, Dept. Plant Pathology, 406 Plant Sciences Hall, UNL, USDA, Lincoln, NE 68583

D102 Manipulation of aggregation behavior of the European corn borer (Lepidoptera: Crambidae) in spring wheat.
Brendon J. Reardon, Douglas V. Sumerford and Thomas W. Sappington, Genetics Laboratory, Iowa State University, Ames, IA 50011

D103 Dispersal behavior of lesser grain borer, *Rhyzopertha dominica* (F).
Godfrey P. Ching'oma, James F. Campbell, Sonny B. Ramaswamy and Bhadriraju H. Subramanyam, Entomology Department, 123 Waters Hall, Kansas State University, Manhattan, KS 66506

D104 Dispersal of house flies (*Musca domestica* L.) in the agricultural and urban environment: population dynamics study using microsatellite markers.
Seemanti Chakrabarti, Srinivas Kambhampati and Ludek Zurek, 123 West Waters Hall, Kansas State University, Manhattan, KS 66506

D105 Is it safe? addressing questions on agricultural biotechnology through an educational website.
Douglas A. Golick and Leon G. Higley, 202 Plant Industry Building, University of Nebraska-Lincoln, Lincoln, NE 68583

D106 Measuring the effects of insecticides on bean leaf beetle mortality and repellency on soybeans.
Jeffrey D. Bradshaw and Marlin E. Rice, Department of Entomology, 110 Insectary, Iowa State University, Ames, IA 50011

D107 Phytophagous preferences of the multicolored Asian lady beetle (Col.: Coccinellidae) for autumn ripening fruit.
Robert L. Koch, Eric C. Burkness, Suzanne J. Wold Burkness and William D. Hutchison, 219 Hodson Hodson Hall , 1980 Folwell Ave., University of Minnesota, St. Paul, MN 55108

D108 Evaluation of diatomaceous earth plus methoprene to control the lesser grain borer (*Rhyzopertha dominica* (F.) in rough rice.
Yaowaluk Chanbang, Kansas State University, Manhattan, KS, 66502, Frank Arthur, 1515 College Ave., USDA-ARS Grain Marketing and Production Research Center, Manhattan, KS, 66502, Gerald Wilde, Kansas State university, Manhattan, KS 66502

D109 A novel approach for the study of *Diabrotica* larvae in transgenic and non-transgenic maize.
Pete L. Clark and John E. Foster, 13 Plant Industry Building, University of Nebraska - Lincoln, Lincoln, NE 68583-0816

D110 The impact of roundup ready cropping systems on soil dwelling mite populations.
Michal Roberts and Gerald E. Wilde, 123 West Waters Hall, Kansas State University, Manhattan, KS 66506

D111 Molecular mapping of sorghum genes expressing tolerance to damage by the greenbug (Homoptera: Aphididae).
Nandi J. Nagaraj, John C. Reese, Mitch R. Tuinstra, Paul St. Amand, Michael C. Smith, Ken D. Kofoid, Leslie R. Campbell, M. B. Kirkham and Gerald E. Wilde, 123 West Waters Hall, Department of Entomology, Kansas State University, Manhattan, KS 66506

D112 Population diversity and gene flow among European corn borer in the Midwestern corn belt.
Jeffrey T. Krumm, 013 Plant Industry Bldg., University of Nebraska - Lincoln, Lincoln, NE 68583-0816, Thomas E. Hunt, Haskell Agricultural Laboratory, University of Nebraska-Lincoln, Concord, NE 68728, Steven R. Skoda, 305 Plant Industry Bldg, USDA, Lincoln, NE 68583-0938, Gary L. Hein, Panhandle Research & Extension Center, University of Nebraska-Lincoln, Scottsbluff, NE 69361, and John E. Foster, 312F Plant Industry Bldg., University of Nebraska-Lincoln, Lincoln, NE 68583-0816

D113 Coleopteran-specific Cry3Bbl Toxin has no adverse effect on earthworms exposed to soil containing corn roots or biomass.
Aqeel Ahmad, Gerald Wilde and Kun Y. Zhu, 123 West Water Hall, Kansas State University, Manhattan, KS 66506

D114 Activity of fatty acid amides and free fatty acids from alfalfa glandular trichomes on settling by the potato leafhopper.
Christopher M. Ranger, Rudolph E. Winter and George E. Rottinghaus, Department of Entomology, University of Missouri-Columbia, Department of Chemistry and Biochemistry, University of Missouri-St. Louis, Center for Phytonutrient and Phytochemical Studies and Veterinary Medical Diagnostic Lab, University of Missouri, Columbia, MO 65201, Elaine A. Backus, Exotic & Invasive Diseases & Pests Research, USDA, ARS, PWA, Parlier, CA 93648

D115 Relationship between supercooling point and mortality at subzero temperatures in the Indian meal moth, *Plodia interpunctella* (Hübner). **Mario A. Carrillo**, Colleen A. Cannon, William F. Wilcke, Vance Morey, Nalladurai Kaliyan and William D. Hutchison, 219 Hodson Hall, 1980 Folwell Ave., University of Minnesota, Saint Paul, MN 55108

March 29, 2004
Monday Afternoon
4:15 – 5:15 p.m.
Salon IB

Business Meeting of the *Association of Indian Entomologists in North America* (AIENA)

Organizer and Current President:
Ayanava Majumdar
Department of Entomology, Hultz Hall
North Dakota State University
Fargo, ND 58105

March 29, 2004
Monday Evening
7:00 – 8:00 p.m.
Salon IA & IB

Photo Salon

8:00 – 10:00 p.m.
Salon IA & IB

Linnaean Games Semi & Final Rounds

Moderator:
W. Wyatt Hoback
University of Nebraska at Kearney
Poster Set-up
8:00 – 10:00 p.m.
Salon II

March 30, 2004
Tuesday Morning

Continental Breakfast
7:00 – 8:00 a.m.

Registration
7:30 a.m. – 5:00 p.m.

March 30, 2004
Tuesday Morning

Symposium
Western Corn Rootworm Variant on the Move: What Have We Learned Since the Mid-1990's?

8:00 – 11:30 a.m.
Salon II

Organizers and Moderators:
Michael E. Gray
Department of Crop Sciences
University of Illinois
Urbana, IL 61801

Eli Levine
Center for Economic Entomology
Illinois Natural History Survey
Champaign, IL 61820

8:00 116 Introduction.
Michael E. Gray, 1102 S. Goodwin Avenue, S-320 Turner Hall, University of Illinois, Urbana, IL 61801

8:05 117 How does crop diversity and phenology influence variant western corn rootworm population dynamics?
Michael E. Gray, S-320 Turner Hall, 1102 S. Goodwin Avenue, University of Illinois, Urbana, IL 61801, Christopher M. Pierce, Department of Entomology, Entomology Hall, Purdue University, West Lafayette, IN 47907, Matthew E. O'Neal, Department of Entomology, Insectary Building, Iowa State University, Ames, IA 50011

8:25	118	Effects of local weather and soybean herbivory on the movement of rotation-resistant western corn rootworm beetles. **Joseph L. Spencer**, Center for Economic Entomology, Natural Resources Bldg, 607 E. Peabody Drive, Champaign, IL, 61820-6917, Scott A. Isard, 220 Davenport Hall, 607 S. Mathews Ave., Department of Geography, University of Illinois, Urbana, IL, 61801, Timothy R. Mabry, 503 S. Maplewood Ave., Monsanto Company, Williamsburg, IA, 52361, Eli Levine, Center for Economic Entomology, Natural Resources Bldg, 607 E. Peabody Drive, Champaign, IL, 61820-6917
8:45	119	Seasonal movement and disease transmission by western corn rootworm adults as the variant moves into an area. **Eli Levine**, Center for Economic Entomology, Illinois Natural History Survey, 607 E. Peabody Dr., Champaign, IL 61820
9:05	120	Western corn rootworm larval damage to first year corn in Minnesota. **Ken Ostlie**, Fritz Breitenbach and Lisa Behnken, Department of Entomology, University of Minnesota, St. Paul, MN 55108
9:40	121	The latest biological and economic results from simulations of the western corn rootworm variant models. **David W. Onstad** and D. W. Crowder, Department of Natural Resources and Environmental Sciences, University of Illinois, Champaign-Urbana, IL 61801
10:00	122	Western Corn Rootworm Genetics: The As & Ts and Cs & Gs. **Susan T. Ratcliffe**, 1102 S. Goodwin Avenue, S-316 Turner Hall, University of Illinois, Urbana, IL 61801

10:20 123 What have we learned from the U.S. Corn Belt variant experience that can be applied to the European scene? Is the variant in Europe?
Jon J. Tollefson, 17 Insectary Bldg., Iowa State University, Ames, IA 5011-3140

10:40 124 Management recommendations for the variant western corn rootworm—It's deja vu all over again.
Kevin L. Steffey, Turner Hall, 1102 South Goodwin Avenue, University of Illinois, Urbana, IL 61801

March 30, 2004
Tuesday Morning

BCE Symposium
Urban Entomology Innovations in the North Central Region

8:00 – 12:00 p.m.
Pavilion I

Organizers and Moderators:
Suresh K. Prabhakaran
Dow AgSciences
5966 East Kitchen Lane
Mooresville, IN 46158
Shripat Kamble
Department of Entomology
University of Nebraska
Lincoln, NE 68583-0816

8:00 125 Introduction.
Suresh K. Prabhakaran, 5966 East Kitchen Lane, Dow AgroSciences, Mooresville, IN 46158

8:05 126 Diversity within significant arthropod groups found in mulch ecosystems.
Kyle K. Jordan, Susan C. Jones, George Keeney, and Chad Schone, Department of Entomology, The Ohio State University, Columbus, OH 43210

8:20 127 Stable flies as urban pests and research needs.
David B. Taylor, USDA, ARS, Midwest Livestock Insects Research Unit, University of Nebraska, Lincoln, NE 68583-0938

8:35 128 Stored product pest management activities at K-State: Research and impacts.
Subramanyam Bhadriraju, 201 Shellenberger Hall, Kansas State University, Manhattan, KS 66506

8:50 129 The influence of sanitation on insect movement and response to pheromone traps.
Linda J. Mason, Department of Entomology, 901 West State Street, Purdue University, West Lafayette, IN 47907

9:05 130 ProFume ® gas fumigant, a methyl bromide alternative for control of post-harvest stored product pests.
Suresh K. Prabhakaran, 5966 East Kitchen Lane, Dow AgroSciences, Mooresville, IN 46158

9:20 131 Food-borne pathogen in flight: association of *Escherichia coli* O157:H7 with house flies.
Ludek Zurek and M. J. Alam, 123 West Waters Hall, Kansas State University, Manhattan, KS 66506

9:35 132 Cockroach gel bait aversion and the development of a new gel bait formula.
Gary A. Braness, Nonggang Bao and Tom Macom, 981 NC 42 East, Bayer Environmental Science, Clayton, NC 27520, Joe Barile, 7 Noreen Road, Mansfield, MA 02048

9:50	133	Movement preferences of *Reticulitermes flavipes* (Kollar) after disturbance in laboratory arenas **M. A. Schwinghammer** and R. M. Houseman, Department of Entomology, University of Missouri, Columbia, MO 65211
10:20	134	Consumption by and fitness of *Reticulitermes flavipes* (Kollar) pseudergates when offered mulches of varying composition and age. **O. P. Pinzon** and R. M. Houseman, Department of Entomology, University of Missouri, Columbia, MO 65211
10:35	135	Performance of noviflumuron in eliminating subterranean termite colonies in the Midwest. **Michelle S. Smith** and Suresh K. Prabhakaran, 9330 Zionsville Road, Dow AgroSciences, Indianapolis, IN 46268
10:50	136	Use of fipronil in exterior perimeter treatments for termite control in Nebraska. **Shripat T. Kamble**, 201 PI, Department of Entomology, University of Nebraska, Lincoln, NE 68583-0816, Robert W. Davis, 2605 Butler National Dr., BASF Specialty Products, Pflugerville, TX 78660 and Mark A. Coffelt, 7016 Mercier Ct., BASF Specialty Products, Kansas City, MO 64118
11:05	137	Premise retreats - data from field applications. **Michael Chapman**, Bayer Environmental Science, Placentia, CA 92870
11:20	138	Applications of molecular genetics in urban entomology. **Allen L. Szalanski**, Department of Entomology, University of Arkansas, Fayetteville, AR 72701

11:35 139 Molecular research on *Reticulitermes* caste differentiation: what we have learned in the past 3 years.
Michael E. Scharf, 901 W. State St., Department of Entomology, Purdue University, West Lafayette, IN 47907-2089

11:50 140 Closing Remarks.
Shripat T. Kamble, Department of Entomology, University of Nebraska, Lincoln, NE 68583

March 30, 2004
Tuesday Morning

Submitted Papers
Sections F, Fa, Fb,
8:30 – 11:30 a.m.
Pavilion VII

Moderators:
Robert W. Behle, USDA-ARS
NCAUR, Peoria, IL 61604-3902
Thomas L. Clark, Department of Entomology
University of Missouri, Columbia, MO 65211

8:30 141 The effects of different rootworm control products, different planting times, and different crop rotation sequences on rootworm larval injury and rootworm adult emergence.
Nathan L. Wentworth, Kevin L. Steffey, Michael E. Gray and Ron Estes, N-305 Turner Hall 1102 S. Goodwin Ave., University of Illinois, Urbana, IL 61801

8:42 142 Effect of clothianidin seed treatments and transgenic corn event MON863 on selected western corn rootworm life history traits.
Lance J. Meinke, Department of Entomology, University of Nebraska, Lincoln, NE 68583-0816, Michael Schwarz, 2 T. W. Alexander Drive, Bayer CropScience, Research Triangle Park, NC 27709 and Ty T. Vaughn, 700 Chesterfield Parkway North, Monsanto Company, Chesterfield, MO 63198

8:54 143 Pyrethroid resistance to corn earworm in Midwestern U.S. sweet corn: comparisons with trends in the southern states.
William D. Hutchison and Eric C. Burkness, 1980 Folwell Ave., Dept. of Entomology, University of Minnesota, St. Paul, MN 55108, Bryan Jensen, Dept. of Entomology, 1630 Linden Dr., University of Wisconsin, Madison, WI 53706, Roger Leonard, LSU Ag Center, 212 Macon Ridge Rd, Louisiana State University, Winnsboro, LA 71295, Tom L. Rabaey, 1201 N. 4th St, General Mills, Le Sueur, MN 56058, Robert L. Koch, 1980 Folwell Ave., Dept. of Entomology, University of Minnesota, St. Paul, MN 55108, Rick A. Weinzierl, Dept. of Crop Sciences-Entomology, S-522 Turner Hall, Univ. of Illinois, Champaign, IL 61801, Eileen Cullen and John L. Wedberg, Dept. of Entomology, 1630 Linden Dr., University of Wisconsin, Madison, WI 53706

9:06 144 Crop hosts for *Helicoverpa zea* in the cotton belt - implications for IRM.
Richard D. Voth, Sakunta Sivasupramaniam, Graham Head and James W. Mullins, 800 N. Lindbergh Blvd. , Monsanto Co. , St. Louis, MO 63167, John Adamczyk and Jeffrey Gore, SIMRU, 141 Experiment Station Road, POB 346, USDA, Stoneville, MS 38776, Randy Luttrell, Dept. of Entomology, 319 Agri Bldg. , University of Arkansas, Fayetteville, AR 72701, Roger Leonard, Macon Ridge Research Station, 212 Macon Ridge Road, Louisiana State University, Winnsboro, LA 71295, John Ruberson, Coastal Plain Experiment Station, Rainwater Road, University of Georgia, Tifton , GA 31793, J. R. Bradley, Ryan Jackson and John Van Duyn, Vernon James Res. & Ext. Center, 207 Research Station Road, North Carolina State University, Plymouth, NC 27962

9:18 145 MIR604WR: a novel event for corn rootworm control in field corn.
Craig N. Nichols and Roy S. Boykin, 410 Swing Road, Syngenta Crop Protection, Greensboro, NC 27409, Jon B. Sagers, Moez R. Meghji, Jeng S. Chen and Rob J. Wilde, 7500 Olson Memorial Hwy., Syngenta Plant Science, Golden Valley, MN 55427

9:30 146 3243M and MIR152V: Novel events for lepidopteran control in corn.
Steve Mroczkiewicz, 3074 North Rob Roy Road, Syngenta Crop Protection, Attica, IN 47918, Clemens Chris, 495 County Road 1300N, Champaign, IL 61822, Boykin Roy, 410 Swing Road, Syngenta Crop Protection, Greensboro, NC 27409, James White, Moez Meghji and Rob Wilde, 7500 Olson Memorial, Syngenta Plant Sciences, Golden Valley, MN 55427

9:42 **BREAK**

10:00	147	Comparative biology of three cereal aphids on TAM 107 wheat. **Jawwad A. Qureshi** and JP Michaud, Department of Entomology, Kansas State University, Agricultural Research Center, 1232 240th Avenue, Hays, KS 67601
10:12	148	Selected grassy weeds as alternate hosts of the northern corn rootworm. **Isaac O. Oyediran**, 1-87 Agriculture Building, University of Missouri, Columbia, MO 65211-7140, Bruce E. Hibbard, 205 Curtis Hall, University of Missouri , Columbia, MO 65211, Thomas L. Clark, 1-87 Agriculture Building, University of Missouri, Columbia, MO 65211-7140
10:24	151	Flonicamid, a new aphicide for vegetable crops. **Robert S. Perry**, J Bahr and P Resner, FMC Corporation, 4874 Enchanted Valley Road, Middleton, WI 53562
10:36	152	Efficacy of spinosad on corn against stored-product insects. **Jaclyn Rowan**, Fangneng Huang and Subramanyam Bhadriraju, Kansas State University, Department of Grain Science and Industry, Manhattan, KS 66506

March 30, 2004
Tuesday Morning

Submitted Posters
All Sections
8:00 a.m. – 5:00 p.m.
Salon III
(Authors present 4:00 – 5:00 p.m.)

D153 Detection of nonsynonymous mutations in two toxin-binding regions on the cadherin candidate *Bacillus thuringiensis* resistance gene of *Ostrinia nubilalis*.
Brad S. Coates, Douglas V. Sumerford and Richard L. Hellmich, 113 Genetics Laboratory, Iowa State University, Ames, IA 50010

D154 Nutritional supplements for insects? the effect of selenium on resistance to baculovirus infection.
Kent S. Shelby and Holly J. R. Popham, 1503 S. Providence Rd., USDA ARS BCIRL, Columbia, MO 65201

D155 Fluorescent and ultrastructural studies of the teratocytes of *Microctonus aethiopoides* (Hymenoptera: Braconidae) from the hemocoel of the host alfalfa weevil, *Hypera postica* (Coleoptera: Curculionidae).
Javad Habibi, Dept. Entomology, Agriculture Building, University of Missouri, Columbia, MO, 65203, Kent S. Shelby, 1503 S. Providence Rd., USDA-ARS-BCIRL, USDA-ARS-BCIRL, Columbia, MO 65203, Ben Puttler, Dept. Entomology, Agriculture Building, University of Missouri, Columbia, MO 65203

D156 Detection of resistance to Cry1Ab in a field collection of European corn borer (Lepidoptera: Crambidae).
Terence A. Spencer, 202 P.I., East , University of Nebraska - Lincoln, Lincoln, NE 68583.0816, R L. Hellmich, Corn Insects and Crop Genetics Research Unit, Iowa State University, USDA ARS, Ames, IA 50011 and Blair D. Siegfried, 202 P.I., East , University of Nebraska - Lincoln, Lincoln, NE 68583-0816

D157 Using flow cytometry to determine differential hemocyte counts in suitable and unsuitable stemborer hosts parasitized by *Cotesia flavipes*.
Marianne Alleyne, 172 NRB, 607 E. Peabody Drive, Illinois Natural History Survey, Champaign, IL 61820, James B. Nardi, 320 Morrill Hall, 505 S. Goodwin Ave., Department of Entomology, University of Illinois at Urbana-Champaign, Urbana, IL 61801 and Robert N. Wiedenmann, 172 NRB, 607 E. Peabody Drive, Illinois Natural History Survey, Champaign, IL 61820

D158 Method to estimate linkage relationships in the European corn borer.
Douglas V. Sumerford, USDA-ARS-Corn Insects, Iowa State University, Ames, IA 50011

D159 Binding analysis of Cry1 toxins in selected and susceptible populations of the European corn borer, *Ostrinia nubilalis*, (Crambidae).
Herbert A. Siqueira, 202 Plant Industry Bldg, University of Nebraska, Lincoln, NE 68583-0816, Ronald D. Flannagan, 7250 NW 62nd Avenue, Pioneer Hi-Bred International, Inc. , Johnston, IA 50131-0552 and Blair D. Siegfried, 202 Plant Industry Bldg, University of Nebraska, Lincoln, NE 68583-0816

D160 Host preference of a soybean aphid parasitoid, *Aphelinus albipodus* (Hymenoptera: Aphelinidae).
Zhishan Wu, George E. Heimpel and Ruth J. Barth, 219 Hodson Hall, 1980 Folwell Ave., University of Minnesota, Saint Paul, MN 55108

D161 *Megastigmus aculeatus* (Hymenoptera: Torymidae), a seed predator of *Rosa multiflora*.
Laura C. Jesse, 4 Insectary, Iowa State University, Ames, IA, 50011 and John J. Obrycki, University of Kentucky, Lexington, KY 40546-0091

D162 Microsatellite markers in three species of dampwood termites genus *Zootermopsis* (Isoptera: Termopsidae).
Benjamin T. Aldrich and Srini Kambhampati, 123 West Waters Hall, Department of Entomology, Kansas State University, Manhattan, KS 66506

D163 Population density of *Nicrophorus americanus* the federally endangered American beetle in the Nebraska Counties of Blaine, Brown, Loup, and Rock.
Daniel G. Snethen, RR 3, Box 67, Colome, SD, 57528, William W. Hoback, Department of Biology, University of Nebraska Kearney, Kearney, NE 68849

D164 First-generation European corn borer damage distribution within cornfields and its relationship to moth distribution in grass.
Thomas W. Sappington, Genetics Laboratory, Iowa State University, USDA-ARS, CICGRU, Ames, IA 50011

D165 Arthropod communities in monocropped and black walnut intercropped alfalfa.
William T. Stamps, Terryl L. Woods, Robert L. McGraw and Marc J. Linit, 1-41 Agriculture Bldg, University of Missouri, Columbia, MO 65211

D166 Egg laying preference of female fungus gnats, *Bradysia* sp. nr *coprophila* (Lintner) (Diptera: Sciaridae) on three different commercially available bagged growing media.
Theresa L. Meers, 1201 S. Dorner Dr., University of Illinois, Urbana , IL 61801, Raymond A. Cloyd, 384 NSRC, mc 637, 1101 West Peabody Drive, University of Illinois at Urbana Champaign, Urbana, IL, 61801

D167 Status of three previously common, native lady beetle species in eastern South Dakota.
Louis S. Hesler and Robert W. Kieckhefer, 2923 Medary Ave., USDA-ARS, Brookings, SD 57006 and Michael A. Catangui, AGH 230, Box 2207A, Plant Science Department, South Dakota State University, Brookings, SD 57007

D168 Size-based reproductive behavior of northern corn rootworms.
Bryan W. French, Leslie Hammack, Jason Flaskey and Dave Beck, USDA, ARS, 2923 Medary Ave., Northern Grain Insects Research Laboratory, Brookings, SD 57006

D169 Transition to organic production: how will soil fertility, soil biology, and pest management be affected?
Catherine E. Eastman, Edmond Zaborski, John T. Shaw and Jonathan Lundgren, 172 Natural Resources, 607 E. Peabody, Illinois Natural History Survey, Champaign, IL 61820; Michelle Wander and John Masiunas, University of Illinois, Urbana, IL 61801, Leslie Cooperband, University of Wisconsin, Madison, WI; Darin Eastburn, Deborah Cavanaugh-Grant, Daniel Anderson, and Martha Bazik, University of Illinois, Urbana, IL 61801

D170 Spatial and temporal patterns of stored-product insect flight activity in a Kansas landscape.
James F. Campbell, 1515 College Ave, USDA ARS GMPRC, Manhattan, KS 66502, Olgaly Ramos-Rodriguez, Department of Entomology, Kansas State University, Manhattan, KS 66502 and Michael A. Mullen, 1710 Muirfield Drive, Statesboro, GA 30458

D171 Association of insects in soybean fields and perimeter vegetation.
Stephen D. Danielson, Department of Entomology, 202 P.I. Bldg, and Erin E. Blankenship, Department of Statistics, 103 Miller Hall, University of Nebraska--Lincoln, Lincoln, NE 68583

D172 A comparison of macroinvertebrate community structure on artificial rock riffles to snag and exposed streambed habitats in Cache River, Illinois.
Joseph H. Rowlett, Denise A. Walther and Matt R. Whiles, Department of Zoology, Southern Illinois University, Carbondale, IL 62901-6501

D173 A consensus recommendation for soybean aphid control - 2004 field season.
Christina DiFonzo, Michigan State University; Wayne Bailey, University of Missouri; Tracey Baute, Ontario Ministry of Agriculture & Food; Larry Bledsoe, Purdue University; Eileen Cullen, University of Wisconsin; Philip Glogoza, North Dakota State University; Mike Gray, University of Illinois; Bruce Eisley & Ron Hammond, Ohio State University; Tom Hunt, University of Nebraska; Doug Johnson, University of Kentucky; Ken Ostlie & David Ragsdale, University of Minnesota; Marlin Rice, Iowa State University; David Voegtlin, University of Illinois

D174 Application of Quadris® + Warrior® for soybean yield enhancement: Kentucky's experience in 2003.
Douglas W. Johnson, Donald E. Hershman and James H. Herbek, 1205 Hopkinsville St., P.O. Box 469, University of Kentucky, Princeton, KY 42445-0469

D175 The UNL South Central Ag Lab Entomology Web Site.
Terry A. DeVries, South Central Ag Lab, University of Nebraska-Lincoln, P. O. Box 66, Clay Center NE 68933, and Robert J. Wright, Dept. of Entomology, 202 Plant Industry Bldg., University of Nebraska-Lincoln, Lincoln, NE 68583-0816

D176 Entomology education in the Iowa Master Gardener Program.
Laura C. Jesse, 4 Insectary, Iowa State University, Ames, IA, 50011, Donald R. Lewis and James P. Romer, Horticulture, Iowa State University, Ames, IA 50011

D177 Summary of soybean stem borer management trials.
Phillip E. Sloderbeck and Lawrent L. Buschman, Southwest Research and Extension Center, 4500 E. Mary St., Kansas State University, Garden City, KS 67846

D178 Flonicamid: A novel insecticide for use in potato.
Sam Lockhart, 1009 Leonards Way, FMC Corporation, Argusville, ND 58005

D179 Transgenic corn for rootworm control: implementing IRM and IPM with uniform scouting procedures.
Marlin E. Rice, 103 Insectary, Iowa State University, Ames, IA 50011, Eileen M. Cullen, University of Wisconsin-Madison, Madison, WI, Christina D. DiFonzo, Michigan State University, East Lansing, MI, Kenneth R. Ostlie, University of Minnesota, St. Paul, MN, Kevin L. Steffey, University of Illinois, Champaign-Urbana, IL, Jon J. Tollefson, Iowa State University, Ames, IA and Robert J. Wright, University of Nebraska-Lincoln, Lincoln, NE

D180 A survey to develop benchmarks for entomological literacy.
William W. Hoback and Kerri M. Skinner, 904 S. 25th Street, University of Nebraska Kearney, Kearney, NE 68849, Gwen A. Pearson, 113 Student Services Bldg., MSU, Michigan State University, East Lansing, MI

D181 Soybean aphid-an interactive learning experience.
Palle Pedersen, Marlin E. Rice, Brian Lang, Todd Vagts and Brent Brueland, Iowa State University, Ames, IA 50011

D182 Corn response to mesotrione as affected by insecticide application method and rate.
Christina D. DiFonzo[1], Andrew J. Chomas[2], Michael R. Jewett[1] and James J. Kells[2], Departments of Entomology[1] and Crop & Soil Sciences[2], Michigan State University, East Lansing, MI 48824

D183 Characterization of Cry34Ab1/Cry35Ab1: evaluating fitness effects on corn rootworm larvae during exposure to roots.
Steve Lefko and Rachel Binning, 7250 NW 62nd Ave, Pioneer Hi-Bred, Johnston, IA 50313

D184 News from the western front: the soybean aphid in Nebraska.
Thomas E. Hunt, Gerald W. Echtenkamp, Jarvi J. Keith, Jon E. Scott, William L. Kranz and Charles A. Shapiro, Haskell Agricultural Laboratory, 57905 866 Road, University of Nebraska, Concord, NE 68728

D185 Increasing alfalfa quality and yield by managing insects on re-growth following cutting.
Gail G. Stratman, Robert S. Perry, Howard L. Guscar, Brent A. Neuberger, and Robert S. Hooten, 4615 NW 86th Place, FMC Ag Products, Kansas City, MO 64154

D186 Field investigations into the dose of Cry34/35Ab1 rootworm-protected corn.
Nicholas P. Storer, Jon M. Babcock, Jeff M. Edwards and James W. Bing, 301 Campus Drive, Dow AgroSciences, Huxley, IA 40124

D187 Western corn rootworm larval movement between transgenic (Cry3Bb1) corn, non-transgenic corn, and weeds.
Ted A. Wilson and Bruce E. Hibbard, 205 Curtis Hall, University of Missouri, Columbia, MO, 65211

D188 An introduction to the YieldGard® plus corn insect resistance management (IRM) plan.
Todd A. DeGooyer, 800 N Lindbergh, Mailzone C3NE, Monsanto Company, St. Louis, MO 63167 and Robert J. Starke, Mailzone C3NE, 800 N. Lindbergh, Monsanto, St. Louis, MO 63167

D189 Yield and root protection of YieldGard® rootworm as compared to conventional rootworm control methods.
Robert J. Starke and Todd A. DeGooyer, Mailzone C3NE, 800 N Lindbergh, Monsanto Company, St. Louis, MO 63167

D190 Efficacy of Cry34/35Ab1 event DAS-59122-7 against corn rootworm (Coleoptera:Chrysomelidae).
James W. Bing, 301 Campus Dr., Mycogen Seeds, Huxley, IA, 50124, Jon M. Babcock and Jeff M. Edwards, 1349 Moingona Rd., Dow AgroSciences, Boone, IA 50036, Paula Davis, Laura Higgins, Mel Peters and Alejandra Pascual, 7100 N.W. 62nd Ave., Pioneer, Johnston, IA 50131

D191 IRM science plan for DAS-59122-7 rootworm-protected corn; a novel corn rootworm plant-incorporated protectant.
Timothy M. Nowatzki, Steve Lefko and Elizabeth D. Owens, 7250 NW 62nd Ave., P.O. Box 552, Pioneer Hi-Bred International, Inc., Johnston, IA 50131-0552

D192 Evaluation of thiamethoxam is a protectant of stored seed corn.
Franklin H. Arthur, 1515 College Avenue, GMPRC, Manhattan, KS 66502, Gerald Wilde and Bisong Yue, Department of Entomology, Kansas State University, Manhattan, KS 66502

D193 Greenbug-resistant sorghum: an investigation of the physiological mechanisms.
Lisa D. Franzen, Shauna L. Bose, Tiffany M. Heng-Moss, Tulio B. Macedo and Leon G. Higley, 202 Plant Industry Building, University of Nebraska-Lincoln, Lincoln, NE 68583-0816

D194 Leafhopper and flea beetle populations in traditional and novel varieties of tall fescue.
Wayne C. Bailey, Robert L. Kallenbach, Thomas L. Clark and Clinton G. Meinhardt, 1-87 Agriculture Building, University of Missouri, Columbia, MO 65211

D195 Response by western corn rootworm (Coleoptera: Chrysomelidae) and southwestern corn borer (Lepidoptera: Crambidae) to YieldGard® Rootworm, YieldGard® Plus, and Poncho 1250 seed treatment and implications of IRM for MON863 on adoption of rootworm protected corn.
Robert D. Bowling, 310 East First Street, Texas A&M, Dumas, TX 79029, Phillip E. Sloderbeck, Southwest Area Extension Office, 4500 E. Mary Street, Kansas State University, Garden City, KS 67846 and Roxanne A. Shufran, 6500 Amarillo Blvd. West, Texas Agricultural Experiment Station, Amarillo, TX 79106-1796

D196 Vertical distribution of *Dectes* stem borer infestations in soybean.
Lawrent L. Buschman and Phillip E. Sloderbeck, 4500 E. Mary St., Kansas State University, Garden City, KS 67846

D197 Soybean aphid (*Aphis glycines*) in South Dakota: impact on soybean (*Glycine max*) development and yield.
Eric Beckendorf, 230 Ag. Hall, Department of Plant Science, South Dakota State University, Brookings, SD 57007, Walt Riedell, USDA-ARS Northern Grains Insects Research Laboratory, Brookings, SD 57007 and Michael A. Catangui, 230 Ag. Hall, Department of Plant Science, South Dakota State University, Brookings, SD 57007

D198 Relative abundance and foraging behavior of subterranean termites in date palm plantations of the United Arab Emirates.
Walid A. Kaakeh, Department of Aridland Agriculture , College of Food Systems, P. O. Box 17555, United Arab Emirates University, Al-Ain, UAE

D199 Lab rearing techniques for blue bottle flies (*Calliphora* sp.) at the North Central Regional Plant Introduction Station.
Steve J. Hanlin and Sharon McClurg, State Ave. & Mortensen Rd., Ames, IA 50011

March 30, 2004
Tuesday Afternoon

Award Luncheon
12:00 – 1:15 p.m.
Salon IA & IB
Rob Wiedenmann, Master of Ceremonies

March 30, 2004
Tuesday Afternoon

Student Affairs Symposium
Entomology in Prairie Ecosystems
1:30 – 5:00 p.m.
Pavilion I

Organizers and Moderators:
Jonathan G. Lundgren, Center for Economic Entomology, Illinois Natural History Survey Champaign, IL, 61820
Michal Roberts, Department of Entomology Kansas State University, Manhattan, KS 66506

1:30	200	Diversity and ecology of the endophytic insect communities of two prairie perennials (Asteraceae: Silphium). **John F. Tooker**, 501 Ag Sciences & Industries Building, Department of Entomology, The Pennsylvania State University, University Park, PA 16802-3508
1:55	201	Mycorrhizal symbiosis and grasshopper development on tallgrass prairie plants. **Abigail Rogers Kula**, David Hartnett and Gail Wilson, Division of Biology, 232 Ackert Hall, Kansas State University, Manhattan, KS 66506
2:20	202	Macroinvertebrate communities and ecosystem function in backwater sloughs of the central Platte River: influences of hydrologic disturbance gradients and restoration activities. **Clinton K. Meyer** and Matt R. Whiles, Department of Zoology, Southern Illinois University, Carbondale, IL 62901-6501, Beth S. Goldowitz, Platte River Whooping Crane Maintenance Trust, Wood River, NE 68883 and Sara G. Baer, Department of Forestry, Southern Illinois University, Carbondale, IL 62901
2:45	203	Ants in the tallgrass prairie ecosystem. **James C. Trager**, P. O. Box 38, Shaw Nature Reserve, Gray Summit, MO 63039
3:10		**BREAK**
3:25	204	Seasonality and adult habitat use by four *Diabrotica* species at prairie-corn interfaces. **Laura A. Campbell** and Lance J. Meinke, 202 Plant Industry, University of Nebraska-Lincoln, Lincoln, NE 68583-0816

3:50 205 Heterogeneity and diversity in grassland ecosystems: implications for insect diversity.
Phil Fay, 5013 Miller Trunk Highway, Natural Resources Research Institute, Duluth, MN 55811, Anthony Joern, University of Nebraska-Lincoln, School of Biological Sciences, Lincoln, NE 68588 and Jayne L. Jonas, University of Nebraska- Lincoln, School of Biological Sciences, Lincoln, NE 68588

4:15 206 Aphids of the prairie: can they survive current management practices?
David Voegtlin, Illinois Natural History Survey, 607 E. Peabody Drive, Center for Economic Entomology, Champaign, IL 61820

March 30, 2004
Tuesday Afternoon

NCR-125 Symposium
Conserving Natural Enemies in Urban and Agricultural Landscapes
1:30 – 5:30 p.m.
Salon II

Organizers and Moderators:
Ashley B. Bennett, Department of Entomology
University of Illinois, Urbana, IL 61801
Eric J. Rebek, Department of Entomology
Purdue University, West Lafayette, IN 47907-2089

1:30 207 Conservation biological control in ornamental landscapes.
Ashley B. Bennett and Larry M. Hanks, 505 S. Goodwin, 320 Morrill Hall, University of Illinois, Urbana, IL 61801 and Cliff S. Sadof, 1158 Smith Hall, Purdue University, West Lafayette, IN

1:55	208	Flowering resource plants affect natural enemy abundance and euonymus scale population dynamics. **Eric J. Rebek** and Cliff S. Sadof, Department of Entomology, 901 W. State St., Purdue University, West Lafayette, IN and Lawrence M. Hanks, Department of Entomology, 320 Morrill Hall, 505 S. Goodwin Avenue, University of Illinois at Urbana-Champaign, Urbana, IL
2:20	209	Floral nectar in agroecosystems-evaluating the response of parasitoids. **Jana C. Lee** and George E. Heimpel, 219 Hodson Hall, 1980 Folwell Ave., University of Minnesota, Saint Paul, MN 55108
2:45	210	Ecology of conservation biological control in heterogeneous vegetable landscapes. **Janet L. Lawrence** and Casey W. Hoy, 1680 Madsion Ave, Department of Entomology, Thorne Hall, The Ohio State University/OARDC, Wooster, OH 44691
3:10		**BREAK**
3:25	211	Enhancing the biocontrol effectiveness of generalist arthropod predators by manipulating the detrital food web. **David H. Wise**, Dept of Entomology, S-225 Ag Sci Bldg - North, University of Kentucky, Lexington, KY 40546-0091
3:50	212	Compatibility of calico scale management practices with the conservation of natural enemies in the tree canopy. **Jamee L. Hubbard** and Daniel A. Potter, Department of Entomology, S-225 Agriculture Science Center North, University of Kentucky, Lexington, KY 40546-0091

4:15 213 Habitat manipulations in ornamental systems: what happens to the predators and pests?
Paula M. Shrewsbury, 4112 Plant Science Bld., Department of Entomology, University of Maryland, College Park, MD 20742

4:40 214 Can HIPPOs aid conservation biological control of arthropods?
David G. James, 24106 N. Bunn Road, Washington State University, Prosser, WA 99350

5:05 215 Conserving natural enemies in Michigan blueberry fields using multifunctional cover crops.
Matthew E. O'Neal, 202 CIPS, Michigan State University, East Lansing, MI, 48824, Erica Zontek, 1200 Academy Street, Kalamazoo College, Kalamazoo, MI, 49006, Zsofia Szendrei, Douglas A. Landis and Rufus Isaacs, 202 CIPS, Michigan State University, East Lansing, MI, 48824

March 30, 2004
Tuesday Evening
6:00 – 7:00 p.m.
Salon II

Linnaean Games Champion v. Old Masters

Moderator:
W. Wyatt Hoback, Gamesmaster
University of Nebraska at Kearney

ESA Student Award Ceremony
Moderator:
Mark A. Boetel, Chair
North Dakota State University

March 30, 2004
Tuesday Evening
7:00 – 9:00 p.m.
Salon IA & IB

ESA-North Central Branch Mixer

March 31, 2004
Wednesday Morning

Continental Breakfast
7:00 – 8:00 a.m.

Wednesday Morning
8:00 – 9:00 a.m.
Salon II

Final ESA-NCB Business Meeting
Rob Wiedenmann
ESA-NCB President

March 31, 2004
Wednesday Morning

Symposium
Evaluating the Risks of Genetically Modified Plants to Natural Enemies: Learning from Transgenic Bt Crops
9:00 a.m. – 12:15 p.m.
Pavilion I

Organizers and Moderators:
Jian J. Duan, Monsanto Company
St. Louis, MO 63167
Jonathan G. Lundgren, Center for Economic Entomology, Illinois Natural History Survey
Champaign, IL 61820

9:00	216	Introduction. **Jian J. Duan**, 800 North Lindbergh, Monsanto Company, St. Louis, MO, 63167
9:05	217	Regulatory procedures and non-target organism risk assessment for plant-incorporated protectants in genetically modified crops. **Mike Mendelsohn** and Zigfridais Vaituzis, US EPA (7511C), 1200 Pennsylvania Ave, NW, Washington, DC 20460 and Robyn Rose, USDA/APHIS
9:30	218	Quantitative approaches to NTO risk assessment for GM crops. **Jeffrey Wolt**, Biosafety Institute for Genetically Modified Agricultural Products, Iowa State University, Ames, IA 50011
9:55	219	The role and design of laboratory studies in evaluating the effect of biotechnology-derived insecticidal products on natural enemies. **Jian J. Duan**, 800 North Lindgbergh, Monsanto Company, St. Louis, MO 63167
10:20		**BREAK**
10:30	220	Assessing the risk of bitrophic interactions between Bt crops and natural enemies: a case study involving pollen-feeding by *Coleomegilla maculate.* **Jonathan G. Lundgren** and Robert N. Wiedenmann, 607 East Peabody Drive, Center for Economic Entomology, Illinois Natural History Survey, Champaign, IL 61820

10:55 221 Interactions of Bt crops with parasitoids on non-target, secondary pests.
Julio Bernal, Department of Entomology, Texas A&M University, College Station, TX 77843

11:20 222 What about natural enemies in Bt-transgenic cotton fields?
Jorge B. Torres and John R. Ruberson, Rainwater Road, University of Georgia, Tifton, GA 31794

11:45 223 Effect of YieldGard Rootworm on nontarget organisms: another perspective.
Gerald E. Wilde, Mohammad Al-Deeb and Aqeel Ahmad, 123 West Waters Hall, Kansas State University, Manhattan, KS 66502

March 31, 2004
Wednesday Morning

Symposium
Population Genetics
9:00 a.m. – 12:15 p.m.
Salon II

Organizer and Moderator:
Brandon J. Schemerhorn, USDA-ARS
Purdue University, West Lafayette, IN 47905

9:00 224 Populations of *Anopheles funestus* chromosomal forms.
A. P. Michel and O. Grushko, Center for Tropical Disease Research and Training, Department of Biology, University of Notre Dame, Notre Dame, IN 46556, W. M. Guelbeogo, N. Sagnon and C. Costantini, CNRFP, Ouagadougou, Burkina Faso, N. J. Besanksy, Center for Tropical Disease Research and Training, Department of Biology, University of Notre Dame, Notre Dame, IN 46556

9:25 225 Revealing lineages of Hessian fly populations in the United States and worldwide.
Alisha J. Johnson, Brandon J. Schemerhorn and Richard H. Shukle, 170 South University Street, WSLR 201, USDA-ARS/Purdue University, West Lafayette , IN 47905

9:50 226 Searching for genome regions involved in incipient speciation in the African Malaria Mosquito, *Anopheles gambiae*.
Aram D. Stump and Nora J. Besansky, P.O. Box 369, University of Notre Dame, Notre Dame, IN 46656

10:15 227 Darwinian natural selection for orange bioluminescent color in the Jamican click beetle *Pyrophorus plagiophthalamus*.
Sebastian Velez and Jeffrey L. Feder, 107 Galvin Life Sciences, University of Notre Dame, Notre Dame, IN 46556

10:40 **BREAK**

10:55 228 Examining the molecular basis of abdominal pigmentation variation in the South American *Drosophila cardini* subgroup.
Daniela C. De Toni, 004 Galvin Life Science University of Notre Dame, University of Notre Dame, Notre Dame, IN 46556

11:20	229	Condition-dependent traits and the capture of genetic variance in male. **LaRoy Brandt**, 3201 West 16th, Yeater Building, State Fair Community College, Sedalia, MO 65301 and Michael Greenfield, Department of Entomology, University of Kansas, Lawrence, KS 66045
11:45	230	The role of host associated diapause in sympatric race formation of rhagoletis pomonella (diptera:tephritidae) **Hattie R. Dambroski** and Jeffrey L. Feder, University of Notre Dame, Notre Dame, IN 46556

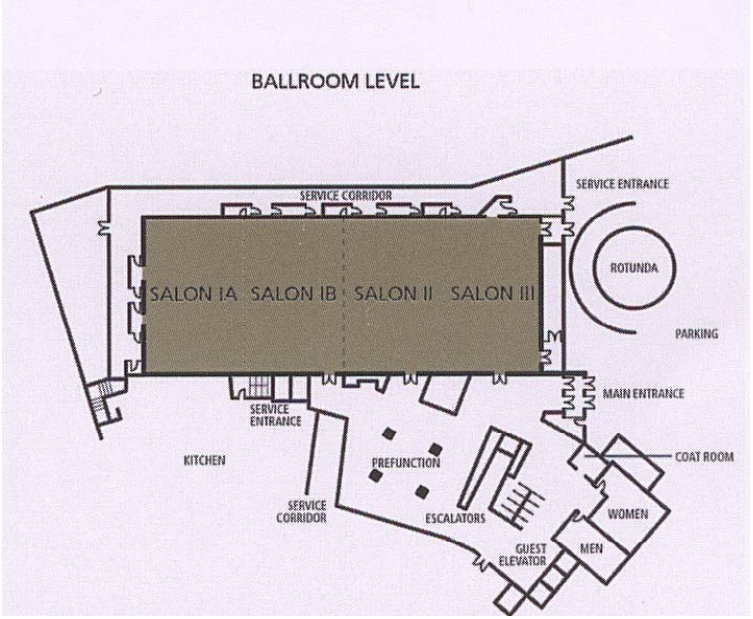
March 31, 2004
Wednesday Afternoon

NCB Executive Committee Meeting
1:00 – 3:00 p.m.
Conference Suite

Author Index

Taxonomic Index

Keyword Index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PREFUNCTION
COAT ROOM
SERVICE CORRIDOR
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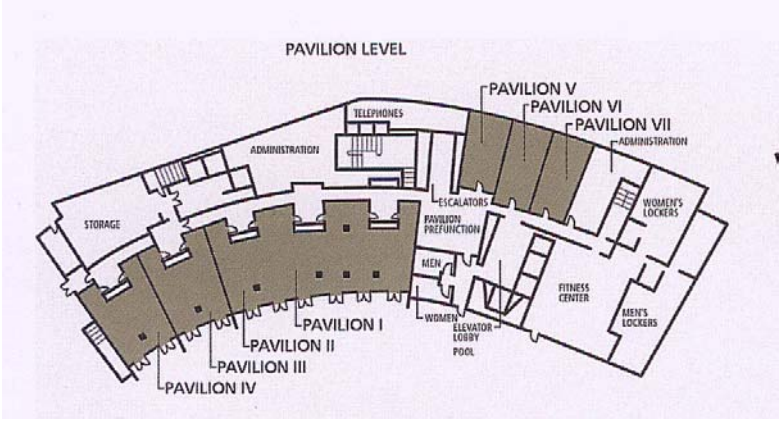
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STORAGE
PAVILION PREFUNCTION
MEN
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WOMEN
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POOL
PAVILION I
PAVILION II
PAVILION III
PAVILION IV