Illinois Mosquito & Vector Control Association

N E W S L E T T E R

Volume 18, Spring 2009

Mark your calendars!! November 19-20, Peoria, IL … IMVCA Annual Meeting

President's Message to the Members of IMVCA, Richard Lampman, Medical Entomology Program, INHS

COORDINATION, PROFESSIONALISM, VIGILANCE, AND EDUCATION ARE THE KEYS TO VECTOR MANAGEMENT AND THE GOALS OF THE IMVCA.

Since the discovery of West Nile virus in Illinois, I think the IMVCA has undergone a rebirth in membership, sponsorship support, inclusion of student and intern talks, and a high quality of speakers for some outstanding programs. Furthermore, I look forward to the comradery at our annual meetings, which makes it almost seem like an extended family reunion, albeit a family with an unusual fixation on killing mosquitoes. But does the association offer more than an annual meet-and-eat venue? From almost 20 years experience (which is not a long time compared to several of our members), I believe the IMVCA is as useful now as it was at that first meeting over 50 years ago.

Recently, I worked on a review article concerning integrated vector management (IVM) and I came to the conclusion there were 4 main components to a good IVM program, especially for a mosquito-borne pathogen like West Nile virus. I believe the IMVCA plays a role in all four.

First, vector control specialists must coordinate (preferably integrate) their work with disease management specialists (ideally with both public health and animal health) and with the general public. When there is a free flow of information between these groups, then vector and disease management, especially the surveillance, personal protection, avoidance, and environmental manipulation components, are optimized. Two excellent examples (among many) of coordination in Illinois are 1) the development and maintenance of the IDPH database on WNV mosquito pools from MADs and PHDs and 2) the INHS Medical Entomology Program interaction with key MADs and IDPH regarding the standardization of infection rate estimation and comparison of arbovirus detection methods to a molecular gold standard (Nina's RT-PCR TaqMan). If vector abatement, human disease management, and animal health groups operate independently, it results in a duplication of effort and ignores the basic nature of vector-borne zoonotic diseases, namely the arthropod transmission of a pathogen to wildlife reservoirs and incidental hosts like domesticated and zoo animals and humans. The IMVCA provides a forum that promotes communication between diverse groups.

Second, mosquito and disease management personnel must strive for a high degree of professionalism, from the administrator to the field worker. This means developing a management plan and establishing standards and benchmarks, as well as training, licensing, calibrating equipment, keeping accurate records, etc. Professionals can readily document and justify their actions to the public and news media. They are able to provide why their actions are necessary and what the consequences are if they have to alter them. The development of an IVM program means having a plan that integrates a surveillance program with preventive and emergency control interventions. The products used are relatively specific for mosquitoes and their application typically targets them in urban larval habitats (catchbasins, tires, abandoned swimming pools) or during peak periods of flight, when most beneficial insects are in protected areas. The district reports, the review of state and federal legislation, the oral presentations, and presentations and displays by the corporate representatives at the IMVCA clearly exhibit the high level of professionalism associated with vector management. The meeting also provides a venue for sharing ideas and updating standards. A frequent topic at the meeting is how to successfully interact with the public and media, and the response is typically to emphasize the professional and scientific nature of MAD and PHD activities.

Third, successful abatement and environmental health programs are those that remain vigilant. Maintaining a concentrated effort is difficult for both the general public and professional personnel because it is human nature to become accustomed or inured to any long-term exposure to potential disaster. The IMVCA annually brings the focus back to vector management and the importance of the jobs we do for public and domesticated animal health (and the often overlooked impact of arboviruses on wildlife). There is no commercially available human vaccine for WNV, so mosquito management remains the main method of disease management. Vigilance also refers, at least partially, to the adage “expect the unexpected”, especially as pathogen transmission vary considerably from season to season due to numerous environmental and anthropogenic variables. WNV may have had a small impact in some years (like the cooler 2003 and 2004), but it had a resurgence in others (as in the hot, dry years of 2005 and 2006). It’s reasonable to assume that other emerging infectious diseases (EIDs) and introduced vectors will occur in our lifetime (for example the spread of *Aedes albopictus* and *Aedes japonicus* throughout the state). Vector-borne diseases are about 17-20% of all human infectious diseases and almost one-third of the EID events. A recent article on EIDs emphasized that the greatest burden of vector-borne diseases is in the tropics, but the majority of hotspots for outbreaks tend to be in western Europe, the United States and Canada, Japan, and southeastern Australia.

Finally, education is an important component of vector and disease management programs. IVM is bioinformatics intensive; requiring personnel to keep up-to-date with new surveillance and management techniques, as well as respond to potential pitfalls with present techniques. The IMVCA serves as a source for continuing education through our presentations and our corporate partners highlight new equipment and treatment methods. Both applied and basic research are reported at the annual IMVCA meeting, including how to improve estimation of infection rates, better knowledge about the bloodfeeding behavior of mosquitoes, understanding how environmental conditions favor or inhibit transmission, and determining the geographic distribution of positive mosquitoes and human cases, in order to evaluate and predict the underlying factors that increase risk. It has been my experience that the observations by, and questions from, MAD and PHD personnel often provide the spark for new research projects (of

course, Mike Szyska should be restricted to only 10 research suggestions per season). I have had the good fortune of working with several MADs, IDPH, and local PHD personnel on a wide range of projects. One of the main goals for the original formation of the IMVCA was the transfer of research on basic vector biology and control to the "troops in the trenches" (what we refer to in grant proposals as "end-users").

So, in conclusion, I think the IMVCA is a valuable association, largely due to the efforts of the Executive Board and Officers, the participation of the members and various local and state agency speakers, the speakers from the various universities, and the generosity and presentations of our commercial partners. The IMVCA should continue to promote coordination, professionalism, vigilance, and education for all personnel associated with vector management in the State of Illinois.

Rich Lampman, Ph.D. Entomology, President IMVCA, 2009.

WEST NILE VIRUS IN THE U.S., TEN YEARS LATER AND IN ILLINOIS, WITH SEVEN YEARS OF DATA

Jack Swanson, Past President of IMVCA

As West Nile virus has been present in the United States for ten years, and we have had human activity in Illinois for seven years, we can look at some things to gives us a general idea of what may be in store for us as the season progresses. Linn Haramis of IDPH had a slide in his "Crystal Ball" section during his presentation at the IMCVA Annual Meeting in November looking at the number of human cases by September 1st vs. the final number by the end of the year (top boxes).

WNV Human Cases in IL	2002	2003	2004	2005	2006	2007	2008	Sum All
# Cases by September 1st	165	3	16	82	49	14	4	333
Total # Cases by the end	884	54	60	252	215	101	20	1,586
% cases = Sept. 1st / Final #	19%	6%	27%	33%	23%	14%	20%	21%
Data from IDPH web page	Linn Haramis, PhD, 11/08							
West Nile Virus in all U.S.	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**Sum All**
# people by 1st week of Sept.	750	1,764	1,191	821	1,267	906	413	7,112
Total people by end of year	4,156	9,862	2,539	3,000	4,261	3,630	1,338	28,786
% cases = Sept. / Final #	18%	18%	47%	27%	30%	25%	32%	25%
Data from CDC web site as of 2/13/09								
J. Swanson, Past President IMVCA								

This idea prompted me to look at the U.S. data for the same time period (bottom boxes). This is just one thing to consider as we get to a certain point in the arbovirus season.

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The content of the articles in the IMVCA Newsletter are brought together by the Newsletter Editor and reviewed by the Executive Board. The comments in the articles do not necessarily reflect the official position of the association, nor of its officers and members.

Notes from the Desk of the Secretary-Treasurer, Nina Krasavin

I hope all of you enjoyed last year's meeting. We had a great turn out and I love running the raffle. **But now it's time for a serious note –**
June 30th is rapidly approaching and those of you that have not paid your annual dues will have to pay more, if I do not receive payment before the deadline.
Our summer research and WNV activities will soon be consuming my time, so I need you to "be kind and pay your dues on time".
If you paid at the annual meeting, that was for last year.
I hope I do not need to remind you that Russians are famous for tracking down their debtors.
Spasiba!

Barry Alto, New Director for Medical Entomology Program

WINNERS of the ANNUAL STUDENT / INTERN COMPETITION

The IMVCA is pleased to announce the winners of the 2008 Student / Intern Competition held during the Annual Meeting last November in Peoria, IL. The winning talk was presented by Gabe Hammer, titled "Host Selection by *Culex pipiens* and West Nile Virus Amplification". He was awarded with $300.

Also, two runners-up were each awarded $100. Brian F. Allan presented "Invasive Honeysuckle Increases Tick-bourne Disease Risk" and Jennifer Rydzewski's talk was titled "Occurrence of Ticks among Small Mammal Populations in East Central Illinois".

For all of our members and interested parties, I would like to remind you of this competition so you can be thinking of possible candidates as we get started on another season. For more information and criteria contact either of the organizers, Jack Swanson at JACK.SWANSON@illinois.gov or Richard Lampman at richlamp@uiuc.edu .

Illinois Mosquito & Vector Control Association

A huge **THANKS** goes out to our Exhibitors & Sponsors who helped make the November IMVCA Annual Meeting a success. Without the continual support of our industry partners, we could not do all that we do. Next time you speak with a representative from one of these companies, please tell them how much you appreciate their participation at our meetings. Also give these companies full consideration when looking to purchase a service, product or equipment.

Exhibitors

Adapco, Inc., B & G Chemical & Equipment, Central Lifescience, Clarke Mosquito Control, Mug-a-Bug Univar, Valent Biosciences, Vector Disease Control, Inc., Wellmark International & Arthur J. Gallagher

Sponsors

- Clarke Mosquito Control – Early Bird Box Lunches & Attitude Adjustment Mixer
- Valent Bioscience - Afternoon Break
- Vector Disease Control, Inc., - Morning Break
- Univar – Grand Prize for Raffle

Thanks for your generosity!

Literature Titles and some Abstracts that may be of interest to our readers:

Host Selection by Culex pipiens Mosquitoes and West Nile Virus Amplification
Gabriel L. Hamer, Uriel D. Kitron, Tony L. Goldberg, Jeffrey D. Brawn, Scott R. Loss, Marilyn O. Ruiz, Daniel B. Hayes, Edward D. Walker. Am. J. Trop. Med. Hyg., 80(2), 2009, pp. 268-278.

Nestling Passerines Are Not Important Hosts for Amplification of West Nile Virus in Chicago, Illinois. Scott R. Loss, Gabriel L. Hamer, Tony L. Goldberg, Marilyn O. Ruiz, Uriel D. Kitron, Edward D. Walker,5and Jeffrey D. Brawn. VECTOR-BORNE AND ZOONOTIC DISEASES Volume 9, Number 1, 2009

Extrinsic incubation periods for horizontal and vertical transmission of West Nile virus by Culex pipiens pipiens (Diptera : Culicidae). Anderson, John F. (john.f.anderson@po.state.et.us); Main, Andy J.; Delroux, Karine; Fikrig, Erol. Journal of Medical Entomology Volume: 45 Issue: 3 Pages: 445-451 Published: MAY 2008

Distribution and Abundance of Host-seeking *Culex* Species at Three Proximate Locations with Different Levels of West Nile Virus Activity
Ilia Rochlin, Howard S. Ginsberg, and Scott R. Campbell. Am J Trop Med Hyg 2009;80 661-668
http://www.ajtmh.org/cgi/content/abstract/80/4/661?etoc

See mosquito larvae from the Medical Entomology Program, INHS.

http://scienceblogs.com/photosynthesis/2009/04/on_assignment_mosquito_larvae.php

From USGS web maps:
This year (2009), Louisiana is the 1st state reporting evidence of West Nile virus transmission in mosquitoes. California has reported birds & mosquitoes. Texas also has activity in a bird and a horse. Illinois has its first report of positive mosquitoes from Cook county collected on May 11th.

2008 – 2009 IMVCA Officers

President	Richard Lampman
Past President	Robert Berry
Vice President	Curt Colwell
Secretary-Treasurer	Nina Krasavin
Trustee Representative	William Schneck
Executive Board Member	Barbara O'Meara
Executive Board Member	Jack Swanson
Ad hoc Advisor to the Board	Michael Slamecka

SOME JOKES – GOOD, BAD & KNOCK, KNOCK

1. **What kind of cars do mosquitoes drive?**
2. **What is the mosquito's favorite sport?**
3. **Knock, knock…..Who's There?**
   Consumption…..Consumption Who?

Answers:
1. Bloodmobiles
2. Skin Diving
3. Consumption be done about all these mosquitoes?

THE ILLINOIS MOSQUITO & VECTOR CONTROL ASSOCIATION
Is pleased to continue the

ANNUAL STUDENT/INTERN PRESENTATION COMPETITION

Up to $500 in cash prizes

Criteria: This competition is open to all undergraduate and graduate students enrolled in public or private schools or public health or MAD interns working in Illinois. The topic can address any area of mosquito, tick or other vectors biology, ecology, or relationship to disease or control.