ESA P-IE Section

Business & Networking Session

ENTOMOLOGICAL SOCIETY OF AMERICA

Plant–Insect Ecosystems Section

ESA / ICE, Orlando, Florida, September 25, 2016

Agenda

- **Welcome, P-IE President, Fred Musser**
- Award presentation
- ESA President's Comments
- Treasurer's Report
- Committee Member Recognition
- P-IE Awards
- New P-IE Initiative: report on Pollination Initiative
- Symposium: Pollinator Issues: Interactions with the Public
- Networking, Refreshments & Prize Drawings

Entomological Society of America Sections

Plant – Insect Ecosystems (P-IE) ≈ 40%

Physiology, Biochemistry and Toxicology (PBT)

Medical, Urban and Veterinary Entomology (MUVE)

Systematics, Evolution and Biodiversity (SysEB)

2016 Activities

- ICE Planning
- P-IE Pollinator Initiative
- P-IE Awards
- Newsletters
- Volunteers sought
  - Elected positions – GC
  - ESA Committees, Editorial Boards
  - Judges/Moderators
- Voice your opinions – P-IE related science policy issues

Member Feedback Session – Friday 30 September, 07:00

With light breakfast; Convention Center, Room W333

Agenda

- Welcome
- **Award presentation – Mary Gardiner**
- ESA President's Comments
- Treasurer's Report
- Committee Member Recognition
- P-IE Awards
- New P-IE Initiative: report on Pollination Initiative
- Symposium: Pollinator Issues: Interactions with the Public
- Networking, Refreshments & Prize Drawings

P-IE Master's Student Achievement in Entomology Award

MaLisa R. Spring

Department of Entomology,
The Ohio State University

Advisor – Mary Gardiner

Agenda

- Welcome
- Award presentation
- **ESA President's Comments – May Berenbaum**
- Treasurer's Report
- Committee Member Recognition
- P-IE Awards
- New P-IE Initiative: report on Pollination Initiative
- Symposium: Pollinator Issues: Interactions with the Public
- Networking, Refreshments & Prize Drawings


CERTIFICATION | ENTOMOLOGY TODAY | ENTOMOLOGICAL FOUNDATION
Entomological Society of America
Sharing Insect Science Globally
ABOUT
RESOURCES
EVENTS
CAREER CENTER
PUBLICATIONS
POLI
HOME / ABOUT / SECTIONS
Plant-Insect Ecosystems
This Section deals with insect interactions with plants.
Plant-Insect Ecosystems Section
Topics include behavioral, ecological, and evolutionary relationships in natural landscapes, as well as integrated pest management (IPM) in agriculture, horticulture, forests, and lawn and garden. Aspects of crop protection, host-plant response, plant pathology/vectors, pollination, biological control, microbial control, and others are relevant.

…the largest section of ESA with approximately 3000 member

http://chocolate.wiki

P-IE Networking Session at ICE

The P-IE networking session will be held on Sunday afternoon, September 25, immediately prior to the official beginning of the International Congress of Entomology. The session will begin at 12:30 PM in the Convention Center West Hall F1 and include a brief business meeting, an update on our section's pollinator initiative, award presentations, a symposium entitled "Pollinator Issues: Interactions with the Public", and, of course, PIE! We will conclude by 3:30 PM so you will have time to get to the opening ESA plenary session at 4:00 PM.

Our symposium speakers are:

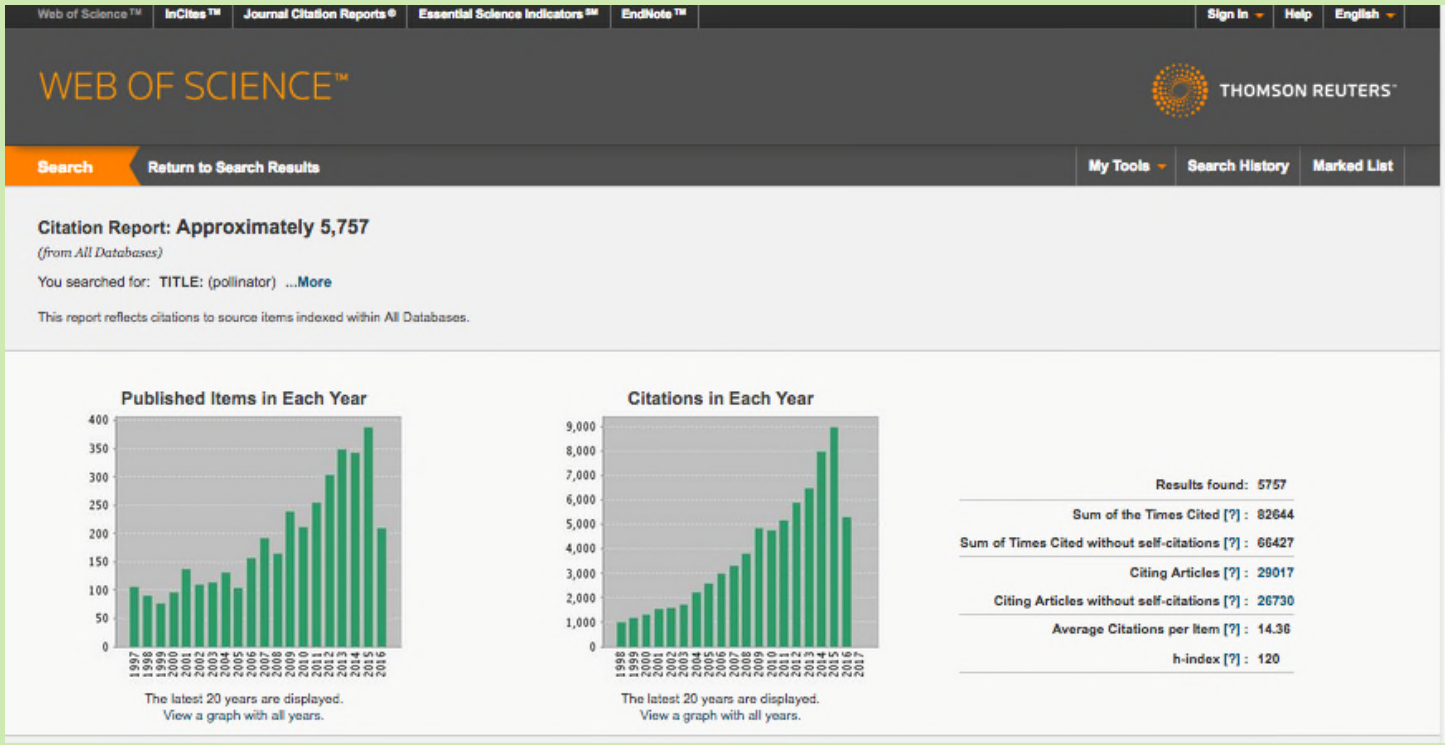
Dr. Jennifer Saunders, Acting Senior Entomologist, Office of Pesticide Programs, Environmental Protection Agency presenting "Pesticides, Pollinators, Policy, and the Public: Balancing Stakeholder Perspectives and Ensuring Scientific Integrity".

Dr. Jeffrey Harris, Extension Professor in Apiculture, Mississippi State University presenting "Finding Common Ground Among People with Different Perspectives of the Pesticide-Pollinator Conflict"

Dr. Art Schaafsma, Professor in Integrated Pest Management, University of Guelph presenting "Neonic Bans: North American Beach Head".

There will be a question and answer period following the talks, so join us at the networking session and start your week with some thought-provoking presentations followed by a discussion, networking, and refreshments.

In the past 20 years, publications per year on pollinators have quadrupled…



Sort by: Times Cited -- highest to lowest

Page 1 of 576

Use the checkboxes to remove individual items from this Citation Report

or restrict to items published between 1864 and 2017 Go

	2013	2014	2015	2016	2017	Total	Average Citations per Year
	6501	8002	8985	5344	0	82644	1101.92
1. **Importance of pollinators in changing landscapes for world crops** By: Klein, Alexandra-Maria; Vaissiere, Bernard E.; Cane, James H.; et al. PROCEEDINGS OF THE ROYAL SOCIETY B-BIOLOGICAL SCIENCES Volume: 274 Issue: 1608 Pages: 303-313 Published: FEB 7 2007	153	171	196	99	0	1029	102.90
2. **Parallel declines in pollinators and insect-pollinated plants in Britain and the Netherlands** By: Biesmeijer, J. C.; Roberts, S. P. M.; Reemer, M.; et al. SCIENCE Volume: 313 Issue: 5785 Pages: 351-354 Published: JUL 21 2006	115	139	132	62	0	871	79.18
3. **Global pollinator declines: trends, impacts and drivers** By: Potts, Simon G.; Biesmeijer, Jacobus C.; Kremen, Claire; et al. TRENDS IN ECOLOGY & EVOLUTION Volume: 25 Issue: 6 Pages: 345-353 Published: JUN 2010	133	187	223	132	0	823	117.57
4. **Endangered mutualisms: The conservation of plant-pollinator interactions** By: Kearns, CA; Inouye, DW; Waser, NM ANNUAL REVIEW OF ECOLOGY AND SYSTEMATICS Volume: 29 Pages: 83-112 Published: 1998	60	71	60	38	0	815	42.89
5. **Scale-dependent effects of landscape context on three pollinator guilds** By: Steffan-Dewenter, I; Munzenberg, U; Burger, C; et al. ECOLOGY Volume: 83 Issue: 5 Pages: 1421-1432 Published: MAY 2002	51	61	48	25	0	484	32.27
6. **Economic valuation of the vulnerability of world agriculture confronted with pollinator decline** By: Gallai, Nicola; Salles, Jean-Michel; Settele, Josef; et al. ECOLOGICAL ECONOMICS Volume: 68 Issue: 3 Pages: 810-821 Published: JAN 15 2009	77	88	113	65	0	472	59.00
7. **Pollinator preference and the evolution of floral traits in monkeyflowers (Mimulus)** By: Schemske, DW; Bradshaw, HD PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA Volume: 96 Issue: 21 Pages: 11910-11915 Published: OCT 12 1999	38	37	29	22	0	455	25.28
8. **The formation and function of plant volatiles: perfumes for pollinator attraction and defense** By: Pichersky, E; Gershenzon, J CURRENT OPINION IN PLANT BIOLOGY Volume: 5 Issue: 3 Pages: 237-243 Published: JUN 2002	31	50	37	26	0	443	29.53
9. **POLLINATOR LIMITATION OF PLANT REPRODUCTIVE EFFORT** By: BIERZYCHUDEK, P AMERICAN NATURALIST Volume: 117 Issue: 5 Pages: 838-840 Published: 1981	8	8	10	4	0	437	12.14
10. **EUGLOSSINE BEES AS LONG-DISTANCE POLLINATORS OF TROPICAL PLANTS** By: JANZEN, DH SCIENCE Volume: 171 Issue: 3967 Pages: 203-205 Published: 1971	23	8	20	12	0	435	9.46

Web of Science™ | InCites™ | Journal Citation Reports® | Essential Science Indicators℠ | EndNote™ | Sign In | Help | English

WEB OF SCIENCE™

THOMSON REUTERS

Search | Return to Search Results | My Tools | Search History | Marked List

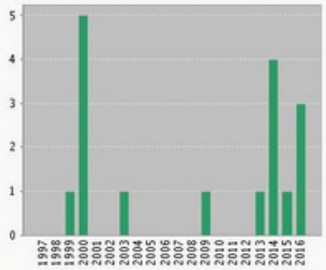
Citation Report: 22

(from All Databases)

You searched for: **TITLE:** (pollinator) *AND* **PUBLICATION NAME:** (Environmental Entomology) ...More

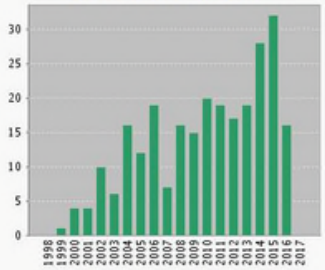
This report reflects citations to source items indexed within All Databases.

Published Items in Each Year



The latest 20 years are displayed.
View a graph with all years.

Citations in Each Year



The latest 20 years are displayed.
View a graph with all years.

Results found:	22
Sum of the Times Cited [?] :	277
Sum of Times Cited without self-citations [?] :	272
Citing Articles [?] :	236
Citing Articles without self-citations [?] :	231
Average Citations per Item [?] :	12.59
h-index [?] :	9

New Subject Section in *Environmental Entomology*

Pollinator health has been a major concern for over a decade, with ramifications from honey production to widespread agricultural production. Significant federal and industry funding supports research into challenges facing pollinators; a number of tenure-track positions have been created in universities across the nation. Within our Society, PI-E Section has an initiative on pollinators. The field is expanding, but researchers in these areas have no single "go to" place to publish their work.

Environmental Entomology, a major international entomological journal, is initiating a new subject section, "Pollinator Ecology and Management," to address this need. (For more detail, see https://ee.oxfordjournals.org/content/45/3/549.) The first issue to include this section will include invited Forum and Review papers as well as a number of submitted contributions. I invite you to be among the early contributors if you have appropriate manuscripts. The scope of the section will include papers not only on honey bees but also on the numerous other pollinators, their biology, their interactions with plants, challenges to their success and even survival, and changes to management approaches within the context of the environment that conserve or improve pollinators' ability to fulfill their expected role. Drs. Gloria DeGrandi-Hoffman and Theresa Pitts Singer have graciously agreed to serve as Subject Editors for this new area. We look forward to your contributions, and your support of our Society journals.

3 Park Place, Suite 307
Annapolis, MD 21401-3722 USA

Phone: 301-731-4535
Fax: 301-731-4538

esa@entsoc.org
www.entsoc.org

ESA Position Statement on Pollinator Health

Approved on July 24, 2015
Valid through July 24, 2019

Pollinators are vital components of natural and agricultural ecosystems, contributing to the fruit and seed production of nearly 90% of flowering plant species[1] including almost three-quarters of our major agricultural crops[2]. Pollinated vegetable, fruit, nut and seed crops have high economic and nutritional value[3], with pollination services providing $201 billion in economic value to global agriculture[4]. Managed honey bees (*Apis mellifera*), which are often transported large distances to pollinate large monocropped agricultural landscapes, contribute $17.1 billion to crop and seed production in the U.S. alone, while non-*Apis* managed and wild bees contribute additional billions of dollars in pollination services[5].

Evenhuis NL (2002). Pieza, a new genus of microbombyliids from the New World (Diptera: Mythicomyiidae). Zootaxa, 36, 28. (*Pieza pi*)

http://www.mapress.com/zootaxa/list/list2002.html

And if you're looking for a mascot, check out the microbombyliids…

Agenda

- Welcome
- ESA Presidential Comments
- **Treasurer's Report – P-IE Treasurer, Patrick Moran**
- Committee Member Recognition
- P-IE Awards
- New P-IE Initiative: report on Pollination Initiative
- Symposium: Pollinator Issues: Interactions with the Public
- Networking, Refreshments & Prize Drawings

Treasurer's Report

- **Total funds available in 2015: <u>$42,098</u>**

- **Carryover from 2015 to 2016 will be 25% less than prior years-due to new spending initiatives in 2014.**

***Based on budgeted total spending in 2016**

Category	2014	2015	2016
Carryover from Prior Year	$26,331	$24,098	$19,266
Allocation from ESA	$17,200	$18,000	$18,400
Grants	$4,000 (Dow Awards)	0	0
Total Available Funds	$47,531	$42,098	$37,666
Total Spending	$23,433	$22,833	*$13,923
Total Remaining Balance	$24,098	$19,266	*$23,743

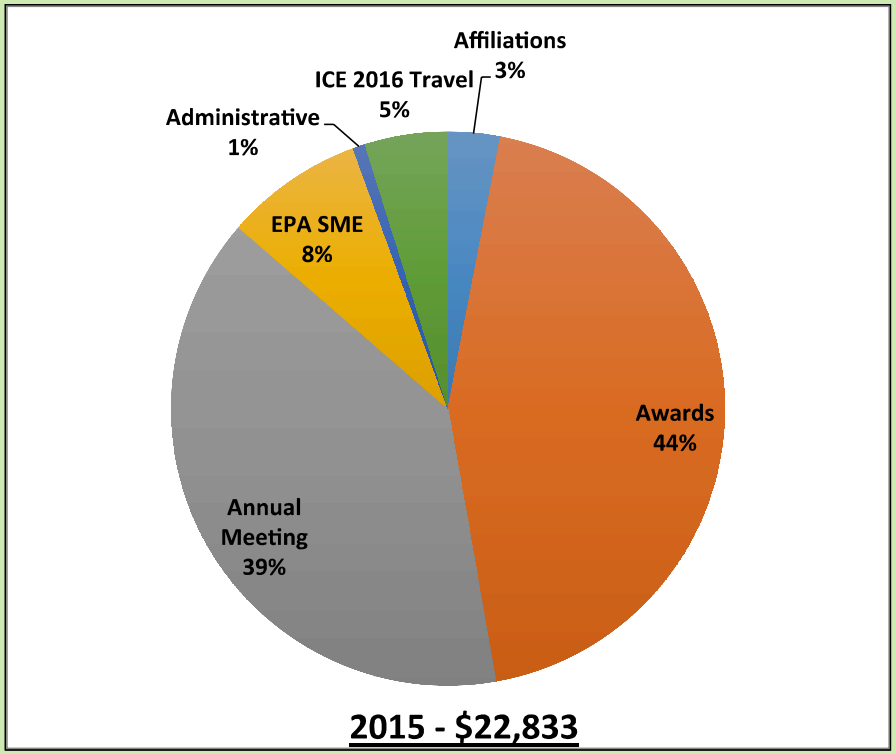
CHANGES IN BUDGETING OF P-IE FUNDS IN 2016

- **Overall expected total spending down by 39% in 2016**
  - Just one group affiliation now-Plant Management Network (saved $250).
  - No longer supporting travel costs for EPA SME (saved $686).
  - Only one Undergraduate Achievement Award in 2016 (saved $5,550).
  - Graduate Student Achievement and Starks Award: Similar to 2015 ($310 more).
  - Lifetime Achievement Award: Similar to 2015 ($300 more).
  - ICE 2016 Expenses ($7,355)-expected to be 22% less than 2015 AM (saved $2,084). Even though support for Networking Session speakers is $795 higher.
  - Administrative expenses reduced by $150 (only $25 in 2016).

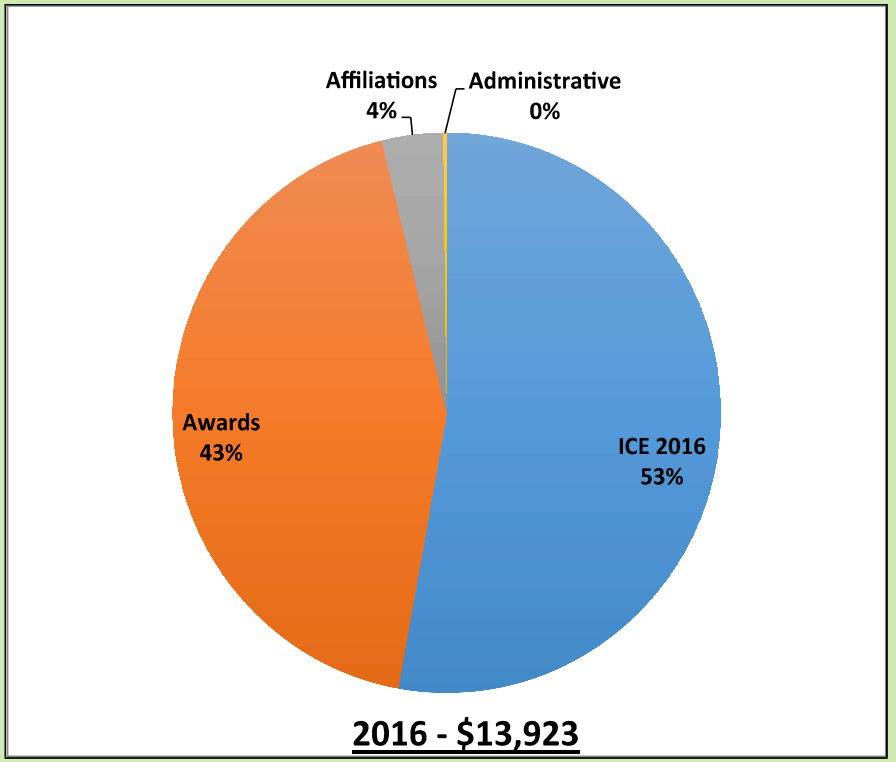
2016 Expenses Breakdown

Description	2016 (To Date) Expenditures	Projected Total for 2016
Travel – EPA SME	$0	$0
PIE Affiliations	$500	$500
PIE Administrative Expenses	$25	$25
Student Awards (Undergraduate and M.S. Graduate Achievement)	$4,248	$4,248
Professional Awards (Lifetime Achievement Award)	$1,795	$1,795
ICE 2016: P-IE Networking Session and Listening Session (Catering, Speakers Registration, Prizes)	$2,705	$7,355
TOTAL	$9,273	$13,923.00

Budget Proportions-2015 and 2016



2015 - $22,833



2016 - $13,923

P-IE Budget Outlook for 2017

- Expected carryover funds to 2017: **$23,743** (23% more than 2015 to 2016).
- Expected allocation from ESA Headquarters: About **$18,000.**

- Total expected funds available for 2017: **$41,743** (11% more than 2016)
  - Compare to 11% drop, 2015 to 2016

- Spending on awards likely similar in 2017 as in 2016.

- Spending on 2017 AM possibly less than 2016 ICE.

- **New spending on P-IE Pollinator Initiative planned.**

Questions? Contact Patrick Moran, P-IE Treasurer: **patrickmoran84@yahoo.com**
Note: P-IE will elect a new Treasurer in 2017 to begin term at the end of the AM

Agenda

- Welcome
- ESA Presidential Comments
- Treasurer's Report
- **Committee Member Recognition – Fred Musser**
- P-IE Awards
- New P-IE Initiative: report on Pollination Initiative
- Symposium: Pollinator Issues: Interactions with the Public
- Networking, Refreshments & Prize Drawings

2016 P-IE Governing Council

President – Fred Musser

Vice President – Melissa Willrich Siebert

Vice President Elect – Mark Wright

Secretary – Andrew Michel

Treasurer – Patrick Moran

Governing Board Rep – Sujaya Rao

Student representative – Lina Bernaola

Past President – Sujaya Rao

New P-IE Governing Council members

Vice President Elect: Diane Alston

Secretary: Rebecca Schmidt-Jeffris

Student representative: Carlos Esquivel

2016 P-IE Awards Committee

➢ Chris Ranger	Govt Agency Rep	2014-2016
➢ Chris Sansone	Industry Rep	2015-2017
➢ Joe Louis	University Rep	2016-2018

P-IE Awards Committee

Chris Ranger, Chris Sansone, Joe Louis

- **P-IE Undergraduate Student Achievement in Entomology Award**
- **Kenneth and Barbara Starks Plant Resistance to Insects Graduate Student Award**
- **Master's Student Achievement in Entomology Award**
- **P-IE Lifetime Achievement Award in Entomology**
- **P-IE Integrated Pest Management Award *Sponsored by Dow AgroSciences***

2016 P-IE Nominations Committee

- Cheri Abraham, Southwestern Branch (2015-2018)
- Silvia Rondon, Pacific Branch (2015-2018)
- Joseph Patt, Southeastern Branch (2013-2016)
- Mao Chen, International Branch (2015-2018)
- Rob Morrison, Eastern Branch (2014-2017)
- Bruce Hibbard, North Central Branch (2014-2017)
- Sujaya Rao, *ex offic*io, P-IE Gov. Council (2015-2016)

P-IE Nomination Committee

- Reached out to P-IE Membership to fill P-IE Governing Council.

  Received 2 VP-Elect Nominations: Diane Alston. Elected.

  Received 5 P-IE Secretary Nominations: Rebecca Schmidt-Jeffris. Elected.

- Fill editorial board representative openings.

  Arthropod Management Tests: Jon Babcock. Re-elected.

  Journal of Insect Science: Sanford Eigenbrode. Re-elected.

  Journal of IPM: Paula Shrewsbury. Re-elected.

P-IE Reps - ESA Standing Committees

- Awards and Honors – Silvia Rondon (2014-2017)
- Education and Outreach – David Held (2015-2018)
- Membership – Alicia Bray (2015-2018)
- Student Affairs – Lina Bernaola (2014-2016)
- Diversity and Inclusion: Bill Hendrix (2015-2018)
- ESA Science Policy Committee: Cheri Abraham (2015-2018)
- Early Career Professionals Committee: Rebecca Schmidt-Jeffris (2015-2017)

ESA Publications with P-IE Representatives

- Editorial Boards
  - American Entomologist – Peter Asiimwe (2014-2018)
  - Annals of the ESA – Louis Hesler (2016-2019)
  - Arthropod Management Tests - Jon Babcock (2012-2020)*
  - Environmental Entomology – Diane Alston (2014-2018)
  - Journal of Economic Entomology - Jarrad Prasifka (2013-2017)
  - Journal of Insect Science – Sanford Eigenbrode (2014-2020)*
  - Journal of IPM - Paula Shrewsbury (2012-2020)*, Michael Brewer (2013-2017)
  - Journal of Medical Entomology - Aqeel Ahmad (2013-2017)
  - Thomas Say Publications - Janet Knodel (2010-2018)
  - Insect Systematics and Diversity – Scott Bundy (2016-2017)
- Publications Council – Melissa Willrich Siebert (2013-2017)

*2nd term

2017 New P-IE Representatives to ESA

Student Affairs Committee – Carlos Esquivel.

P-IE Nominations Committee, Southeastern Branch Rep – To be named.

P-IE Awards Committee, Government Rep. – To be named.

2017 P-IE governing council

- President: Melissa Willrich Siebert
- Vice-President: Mark G. Wright
- Vice-President elect: Diane Alston
- Secretary: Rebecca Schmidt-Jeffris
- Treasurer: Patrick Moran
- Governing Board Rep: Sujaya Rao
- Student representative: Carlos Esquivel
- Past President: Fred Musser

Many thanks to
P-IE members who served as judges, moderators, and for submitting symposia!

P-IE Committee Members, Reps on Editorial Board Members

Thank YOU!

Special thanks to ESA Staff!

Thanks also to all the student volunteers!

Agenda

- Welcome
- ESA Presidential Comments
- Treasurer's Report
- Committee Member Recognition
- **P-IE Awards – P-IE Vice President, Melissa Willrich Siebert**
- New P-IE Initiative: report on Pollination Initiative
- Symposium: Pollinator Issues: Interactions with the Public
- Networking, Refreshments & Prize Drawings

P-IE Undergraduate Achievement Awards

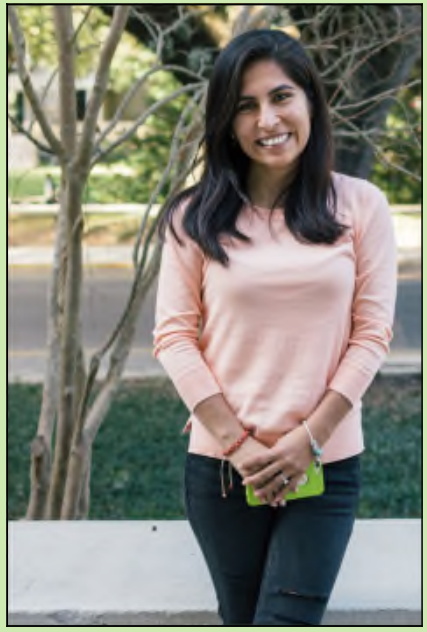
Lidia M. Komondy,
Michigan State University

Kenneth and Barbara Starks Plant Resistance to Insects

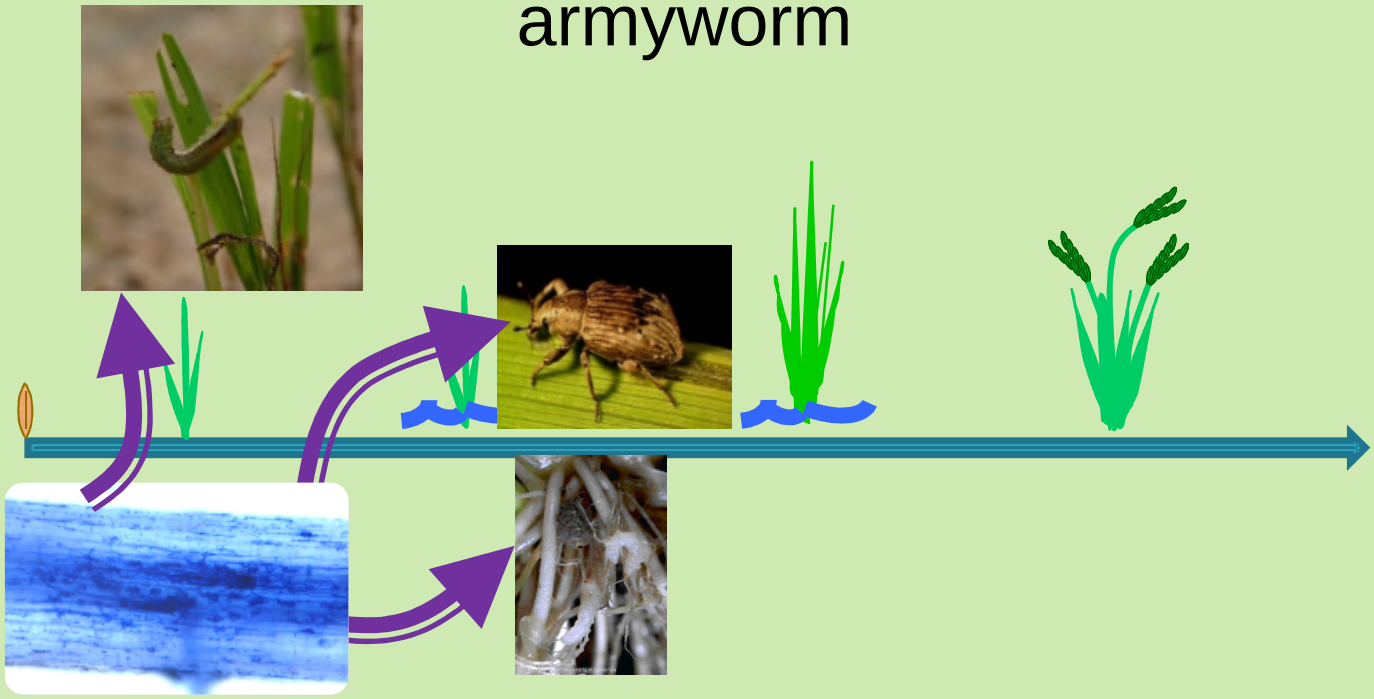
Graduate Student Award

Lina Bernaola
Louisiana State University

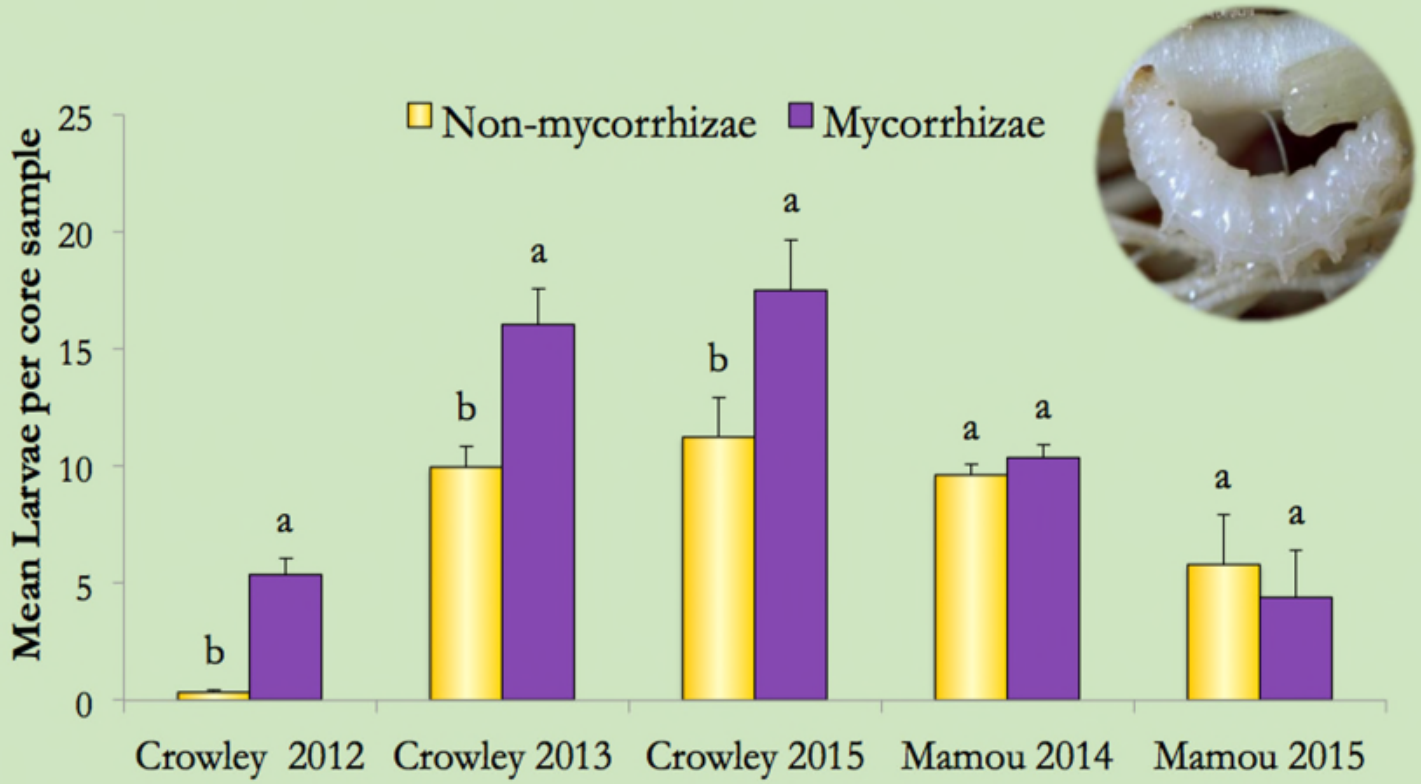
Advisor – Michael Stout



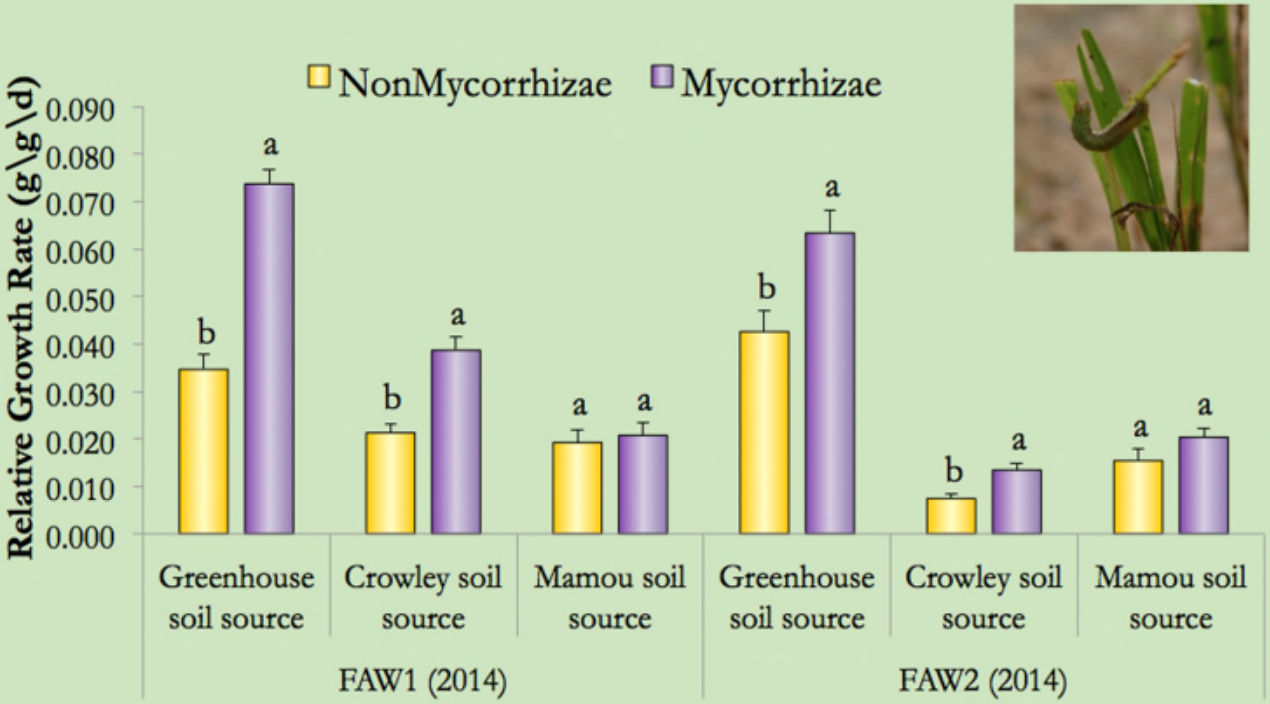
Influence of mycorrhizal colonization on rice water weevil and fall armyworm

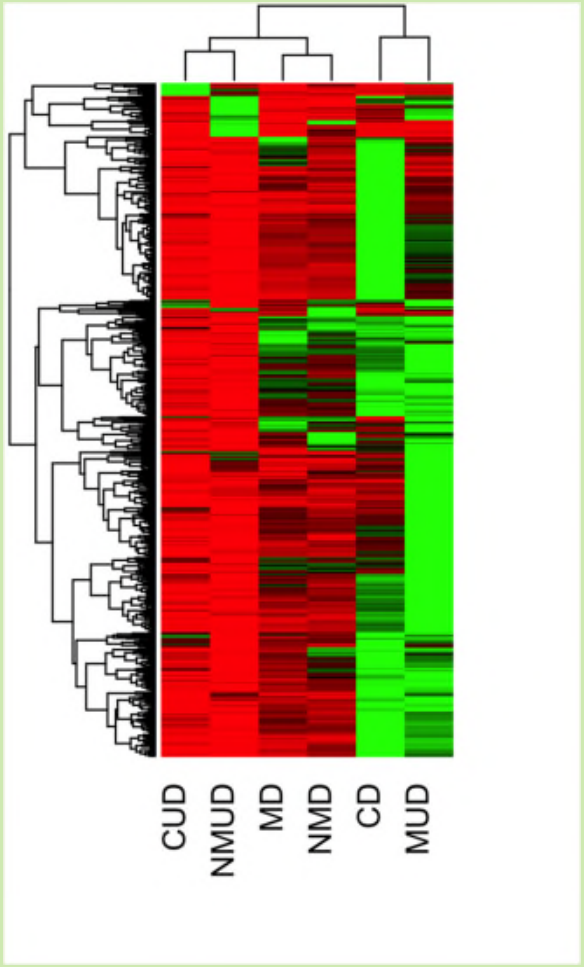


Rice water weevil larval density



FAW Relative Growth Rates





Heatmap showing differentially expressed genes (DEGs) of rice in response to AMF colonization and armyworm feeding under different experimental conditions.
The up-regulated genes and down-regulated genes are represented by green and red color, respectively.

D = damaged; UD = undamaged
M = mycorrhizal; NM = non-mycorrhizal

P-IE Lifetime Achievement Award in Entomology

Dr. William B. Showers

USDA-ARS, and Iowa State University

Introduced by
L. Von Kaster

A Distinguished Career

1958–1961	Plant Pest Inspector, USDA, Lake Alfred, FL & Casa Grande, AZ
1961–1964:	Graduate Research Assistant, University of Arizona and Louisiana State University
1965–1967:	Research Entomologist, USDA–ARS, Baton Rouge, LA
1967–1970:	Research Entomologist, USDA–ARS, Ankeny, IA
1970–1992:	Research Entomologist and Project Leader Biology–Ecology of Corn Insects, USDA–ARS, Corn Insects Research Unit, Ankeny, IA
1974–1978:	Assistant Professor, Entomology, Iowa State University, Ames
1978–1982:	Associate Professor, Entomology, Iowa State University, Ames
1982–1995:	Professor, Entomology, Iowa State University, Ames
1992:	Retired from USDA–ARS and continued full–time as Professor of Entomology, Iowa State University, Ames.
1995–2016:	Professor Emeritus, Iowa State University, retired 30 June 1995. In private practice since July 1995

A Commitment to ESA

- Executive Committee Member, At-large, North Central Branch (NCB), 1979-1982
- Committee Member and Chair, Award of Merit Committee, NCB, 1984-1987
- Chair, Meeting and Location Committee, NCB, 1977-1979
- Chair (2X), Cereal and Forage Insects Section, NCB, 1970 and 1979
- Insect Survey and Detection Committee, NCB
- Nominated for President-elect, NCB
- Nominated NCB Representative to Governing Board, ESA
- President, Mid-America Chapter, Board Certified Entomologists
- Committee Member, National Nominating Committee, Board Certified Entomologists

Honored by our Society

- 1987: Entomologist of the Year in Pest Management Award, Entomological Society of America, Board Certified Entomologists, Boston, MA
- 1988: Entomologist of the Year Award, Entomological Society of America, Mid-America Board Certified Entomologists, Denver, CO
- 1994: Recipient of the C.V. Riley Achievement Award, North Central Branch, Entomological Society of America, Springfield, IL
- 2009 Elected Fellow of the Entomological Society of America.

An Innovative Scientist – The Ecologist

Flight and Sexual Activity of the European Corn Borer[1,2,3]

WILLIAM B. SHOWERS,[4] GARY L. REED,[5] JOHN F. ROBINSON,[3] AND MANUAL B. DEROZARI[4]

ABSTRACT

Although the European corn borer, *Ostrinia nubilalis* (Hübner), began flight shortly after dusk, capture of feral males in traps baited with virgin females or feral males and females captured in light traps and studies of released insects in cultivated and uncultivated corn showed that this early evening activity is not oriented toward mating. Sexual activity peaked between 2400 and 0100 h, and most of it took place in tall (57.5–117.5 cm), dense foxtailgrass (*Setaria faberii* Herrn. and *S. viridis* (L.) Beaur.), where large numbers of both sexes aggregated. Aggregation and sexual activity occurred as much as 100 m from the nearest cornfield. The grass habitat is of major importance in the aggregating phenomenon though pheromone emission by females may also have a part. Techniques employed to disrupt pheromone communication between the sexes in cornfields might be futile because mating could occur in dense vegetation outside the cornfield.

The adult European corn borer, *Ostrinia nubilalis* (Hübner), is essentially nocturnal. Caffrey and

Unless herbicides are used extensively, the reduced tillage systems that are gaining popularity throughout

An Innovative Scientist – The Applied Entomologist

Management of 2nd-Generation European Corp Borer[1] by Controlling Moths Outside the Cornfield[2,3]

WILLIAM B. SHOWERS[4,5], EDWIN C. BERRY[4], AND L. VON KASTER[5]

ABSTRACT

J. Econ. Entomol. 73: 88–91 (1980)

Results of field studies during the summer of 1973, 1974, and 1978 indicated that sampling the population European corn borer moths (ECB), *Ostrinia nubilalis* (Hübner), in dense vegetation (action sites), predominately giant and green foxtailgrass, *Setaria faberi* Herrm. and *S. viridis* (L.) Beauv., respectively, could predict the potential 2nd-generation ECB populations in adjacent corn fields. Numbers of ECB egg masses on corn plants were highly correlated ($r = 0.94$, 1973; $r = 0.91$, 1974; $r = 0.92$, 1978) with numbers of female ECB moths/1-m² (min of 20, one-m² samples/sample date) in dense grass in waterways and near borders of corn fields. Treatment of these areas bordering corn fields with 2.26 kg AI/ha carbaryl killed ECB moths, significantly reduced numbers of egg masses deposited per plant in the corn fields (untreated borders, 3.3 egg masses/corn plant; treated borders, 0.2 egg masses/corn plant), significantly reduced ECB cavities per plant (untreated borders, 40.8 cm; treated borders, 14.3 cm), and significantly increased grain yield per plant (untreated borders, 192.1 g; treated borders, 210.0 g). A regression equation, based on numbers of female ECB moths per 1-m² of action site was developed for predicting potential 2nd-generation ECB populations in corn fields.

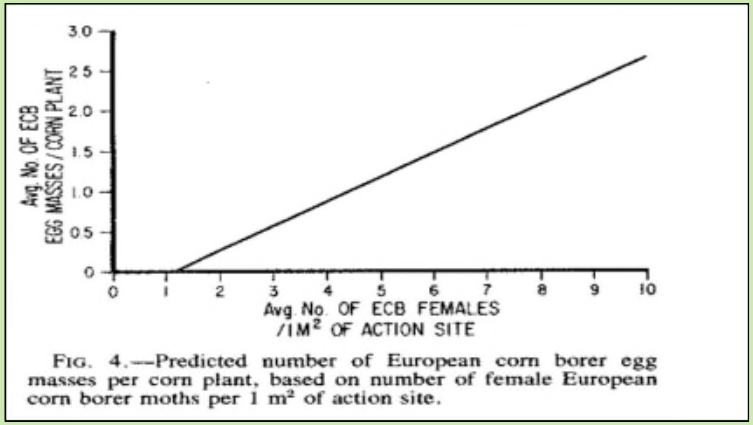
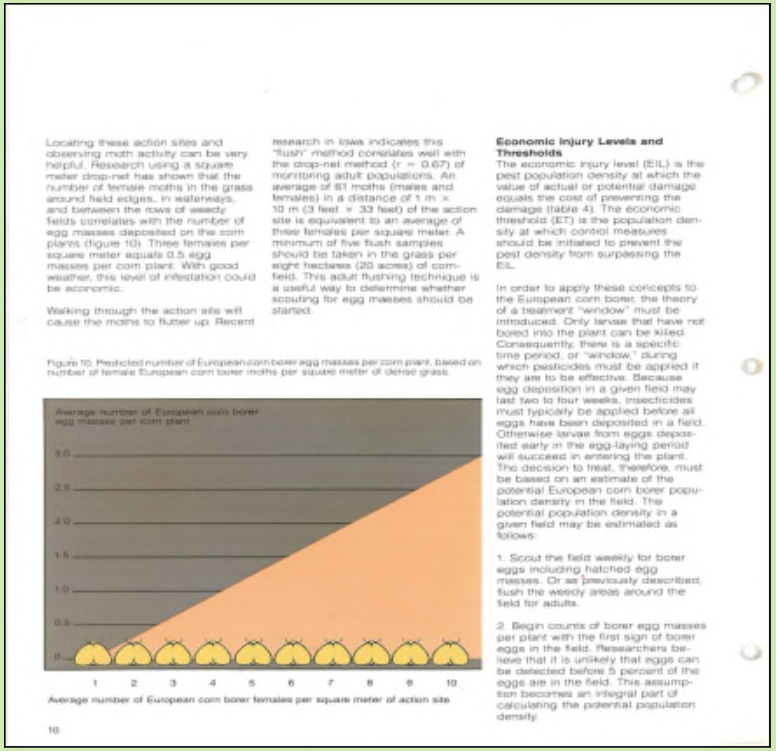


FIG. 4.—Predicted number of European corn borer egg masses per corn plant, based on number of female European corn borer moths per 1 m² of action site.

An Innovative Scientist – The Practitioner



Locating these action sites and observing moth activity can be very helpful. Research using a square meter drop-net has shown that the number of female moths in the grass around field edges, in waterways, and between the rows of weedy fields correlates with the number of egg masses deposited on the corn plants (figure 10). Three females per square meter equals 0.5 egg masses per corn plant. With good weather, this level of infestation could be economic.

Walking through the action site will cause the moths to flutter up. Recent research in Iowa indicates this "flush" method correlates well with the drop-net method ($r = 0.67$) of monitoring adult populations. An average of 61 moths (males and females) in a distance of 1 m × 10 m (3 feet × 33 feet) of the action site is equivalent to an average of three females per square meter. A minimum of five flush samples should be taken in the grass per eight hectares (20 acres) of cornfield. This adult flushing technique is a useful way to determine whether scouting for egg masses should be started.

Figure 10. Predicted number of European corn borer egg masses per corn plant, based on number of female European corn borer moths per square meter of dense grass.

Economic Injury Levels and Thresholds

The economic injury level (EIL) is the pest population density at which the value of actual or potential damage equals the cost of preventing the damage (table 4). The economic threshold (ET) is the population density at which control measures should be initiated to prevent the pest density from surpassing the EIL.

In order to apply these concepts to the European corn borer, the theory of a treatment "window" must be introduced. Only larvae that have not bored into the plant can be killed. Consequently, there is a specific time period, or "window," during which pesticides must be applied if they are to be effective. Because egg deposition in a given field may last two to four weeks, insecticides must typically be applied before all eggs have been deposited in a field. Otherwise larvae from eggs deposited early in the egg-laying period will succeed in entering the plant. The decision to treat, therefore, must be based on an estimate of the potential European corn borer population density in the field. The potential population density in a given field may be estimated as follows:

1. Scout the field weekly for borer eggs including hatched egg masses. Or as previously described, flush the weedy areas around the field for adults.

2. Begin counts of borer egg masses per plant with the first sign of borer eggs in the field. Researchers believe that it is unlikely that eggs can be detected before 5 percent of the eggs are in the field. This assumption becomes an integral part of calculating the potential population density.

10

The Black Cutworm Story – Beginnings

Reprinted from the
ENVIRONMENTAL ENTOMOLOGY, VOL. 11, NO. 2, APRIL 1982

Evidence of Spring Immigration and Autumn Reproductive Diapause of the Adult Black Cutworm in Iowa[1,2]

L. VON KASTER[3] AND WILLIAM B. SHOWERS[3,4]

ABSTRACT

Environ. Entomol. 11: 306–312 (1982)

The association of strong southerly winds with first spring captures of black cutworm (BCW), *Agrotis ipsilon* (Hüfnagel), adults in blacklight traps and captures of male BCW in traps baited with 40 μg of synthetic pheromone (3:1 ratio of Z-7-dodecanyl acetate:Z-9-tetradecanyl acetate) indicates that the first flight of BCW moths immigrate to central Iowa. This hypothesis is supported by the fact that all captured first-flight females are mated, a condition often associated with immigrating females. Additionally, a BCW development simulation model demonstrated the potential existence of two separate BCW populations, i.e., (1) immigrants and progeny, and (2) natives and progeny. We attribute low pheromone trap captures of BCW males and blacklight trap captures of mostly unmated females during the autumn flight to reproductive diapause in one or both sexes. We hypothesize further that a reproductive diapause might portend an autumnal southward migratory flight of BCW from Iowa.

The Black Cutworm Story – The Winds

The Black Cutworm Story – The Pollen

Migration distance:
≥ 1600 km

Nearest locations of exotic pollen sources

The Black Cutworm Story – The Proof

FIG. 1. Release sites of marked *Agrotis ipsilon* and locations of lines of traps (– – –) baited with synthetic sex pheromone, midsection United States, 1984–1985.

FIG. 2. Termination points of air-parcel trajectories, surface (≈300 m elev.) and 85 kPa (≈1500 m elev.), during most likely period for transport of two marked *Agrotis ipsilon* males to Iowa, nights of 9–12 June 1984.

The Black Cutworm Story – The Return

FIG. 1. Release site (*) of marked *Agrotis ipsilon*, lines of traps (●——) baited with synthetic sex pheromone, and sites with recaptured moths (⊙), midcontinent United States, autumn, 1986–1987.

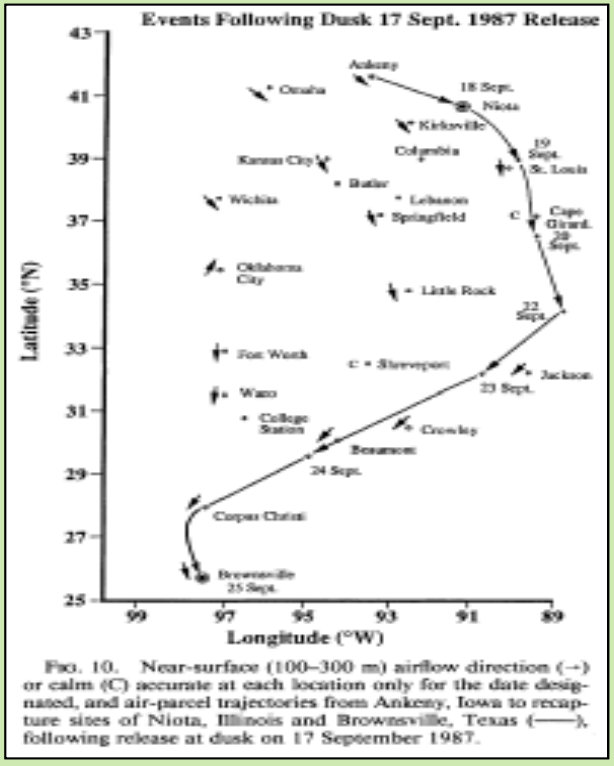


FIG. 10. Near-surface (100–300 m) airflow direction (→) or calm (C) accurate at each location only for the date designated, and air-parcel trajectories from Ankeny, Iowa to recapture sites of Niota, Illinois and Brownsville, Texas (——), following release at dusk on 17 September 1987.

Congratulations Bill!

Certificates of Appreciation: Outgoing P-IE Representatives

- Andy Michel, P-IE Secretary
- Lina Bernaola, P-IE Rep to Student Affairs Committee and Student Rep to P-IE GC
- Sujaya Rao, VP Elect, VP, President, and Past-President of P-IE
- Christopher Ranger, P-IE Awards Committee
- Tom Kuhar, P-IE Rep to STEP Travel Awards Committee
- Frank Hale, P-IE Rep on the Horticultural Entomology Judging Panel
- Scott Hutchins, P-IE Rep on Fellows Judging Panel
- Joseph Patt, Southeastern Branch Rep on the P-IE Nominations Committee
- David Riley, P-IE Rep on the Horticultural Entomology Judging Panel

Agenda

- Welcome
- ESA Presidential Comments
- Treasurer's Report
- Committee Member Recognition
- P-IE Awards
- New P-IE Initiative: report on Pollination Initiative – Fred Musser, Sujaya Rao
- Symposium: Pollinator Issues: Interactions with the Public
- Networking, Refreshments & Prize Drawings

Background for New Section Initiatives

1) Through the turnover in section leadership, the original vision for sections established in 2007 was being lost
   a) Continuing education
   b) Program and Issue leadership
   c) Influence science and public policy
   d) Fostering interest in entomology
2) During 2015, ESA Central led efforts to increase section-level activity
   a) Develop important goals for section members
   b) Self-assess opportunities for programmatic growth

Section Initiative for P-IE

1) By the end of 2017, enhance knowledge of P-IE members on pollinator protection through the development and dissemination of technical educational materials.

2) By the end of the decade, P-IE will become the lead national expert organization for the dissemination of knowledge on pollinators to the general public, media, and policy makers.

In January 2016, P-IE President Fred Musser established a P-IE Pollinator Committee consisting of:

- Thomas Anderson, Entoniche Consulting
- Christina Grozinger, Penn State University
- Sujaya Rao, Oregon State University
- Caydee Savinelli, Syngenta
- MaLisa Spring, The Ohio State University (Graduate Student Rep.)
- Judy Wu-Smart, University of Nebraska-Lincoln

Charge: Develop a program of activities that will enable P-IE to achieve the 2 goals in our initiative

The P-IE Pollinator Committee Report

The committee met via conference calls during 2016, and developed the following proposals for building capabilities in its membership:

1. P-IE Pollinator Video Competition
2. Consolidation of pollinator-related resources on the ESA webpage

The P-IE Pollinator Committee Report

The committee met via conference calls during 2016, and developed the following proposals for building capabilities in its membership:

1. P-IE Pollinator Video Competition
2. Consolidation of pollinator-related resources on the ESA webpage

P-IE Pollinator Video Competition

An opportunity for P-IE members to develop quality YouTube videos on specific topics for increasing awareness about pollinators and pollinator-related issues.

The competition will include two categories:

- Short Video: 3 minutes
- Long Video: 15 minutes max

The following awards will be offered:

1. Four awards, $ 750 each, for the short videos
2. Two awards, $ 1,000 each for the long videos

Topics for the Video Contest

- Bee Biology and Life Cycle
  - Description of known life histories
  - Rearing methods of various bee species
- Public Safety and Awareness
  - Distinguishing between wasps, bees that sting and those that don't
  - Avoidance and treatment of bee stings
- Bees as Model Systems
  - Social Behavior and Cognition
- Protection of Bees
  - Protecting bees in agricultural/urban/residential settings
  - Pollinator-friendly IPM
- Forage and Habitat
  - Establishment of habitat for promotion of bees
  - Relationship between land use/landscape changes and malnutrition in bees
- Importance of bees
  - Ecological services provided by managed bees and wild bees

Video Contest Guidelines

Eligibility criteria:

- At least one producer/submitter must be an ESA P-IE member.
- Videos must be made and published after November 2016.

Deadlines:

Video submission deadline: October 1, 2017.

Winners will be notified before ESA 2017.

Winning videos will be the showcased during the P-IE Networking sessions during ESA 2017.

Evaluation criteria:

- Accuracy of pollinator content with current references.
- Compelling storyline.
- Quality of the video (sound, picture, transitions, etc.).

Consolidation of pollinator-related resources on the ESA webpage

Considerable pollinator-related material is available on the web at various locations. With the help of ESA staff, the P-IE Pollinator Committee proposes to consolidate these resources on the ESA webpage. Legislative members often seek information related to their constituents.

The P-IE Pollinator Committee proposes to create a map and link resources related to each state for quick access. P-IE membership help will be sought for gathering and posting state-related information.

Your feedback is critical!

Please discuss the two proposals with friends and bring your ideas and suggestions to the

P-IE GC and Member Feedback Session

Friday September 30, 2016

7.00 to 8.00 AM

Convention Center W333

Agenda

- Welcome
- ESA Presidential Comments
- Treasurer's Report
- Committee Member Recognition
- P-IE Awards
- New P-IE Initiative: report on Pollination Initiative – Fred Musser, Sujaya Rao
- **Symposium - Pollinator Issues: Interactions with the Public**
- Networking, Refreshments & Prize Drawings

Pollinator Symposium:

Pollinator Issues: Interactions with the Public

Dr. Jennifer Saunders, Acting Senior Entomologist, Office of Pesticide Programs, Environmental Protection Agency presenting "Pesticides, Pollinators, Policy, and the Public: Balancing Stakeholder Perspectives and Ensuring Scientific Integrity".

Dr. Jeffrey Harris, Extension Professor in Apiculture, Mississippi State University presenting "Finding Common Ground Among People with Different Perspectives of the Pesticide-Pollinator Conflict".

Dr. Art Schaafsma, Professor in Integrated Pest Management, University of Guelph presenting "Neonic Bans: North American Beach Head".

Agenda

- Welcome
- ESA Presidential Comments
- New P-IE Initiative
- Treasurer's Report
- Committee Member Recognition
- P-IE Awards
- Symposium: Pollinator Issues: Interactions with the Public
- **Networking, Refreshments & Door Prize Drawings**

Thank you all for attending!