

PLANT DISEASE AND INSECT ADVISORY



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Vol. 1, No. 25

Website: <http://plants.okstate.edu/Pddl/advisory.htm>

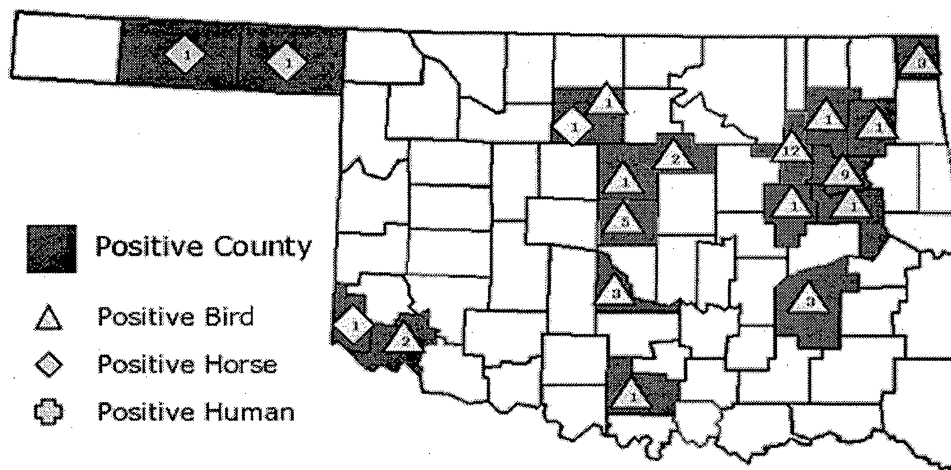
Aug 21, 2002

West Nile Virus and Mosquitoes

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A news release on August 16, 2002 by the Oklahoma State Department of Health indicated that West Nile Virus (WNV) has been found in 46 birds from 14 counties. Counties with multiple cases were Tulsa (12), Wagoner (9), Oklahoma (6), Ottawa, Cleveland, Pittsburg (3 each), Jackson and Payne (2 each). One bird case each has been found in Carter, Okmulgee, Muskogee, Garfield, Mayes, and Rogers counties. Four confirmed horse cases have been reported, one each from Texas, Beaver, Harmon, and Garfield counties.

Oklahoma Counties with Positive West Nile Virus Tests in 2002



Updated August 16, 2002

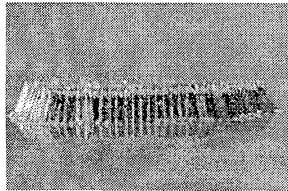
What do these confirmed cases in birds and horses mean?

West Nile Virus is circulating between bird populations and mosquitoes in several parts of the state and has in at least four instances spilled into horse populations. We expected to find WNV infections in birds in Oklahoma this year and undoubtedly will find more bird cases and probably more horse cases. It is even likely that we may have some human cases. However, there is no need for the public to panic as most all human cases are quite mild. I also do not believe that we have extremely high mosquito populations that will contribute to a wide outbreak of WNV. The

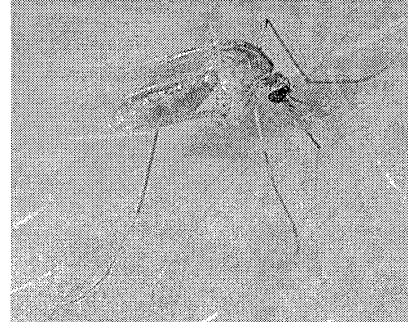
Oklahoma State Department of Health's survey program is working well and their frequent updates keep the medical profession aware of where to watch for possible human cases.

What are the important mosquitoes to watch for?

Scientists believe that the most likely mosquito species that are transmitting WNV between birds and occasionally to horses and humans belong to the Genus *Culex*. Populations of mosquitoes in this group reach peak populations in August and September. Most of these species feed on birds and are most active after dark.



These mosquitoes lay their eggs on the surface of standing somewhat stagnant water. Eggs hatch in 24 to 48 hours and larvae can develop to adults in 6 to 8 days of hot temperatures.



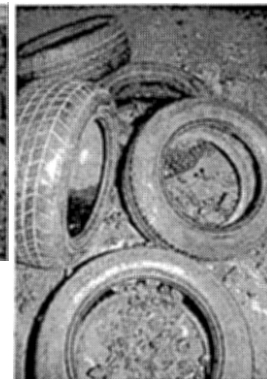
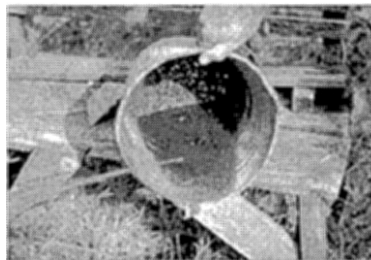
Localized heavy rains can fill many containers and keep water in standing permanent pools which produce populations of these mosquitoes in areas that have had such rainfall. Fortunately, hot temperatures can reduce adult populations quickly and cause many standing water sources to dry up quickly.

What can the public do to prevent mosquito bites?

- Use repellents when being bitten by mosquitoes or when going to areas where mosquitoes are abundant. DEET (N, N diethyl-*m*-toluamide) is the active ingredient in almost all of the effective available repellents regardless of the trade name.
- If possible wear long pants and long sleeve shirts in areas where mosquitoes are biting.
- Most of the mosquitoes associated with WNV bite after dark, so try to avoid being out after dark if mosquitoes are troublesome.
- Keep screens on doors and windows in good repair.

What can the public do to help eliminate mosquitoes?

- Search for and empty any containers, tires, buckets, water dishes, bird baths, flower pot bases, cans, etc. that may be holding water with mosquito larvae. Containers need to be emptied at least every 3rd or 4th day.



- Remove and clean up any trashy containers that will hold water.
- Used tires containing water can be an important source of water for mosquito breeding. These are very difficult to empty. If they can not be punctured and drained, one can add diesel fuel or fuel oil to the surface. This will form a film over the water and suffocate the mosquito larvae. **Do not** use such oil films on water that will be consumed by animals or any water in creeks or around the edge of ponds.
- Check any areas of standing stagnant water for the presence of mosquito larvae. Such water areas can be drained or filled. Mosquito larvae do not normally live in ponds,

lakes, or rivers with fish populations or wave action.

- Stock tanks are often a good source for mosquito larvae. If mosquito larvae are present, I suggest stocking the tank with mosquito fish or other small fish. **Do not treat** animal drinking water with any insecticides.

Insecticides for use in controlling mosquitoes - primarily for use by municipalities and not the general public.

Larvicides

- Larvicides are put in water to control mosquito larvae. There are several products that can be used to control mosquito larvae, most of which are available only to certified or licensed applicators. Only one product containing a material known as *Bacillus thuringiensis* var *israelensis* (BTI) can be purchased and used by the general public. This material is sold under several Trade names (Mosquito Dunks, etc.). This product should be used only according to label instructions.

Adulticides

- Adulticides are insecticides that are used to kill adult mosquitoes. These materials are used primarily as thermal fogs, mists, or Ultra Low Volume (ULV) sprays.
- Twenty to thirty years ago almost all mosquito spray programs used thermal fogs or mists. Thermal fogging machines are not often used today. Even if a municipality has old thermal fogging machine they may not be able to purchase the insecticide formulations that can be used in the machines.
- Currently most adult mosquito control is done with ULV applications. These applications require special ULV sprayers and special ULV sprays which are specifically designed for mosquito control. These machines and insecticides should be used only by trained certified or licensed applicators. ULV insecticides are not sold to the general public.
- Any good mosquito control program will be expensive and time consuming.
- Some backpack type thermal fog sprayers may be available to the general public and products designed for use in these machines may give effective mosquito control if used at the right time under the right conditions.
- A list of insecticides registered in Oklahoma for mosquito control can be found on the Ento & Plant Path website: <http://entopl.okstate.edu/mosquito/products.html>.
- General information on mosquito biology and occurrence can also be found at: <http://entopl.okstate.edu/mosquito/biology.html>.
- Up-to-date information on West Nile virus in Oklahoma, including distribution maps, can be found on the Oklahoma State Department of Health home page at: <http://www.health.state.ok>.

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