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West Nile Virus Technical Advisory Committee

March 6th, 2019 Meeting Agenda

4:30 p.m. – 6:00 p.m.

Large Conference Room, Parks Maintenance Shop, 413 S. Bryan Ave.

TAC members present: Eric Levine, Dana Kunze, Chet Moore

Staff present: Matt Parker, Emily Wilmsen, Tyler Marr, Joe Wimmer, Katie O'Donnell (Larimer County Health)

Public present: Dr. Brian Foy and Dr. Chilihng Nguyen (CSU); Nick Komar and Hannah (CDC), four CSU state and local government students

Meeting convened: 4:30 p.m.

Dr. Brian Foy and Dr. Chilihng Nguyen (CDC)

Presentation on their ongoing research on the delivery and efficacy of Ivermectin in managing vector infected birds.

Hypothesis: If we know blood meals are coming from certain birds, using Ivermectin we can kill the mosquitoes before the birds get West Nile Virus. Could this eventually be considered a way to supplement, not replace, spraying activity to help control the infected mosquito population in Fort Collins?

- Ivermectin is an anti-parasitic drug used commonly in farm animals and pets (Heartgard for worms).
- Also effective as a mass drug campaign for entire villages in Africa to prevent worms from replicating and eliminating disease.
- The strategy for Fort Collins and other areas in Colorado could be localized and if timed with West Nile season, could slow resistance considerably.
- In CSU study, tests initially conducted on chickens and wild doves by putting Ivermectin in their feed. As they increased doses in their feed, they saw increasing levels of mortality in mosquitoes. However, the chickens and doves metabolize the ivermectin quickly.
- In Fort Collins, tested a total of six sites – 3 controlled sites and 3 Ivermectin sites. Had to exclude sites they know are heavily sprayed.
 - Used birdfeeders with cracked corn and millet dosed with Ivermectin and mounted cameras to study the birds, etc. that fed there.
 - Caught birds at two sites and tested:
 - Four of five grackles had Ivermectin in blood, 9 of 10 sparrows had it.
 - Didn't see a significant difference in abundance of mosquitoes, would expect to see difference in age of mosquitoes.
 - Need more tests to be statistically significant.
- If proven effective, it's possible that individual homeowners/farms could use around their properties.

- What about toxicity? Yes, just like anything. But this is one of the drugs you can give to entire communities without doctors administering. Birds are getting far less dose than a human child would be given. Ivermectin is metabolized and excreted very quickly. Raptors would have to eat hundreds of birds treated with this to reach toxic dose.

Other data

- Beginning of summer, robins, and some doves serve as the blood-meal source of most mosquitoes. Small mammals comprise a low rate of blood-meals. Robins nest earlier in the season and are geographically more widespread, thus presenting easy blood-meal targets.
- July – Blood-meal seeking of doves increases, other birds, mammals and humans contribute more as well.
- August – Very few robins are sought as a blood-meal source, humans start to contribute more

Next steps

- Going to test in rural areas of Colorado because it's easier to control the environment.
- Would like to come back to Fort Collins to test six of each site, which would be more statistically significant.
- Need for additional grant funds to do more studies.

Discussion on WNV and Urban Agriculture

Zooprophylaxis (the diversion of vector bites from the reservoir to other hosts)

- Animals are more exposed to mosquito bites; therefore, urban agriculture should reduce transmission rates through diversion.

It was noted by Dr. Foy and Dr. Nguyen that there is not data that conclusively says ivermectin is effective for *Cx.pipiens*. Though data shows *Cx. tarsalis* is susceptible.

WNV TAC member from urban agriculture community resigned from the committee. Suggestion for member from bee keeping community.

Scientific review of urban agricultural communities with WNV programs did not present significant findings.

PBO study

Concerns of Piperonyl butoxide (PBO)

- Discussion about article:
 - “Commonly Used Insecticide Linked to Delayed Mental Development” (2011) Columbia University Mailman School of Public Health.
 - Full study will be supplied by Dana Kunz to TAC members

Suggestion from committee member for TAC to review and evaluate these chemicals; consult with professionals, although no specific individuals suggested.

2019 BFO update



West Nile Virus - Adult Mosquito Treatment Efficacy Study was funded by City Council in 2019-2020 BFO cycle.

- The purpose is to improve understanding of the efficacy of adult mosquito control efforts in Fort Collins as recommended by the TAC.

0.25 FTE Contractual WNV Environmental Reg Specialist was not funded in BFO cycle.

Update from Larimer County

2018 Case data: 17 WNV cases in Larimer County. 6 were neuro-invasive.

New health director in Larimer County, Tom Gonzales. Darrick Turner resigned from Larimer County.

TAC Charter

Suggestion from Matt to develop a TAC Charter to better describe the Committee's role. Matt Parker and Tyler Marr are developing a draft and would like input from the Committee when draft is ready.

Public Comment: None

Meeting adjourned: 5:45 p.m.