Skeeter Scanner

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As the summer months are expeditiously coming to an end, the MMCA is now more than ever working for our members in a variety of ways. MMCA Board or Committee members are collaborating with the Michigan Department of Natural Resources and Environment (MDNRE) on the NPDES Pesticide General Permit (PGP), offering a 7F recertification training session to be held October 26 at Bay County Mosquito Control (8 recertification credits available), and planning for the 25th anniversary conference to be held February 2-3, 2011.

You might wonder, regarding NPDES (a topic that is surely on members' minds), what is MMCA doing about it? Well, several of our members have faithfully attended stakeholder meetings this summer to offer comments on the draft PGP and have submitted written comments to MDNRE staff as well. We have fought for the addition of adulticiding to the PGP, removal of language that would limit the products available for our use, and the softening of other restrictive language. None of us are sure what the final results will be, but we've let our concerns be heard.

A copy of the most current PGP draft can be accessed at the following website: http://www.michigan.gov/deq/0,1607,7-135-3313_3682_3713-241279--,00.html. This draft was reviewed on September 30th at yet another stakeholder meeting in Lansing that was attended by MMCA and MPMA (Michigan Pest Management Association) representatives with a number of concerns discussed at length. Soon the draft permit will be released for public comment and we will continue to do what we can to work with MDNRE and to make compliance with NPDES as streamlined as possible. During the public comment phase, I would urge MMCA members to let your thoughts be heard.

The 2nd Annual 7F Recertification Training Session is shaping up to be as successful as last years'. I'm happy to report that we already have 50 folks registered. Dr. Tom Wilmot has graciously agreed to head the training again, which includes a full-day of presentations and hands-on training. New this year will be a presentation on "Barrier Treatment for the PCO". If you would like more information on the training, please get in touch with Dr. Tom Wilmot at twilmot@co.midland.mi.us.

Disease activity in Michigan, as you've no doubt been following, has picked up considerably this summer. After the first spike of Eastern Equine Encephalitis horse cases in southwest Michigan (of which there are now 57), MMCA issued a press release to basically remind Michigan homeowners the most effective ways to reduce their risk of acquiring mosquito-transmitted diseases. Since that time, West Nile Virus has also been active with 27 human cases and, unfortunately, two deaths occurring in Macomb County. Michigan has also reported human cases of St. Louis Encephalitis and LaCrosse Encephalitis. This is one of the most active disease years since 2002.

As the Planning Committee begins to kick into high gear to organize the 25th Anniversary Conference, a quarter century devoted to mosquito education in the great State of Michigan, please watch your e-mail for news and reminders!

Mary J. McCarry

NCGA Supports New Bipartisan Legislation to Overturn NPDES Permits for Pesticides

Bipartisan legislation offers a common-sense approach to pesticide regulation for farmers while still working to ensure safe food for American consumers, the National Corn Growers Association (NCGA) said today. The association commended Senate Agriculture Committee Chair Blanche Lincoln (D-Ark.) and Ranking Member Saxby Chambliss (R-Ga.) for introducing S. 3537, a bill that would overturn a court decision regarding permits for pesticide applications.

"NCGA is pleased that Senators Lincoln and Chambliss have taken a bold step towards restoring common sense pesticide regulations and appreciates the bipartisan effort," NCGA President Darrin Ihnen, a farmer in Hurley, S.D., said. "The new permitting program is scheduled to take effect in April 2011, and it is imperative that Congress take action on this bill prior to that date."

The legislation amends the Federal Insecticide, Fungicide and Rodenticide Act by stating, "Not withstanding any other law, no permit shall be required for the use of a pesticide that is registered or otherwise authorized for use under this Act, if that use is in accordance with [the label]."

Under the federal court ruling, pesticide applicators would have to apply for a National Pollutant Discharge Elimination System Clean Water Act permit if the chemical reaches a body of water, including ditches and culverts. The decision created unnecessary regulatory requirements and also exposed growers to citizen action suits under the Clean Water Act. An EPA draft rule released in June established a relatively narrow federal NPDES program for pesticides; however, future courts could expand the requirements for spray drift and runoff, as well as direct aquatic applications.

"We intend to fully support this legislation throughout the process and urge its swift adoption by the Senate," Ihnen said.

MMCA members are strongly encouraged to contact their federal legislator asking that they support this new legislation.

The newly sequenced genome of the southern house mosquito may help scientists develop new pesticides to control mosquito-borne diseases such as West Nile virus. Courtesy of Jim Gathany/CDC
Scientists have produced a complete genetic blueprint of the southern house mosquito, one of the most widespread disease carriers of the mosquito family. It's the third mosquito genome to be fully sequenced and may help scientists develop more effective pesticides against specific species and diseases.

"Now we have one representative of [each of] the three major groups of disease-carrying mosquitoes," says study coauthor Peter Arensburger of the University of California, Riverside. Sequenced in 2002, the African *Anopheles gambiae* carries malaria. *Aedes aegypti*, sequenced in 2007, lives in subtropical and tropical regions and carries yellow and Dengue fevers.

Now an international team of scientists reports in the Oct. 1 *Science* the genome of *Culex quinquefasciatu*s, which sucks blood from birds, livestock and humans in tropical and temperate regions worldwide. This mosquito can transmit West Nile virus, St. Louis encephalitis and worms that can lead to elephantiasis.

It turns out that *Culex* has more protein-coding genes than the other two main groups of disease-carrying mosquitoes, a possible reason *Culex* can adapt to more varied environments than the other two groups can, the researchers say.

Many of those extra genes code for smell and taste receptors, which may explain how the bloodsucker can find and munch on a variety of hosts. Other genes are specific for immune functions and detoxification, and could show how the pest quickly adapts to withstand new pesticides.

Comparing the trio of genomes may enable scientists to target specific genes using pesticides, says Arensburger. "Instead of trying to develop pesticides that hit all mosquitoes, we can try to target something that's much more specific to just one species."

Colony Collapse Disorder

It has been one of the great murder mysteries of horticulture: what is killing off the honeybees?

Since 2006, 20 to 40 percent of the bee colonies in the United States alone have suffered "colony collapse." Suspected culprits ranged from pesticides to genetically modified food.

Now, a unique partnership of military scientists and entomologists appears to have achieved a major breakthrough: identifying a new suspect, or two.

A fungus tag-teaming with a virus have apparently interacted to cause the problem, according to a paper by Army scientists in Maryland and bee experts in Montana in the online science journal PLoS One.

Exactly how that double-whammy kills bees remains uncertain, the scientists said -- a subject for the next round of research. But there are solid clues: both the virus and the fungus proliferate in cool, damp weather, and both do their dirty work in the bee gut, suggesting that insect nutrition is somehow compromised.

Liaisons between the military and academia are nothing new, of course.

World War II, perhaps the most profound example, ended in a nuclear strike on Japan in 1945 largely on the shoulders of scientist-soldiers in the Manhattan Project. The group of scientists led by Jerry Bromenshenk of the University of Montana in Missoula has researched bee-related applications for the military in the past -- developing, for example, a way to use honeybees in detecting land mines.

But researchers on both sides say that colony collapse may be the 1st time that the defense machinery of the post-Sep 11 [2001] Homeland Security Department and academia have teamed up to address a problem that both sides say they might never have solved on their own.

"Together we could look at things nobody else was looking at," said Colin Henderson, an associate professor in the College of Technology at the University of Montana and a member of the Bee Alert team.

One perverse twist of colony collapse that has compounded the difficulty of solving it is that the bees do not just die -- they fly off in every direction from the hive, then die alone and dispersed.

That makes large numbers of bee autopsies -- and yes, entomologists actually do those -- problematic.

Dr Bromenshenk's team at the University of Montana and Montana State University in Bozeman, working with the Army's Edgewood Chemical Biological Center northeast of Baltimore, said in their jointly written paper that the virus-fungus 1-2 punch was found in every killed colony the group studied. Neither agent alone seems able to devastate; together, the research suggests, they are 100 percent fatal.

"It's chicken and egg in a sense -- we don't know which came first," Dr Bromenshenk said of the virus-fungus combination -- nor is it clear, he added, whether one malady weakens the bees enough to be finished off by the second, or whether they somehow compound the other's destructive power. "They're co-factors, that's all we can say at the moment," he said. "They're both present in all these collapsed colonies."

Research several years ago at the University of California, San Francisco, had already identified the fungus as part of the problem.

And several RNA-based viruses had been detected as well. But the Army/Montana team, using a new software system developed by the military for analyzing proteins, uncovered a new DNA-based virus, and established a linkage to the fungus, called _Nosema ceranae_.

"Our mission is to have detection capability to protect the people in the field from anything biological," said Charles H Wick, a microbiologist at Edgewood. Bees, Dr Wick said, proved to be a perfect opportunity to see what the Army's analytic software tool could do. "We brought it to bear on this bee question, which is how we field-tested it," he said.

The Army software system -- an advance itself in the growing field of protein research, or proteomics -- is designed to test and identify biological agents in circumstances where commanders might have no

idea what sort of threat they face. The system searches out the unique proteins in a sample, then identifies a virus -- or other microscopic life form, like bacteria -- based on the proteins it is known to contain. The power of that idea in military or bee defense is immense, researchers say, in that it allows them to use what they already know to find something they did not even know they were looking for.

But it took a family connection -- through David Wick, Charles's brother -- to really connect the dots. When colony collapse became news a few years ago, Mr Wick, a tech entrepreneur who moved to Montana in the 1990s for the outdoor lifestyle, saw a television interview with Dr Bromenshenk about bees.

Mr Wick knew of his brother's work in Maryland, and remembered meeting Dr Bromenshenk at a business conference. A retained business card and a telephone call put the Army and the Bee Alert team buzzing around the same blossom.

The 1st steps were awkward, partly because the Army lab was not used to testing bees, or more specifically, to extracting bee proteins.

"I'm guessing it was January 2007, a meeting in Bethesda, we got a bag of bees and just started smashing them on the desk," Charles Wick said. "It was very complicated." The process eventually got refined. A mortar and pestle worked better then the desktop, and a coffee grinder worked best of all for making good bee paste.

Scientists in the project emphasize that their conclusions are not the final word. The pattern, they say, seems clear, but more research is needed to determine, for example, how further outbreaks might be prevented, and how much environmental factors like heat, cold, or drought might play a role.

They said combination attacks in nature, like the virus and fungus involved in bee deaths, is quite common, and that one answer in protecting bee colonies might be to focus on the fungus -- controllable with antifungal agents -- especially when the virus is detected.

Still unsolved is what makes the bees fly off into the wild yonder at the point of death. One theory, Dr Bromenshenk said, is that the viral-fungal combination disrupts memory or navigating skills and the bees simply get lost. Another possibility, he said, is a kind of insect insanity.

Pesticide Environmental Stewardship Program, Report of 2010 PESP Activities

In 2008 the MMCA joined the EPA's Pesticide Environmental Stewardship Program (PESP) under the auspices of the American Mosquito Control Association (AMCA). The program is designed to improve MMCA's ongoing policy of environmental stewardship thru the basic long-term approach to reducing pesticide risk through Integrated Mosquito Management (IMM) practices.

In order to measure the progress in meeting PESP goals, we would like to provide a detailed annual report to AMCA. We will attempt to quantify the following environmental stewardship activities:

1. Source Reduction & Working with Public Lands
2. Worker Education
3. Mosquito & Disease Surveillance
4. Public Outreach

Our association has submitted annual reports for the past couple years; included in these reports are data from Michigan's four county mosquito control districts. We need to expand the data to include information from smaller mosquito operations and private mosquito control applicators.

Please watch for the "Report of 2010 PESP Activities" to be sent to your E-mail in October from the Scientific Committee. We would appreciate the participation of all MMCA members. It's a fast way to share information and become involved with PESP!

Jake Britton Accepts New Position

Jake Britton, formerly of Clarke has recently taken a new position with SePro, a company based in Carmel, Indiana, that supports the aquatic and horticulture industries. Jake was a past board member of MMCA. We wish Jake good luck with his new job. He will be missed.

MMCA Awards & Recognition Committee
Request for Nomination

The Awards & Recognition Committee is pleased to request nominations for the following prestigious awards:

H. Don Newson Distinguished Service Award

To give recognition and appreciation to the recipient for his/her meritorious contributions made in the practice of mosquito control, and in support of the MMCA in its endeavor to improve the quality of life of man.

George B. Craig, Jr. Mosquito Advocacy Award

To give recognition and appreciation to the recipient for his/her outstanding contributions of promoting mosquito control and/or MMCA.

Nominations are due on January 7, 2011. Forms are available at: www.mimosq.org/awards.htm

Michigan Mosquito Control Association
William J. Lechel, II Memorial Scholarship
2011 Annual Student Paper Competition

The William J. Lechel, II, Memorial Scholarship is a student presentation competition held in conjunction with the Michigan Mosquito Control Association Annual Conference. Those entering this competition will present findings from their research or a synopsis of existing research at the Annual MMCA Conference.

Presentations on mosquitoes in particular are preferred, but related research may include information in health or pest-related fields; insects, insect control, weather, Lyme Disease, science education, etc. A total of 15 minutes will be allowed for each presentation.

Complete entry information and entry forms are available at:
http://www.mimosq.org/PDF/LechelStudentPaperCompetitionApplication2011.pdf

Submission of abstracts may be made electronically (MS Word) to:
Charles Dinsmore, 2011 Chair, Awards and Recognition Committee
cdinsmore@co.midland.mi.us

Or in printed form to:

Charles Dinsmore
Midland County Mosquito Control
2180 N Meridian Rd, Sanford, MI 48657.

MMCA BOARD OF DIRECTORS
CALL FOR NOMINATIONS

Positions open for nomination of candidates will be Vice-President, Secretary, and two Trustee positions. The office of Vice-President is a 2-year term, serving one year as Vice-President and a second year as President. The Secretary serves a 2-year term and Trustees serve for 2 years.

Everyone is welcome and urged to participate. You may volunteer your own services or nominate a colleague. To propose a candidate, please contact MMCA's Secretary, Margaret Breasbois (989-755-5751, 211 Congress, Saginaw, Michigan 48602 – mbreasbois@scmac.org). Candidates must be MMCA members and nominations must be received by January 7, 2011. The election will take place during the General Business Meeting during the twenty-fifth annual MMCA Conference at the Amway Grand Plaza in Grand Rapids, Michigan February 2-3 2011.

How to Save Hawaii's Endangered Birds? Get Rid of the Mosquitoes.

Darn those mosquitoes. First we learn this week that they have adapted to feed on reptile blood on the Galápagos Islands, putting several rare species there at risk. Now we hear that they are also threatening Hawaii's endangered birds, and may soon be pushing several species closer to extinction. (Not to mention the usual things they do, such as transmit malaria.)

Hawaii was blessedly mosquito-free until about 1820, when the pesky insects first hitched a ride on Western ships and found a whole new buffet table opened up to them. With mosquitoes came disease and exposure to species that have no immunity or protection from skeeter-borne illnesses.

Take the 'I'iwi Honeycreeper (*Vestiaria coccinea*), for example. This rare bird is so susceptible to avian malaria that a single mosquito bite is fatal 90 percent of the time, according to a report published in the *Journal of Avian Medicine and Surgery*. The 'I'iwi has already disappeared from one Hawaiian island, and is now rare on two other islands.

The 'I'iwi is just one of Hawaii's honeycreeper species, but its cousins aren't doing any better. "Of 41 honeycreeper species and subspecies known since historic times, 17 are probably extinct, 14 are endangered, and only 3 are in decent shape," according to a post on Science Daily. Avian malaria is blamed for much of this decline.

So how to protect the honeycreepers and other species? Hawaii is already taking steps to reduce the range of other invasive species, like feral pigs and goats, who help to spread and feed mosquito populations, according to a report in Hawaii's Star-Bulletin. Hawaii also has an entire area of its Department of Health, the Vector Control Branch, devoted to "control and prevent the spread of insects, rodents, or other organisms which are able to transmit infectious agents of disease."

AMCA Webinar on Eastern Equine Encephalitis in North America

Registration is now open for AMCA's upcoming 60 minute webinar entitled "Eastern Equine Encephalitis in North America", presented by John-Paul Mutebi.

Follow this link for further information:
http://eventcallregistration.com/reg/index.jsp?cid=18564t11

National Pollution Discharge Elimination System Permits

The National Pollutant Discharge Elimination System (NPDES) is a federal permitting program under the authority of the Clean Water Act (CWA) that establishes controls on point source discharges of pollutants to waters of the United States. Point sources are defined as discrete conveyances including but not limited to any pipe, ditch, channel, or conduit from which pollutants are or may be discharged. A 2009 ruling by the Sixth Circuit Court stated that discharges to waters of the U.S. from the application of pesticides will require NPDES permits beginning on April 10, 2011.

The EPA has developed a draft Pesticide General Permit (PGP) to address this new mandate. Background information and a copy of the PGP are available at the EPA website: http://cfpub.epa.gov/npdes/home.cfm?program_id=410

States such as Michigan that administer the Clean Water Act for the EPA in their state must develop their own permits. The Michigan DNRE has been working with the EPA and interested stakeholders to develop this permit. Information of this process is available through their website: http://www.michigan.gov/deq/0,1607,7-135-3313_3682_3713-241279--,00.html

Michigan's draft permits for mosquito control and several other pesticide use patterns are now available for review. These permits are scheduled to be released for general public comment this month. It is hoped that the permit will be issued by December of this year leaving some time for training of pesticide application "operators" and review of permit applications before the April, 2011 deadline.

As currently envisioned, only applicators larviciding 640 acres of aquatic habitat or more per year will be required to apply for coverage under the permit, but conditions may change over time and **all** pesticide applicators are expected to be in compliance with most terms and conditions of the general permit. If you have not already done so, all MMCA members are encouraged to review the NPDES information at the EPA and MDNRE websites and consider providing input during the public comment period.

There is still some slight hope for legislative relief from NPDES. Just prior to the August Congressional Recess, both the U.S. House (H.R. 6087) and the Senate (S. 3735) introduced legislation to amend FIFRA regarding the question of NPDES permits and aquatic pesticide applications. House Agriculture Committee Chairman Rep. Collin has introduced a bill (H.R. 6273, dated Sept. 29) that extends the legislative action to concurrently amend both FIFRA and the CWA.

Hand Sanitizer Not Terribly Good At Fighting Cold or Flu

Only a few months after the FDA said that "antibacterial" soaps containing Triclosan might be just as effective as regular ol' soap, a University of Virginia study claims that alcohol-based hand sanitizers don't really put a ding in the number of people who catch a cold or the flu.

The study -- funded by Dial Corp., which produces its own brand of alcohol-based sanitizer -- found a 42% rate of rhinovirus (common cold) infections among those who used the sanitizers, compared to 51% percent for test subjects who didn't take any precautions. For influenza, the rate of infection was 12% for sanitizer users vs. 15% for the control group.

"We all thought if you used hand disinfectants, it would have an impact," said the team's research leader, who called the findings "very surprising."

He added that these findings mean more research is needed into how rhinovirus and influenza are transmitted. If the bugs are spread via the air, as opposed to physical contact, then that might explain why the rates of infection were not lower among sanitizer users.

The researcher did point out that studies have shown sanitizers to be effective on cutting down the transmission of gastrointestinal diseases.

News From Around The Districts

SAGINAW

The hot dry weather we experienced in July greatly reduced larval habitat and thus adult mosquito populations were below normal in late July and August. Adjustments were thus made to our nighttime spray shift to take into account the low adult mosquito densities. We began losing seasonal employees in mid-August as they headed back to college. This loss of staff resulted in combining both our day and night shift into one night shift on August 30th. With fall weather settling in our control season finally came to an end on September 29th.

To date, our disease detection programs this year have collected no positive samples from mosquito pools or *corvids*, however there still are a couple hundred mosquito pools pending. If we have no positive detections we will most certainly encounter difficulties trying to secure a permit to perform our annual aerial larviciding on the Shiawassee National Wildlife Refuge per their *Human Health Emergence Response Plan*.

As mentioned in other locations of this newsletter we have been active in the NPDES process. Regretfully, due to our participation in this process the DNRE has become very concerned with our use of temephos in sewage lagoons. Thus we have been fielding requests for information, had site inspections, and are now in the process of having an outside lab run specific tests on treated sewage lagoon water as specified by the DNRE.

In late August our Education Department sent out information packets to schools informing them of our classroom educational programs and encouraging teachers to schedule a presentation as soon as possible as it is often difficult to honor late requests. Currently we already have 142 classroom presentations scheduled for the year.

We hosted a scrap computer drive at our facility on September 23rd in cooperation with the Saginaw County Dept. of Public Health.

The collection of scrap tires in our county for the year ended on September 30th with a total of 16,331 tires collected and delivered to a shredding facility.

TUSCOLA

We have had a very dry season here in Tuscola County, in contrast to the other districts. Our rainfall has been low as well as our trap counts.

Our last request for treatment was on September 20th, with our season officially ending October 1st. There has been no disease detected in the County for the 2010 season.

In August all technicians were moved to the night shift to utilize all trucks and equipment to catch up on a backlog of over 400 yard treatments, just in time for Labor Day.

We teamed with the Tuscola County Recycling Center to host several satellite tire collection sites throughout the County. This was very well received; plans are already being made for next season.

We look forward to a busy off season in which our projects include new maps, annual report, program plan and our budget for 2011. On March 17th we will be hosting a MDA testing site. We will also be dipping our toes into the NPDES Permitting process as well. We will see you February at the MMCA conference.

BAY

After the previous summer season that was chalked up as one of the coldest on record, 2010 rebounded as one of the hottest! The summer began as warm and wet, but ended on a definite dry note for both August and September. It was not surprising that our technicians found larvae primarily in ornamental ponds and tires for the last few treatment weeks. Ditches and fields were extremely dry.

Temperatures for the last week of September topped out in the mid-60's with lows in the mid-40's, which was typical for that time of year, so this is when treatment activities were wrapped up for the season. Since early September few citizen complaint calls (1-2 per week) had been received and few mosquitoes captured in traps. Six CDC traps were hung for the last time on September 22nd with a total of 89 females captured. The highest number in any one trap was 40.

The last official day of the season was spent hosting the second annual scrap tire drive on October 2 when we rid the county of thousands of breeding habitats.

Disease surveillance efforts continued through September. Four hundred eighty pools (or groups of mosquitoes) were assembled with 3,800 *Coquillettidia perturbans*, 4,251 female *Culex* mosquitoes, and 3 *Aedes japonicus*. These were mosquitoes that were collected in either CDC traps, New Jersey light traps, or gravid traps. No disease activity was detected in Bay County for the 2010 season, which is a first over the past few years. Only four crows or blue jays were tested this year and all were negative.

The exotic mosquito species, *Aedes japonicus*, which was first confirmed in Bay County in 2005, and was collected during five previous seasons (2005-2009), was found again this season in low numbers (18 females collected in light traps from June-September). Most of the larval samples came from tires, ornamental ponds, and other artificial container habitats.

Much time was devoted in 2010 to NPDES by attending stakeholder meetings and pouring over the specifics of the draft permit. We hope that the final draft will have at least some of the changes we've asked for and that compliance with the permit will not be too cumbersome.

MIDLAND

After two years in hiding, West Nile virus made a brief appearance in Midland County this summer. Three dead crows collected in the City of Midland between August 25 and August 30 were found to be positive when tested for West Nile virus. This evidence of virus activity elicited increased treatment and surveillance efforts in the area. Several gravid trap samples of *Culex* mosquitoes were tested but none evidenced further virus activity.

Information released to the media after the positive crows were identified generated a few stories and hopefully reminded the residents of Midland County that WNv remains a potential concern despite the decline over the past few years. Mosquito activity has dropped off dramatically since early September, though, so we are hopeful that any serious risk of disease transmission has passed us by for another year.

Nuisance mosquitoes were more of a concern than disease vectors in Midland County for most of this summer. Perfectly timed waves of rain (perfect for the mosquito that is, not for us) from the spring through mid-summer kept us more than busy enough. Again, mosquito numbers are now on the decline so we have concluded field operations for the year. We are busy cleaning, inspecting and repairing equipment because we just can't wait to start it all over again next April.

NPDES will probably keep us busy this winter and forever beyond. More on that elsewhere in this newsletter

Finally, I'd like to remind you that the MMCA 25th annual conference February 2-3, 2011 in Grand Rapids will be a meeting not to be missed. The American Mosquito Control Association's 2011 conference will be held in Anaheim, CA March 20 - 24.

Have a great winter all.

Lou–E Loon Learns About Mosquito Control.

Lou-E Loon – mascot for the Midland Professional Baseball Team the "Loons", stopped by to learn about controlling mosquitoes, and took a few bites for himself. Said they taste like chicken!

Michigan Mosquito Control Association
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Fall