

# Washington

## West Nile virus cases come early in Washington

Disease strikes 6 horses before July ended

By **DON JENKINS**  
Capital Press

Six horses in Washington have been infected by West Nile virus in the past 10 days, already surpassing the number of equine cases in all of 2014, according to the Washington State Department of Agriculture.

The virus is appearing in horses earlier than last year, when the first of five cases was confirmed Aug. 19, WSDA spokesman Mike Louisell said Friday. The first case in 2013 was confirmed

in late September.

Horses contract the disease from mosquitoes that have fed on infected birds. "Look at the hot weather we've been having. That's no doubt spurred mosquitoes," Louisell said.

The virus is most common in south-central Washington, though it has infected horses and humans in other regions of the state.

So far this year, the state Department of Health reports five human cases, including four in Benton County, where two horses have been infected. The fifth person sickened

by the virus lives in King County in Western Washington, but was likely infected in Adams County in Eastern Washington, according to the health department.

WSDA previously reported that a gelding in Kennewick in Benton County was confirmed July 21 to have the virus. The horse survived, and it continues to improve, according to WSDA.

Since then, five more cases have been confirmed. The six cases are the most in Washington since 2009, when the virus infected 78 horses, by far the worst outbreak ever in the state. Equine cases have been

relatively rare in the past several years, with two cases confirmed in 2013, one in 2012 and none in 2011 and 2012.

The cases so far this year include:

- A 2-year-old Andalusian stud colt in Harrah in Yakima County. The horse's condition is improving.
- A 4-year-old Andalusian stud in Kennewick was euthanized.
- A 3-year-old Quarter horse gelding in Mesa in Franklin County died.
- A 9-year-old Appaloosa mare in Othello in Adams County. The horse appears to be recovering.

• A 3-year-old Azteca male in Mabton in Yakima County. The horse appears to be recovering.

Idaho confirmed July 23 that a horse in Washington County was infected this year, the state's only case this year.

The California West Nile Virus website, jointly run by several government agencies, does not report equine cases. California's surveillance system includes chickens set out to detect mosquito-borne illnesses. So far, 45 chickens have been sickened in nine counties, including the Northern California counties of Shasta, Butte, Glenn, Sutter, Yuba and Placer.

Oregon has not confirmed any equine cases this year, state Department of Agriculture spokesman Bruce Pokarney said Friday.

The West Nile virus appeared in the United States in 1999. The disease sickens people, horses, birds and other animals, but it does not spread from horses to people or other animals. Most horses that contract the virus show no ill symptoms. About one-third of the horses with symptoms die.

WSDA recommends horses be vaccinated against the virus and that owners take steps to protect their horses from mosquitoes.

## Anti-aphid wheat research shows opportunities

By **MATTHEW WEAVER**  
Capital Press

An effort to develop wheat that wards off aphids didn't succeed but researchers in England say the work could open the door to other hybrids of wheat that repel pests without the use of pesticides.

When aphids are attacked or stressed, they produce an alarm pheromone, E-beta-farnesene, which is known by the initials EBF. When EBF is released it causes aphids to disperse, said Huw Jones, a professor at the cereal transformation laboratory at Rothamsted Research in Harpenden, Hertfordshire in England.

Jones' team tried to genetically engineer wheat plants to make the compound, repel aphids and attract aphids' natural enemies.

"If it had worked as planned, it would give farmers a choice whether to continue using conventional insecticides or to sow a crop variety that would repel aphids but keep them alive to maintain the populations of natural enemies," Jones said in an email to the Capital Press.

Some parts of the project



Eric Mortenson/Capital Press file

Wheat grows in this file photo taken in 2014. Scientists in England developed a genetically modified wheat aimed at controlling aphids without the use of pesticides.

worked well, Jones said, noting that it's the first time wheat plants have been genetically engineered to emit the alarm pheromone. Lab experiments demonstrated that the plants successfully repelled aphids and attracted parasitic wasps that lay their eggs in the insect pests and kill them.

However, in 2012 and 2013 field trials, Jones' team didn't observe any statistically significant behaviors in aphids or parasitic wasps.

Jones said the aphid alarm

response is normally triggered by a sudden burst of EBF, but the genetically modified plants made the pheromone continually, which may have had a saturating effect.

"Like you can smell a newly applied perfume but cannot notice it after a while," Jones said.

The project has ended, but Jones is seeking funding to investigate the amount and timing of EBF emissions.

"We are aware of wheat genes that are switched on

when aphids colonize and start to feed," he said. "We are interested in isolating these gene switches and using them to drive the expression of the enzymes needed to make EBF."

The research would be applicable to any area where aphids are a pest, Jones said.

Arron Carter, winter wheat breeder at Washington State University, said it's just a matter of getting funding and having someone interested in doing the research.

He said aphids are not a high impact concern, but a research project would be of general help. Wireworm, another wheat pest, could be controlled by a similar technique, he said.

Spring wheat is typically hit by aphids more than winter wheat. Early infections of aphids usually transmit barley yellow dwarf virus to winter wheat, Carter said.

But the biggest stumbling block is customers' opposition to genetically modified wheat, Carter said.

"Until our markets accept GMO, we won't see any of it here in the PNW," he said.

Jones believes non-lethal, behavioral approaches to pest control have "great potential."

## ID'ing grapevine fungus may help fight disease

By **DAN WHEAT**  
Capital Press

PULLMAN, Wash. — Washington State University researchers believe they have taken a step forward in combating grapevine trunk disease in Washington vineyards.

Scientists said they have documented seven fungal species that cause cankers in grapevines, more than previously known, and that knowing them and their varying biology and dispersal will allow better, customized management.

The work was done by Leslie Holland who completed her master's degree in plant pathology in June. She worked under the guidance of Dean Glawe, a WSU plant pathology professor who retired in June, and Gary Grove, director of the WSU Irrigated Agriculture Research and Extension Center in Prosser.

Building upon research by Glawe, Holland conducted a statewide survey to gauge how common grapevine trunk diseases are. Fungi infect trunks or cordons through pruning wounds, resulting in cankers that enlarge over time and ultimately kill the plant.

Glawe linked grapevine trunk disease to the fungus *Eutypa armeniacae* in the 1970s when looking at Concord grapes. Wine grapes were not widely grown in Washington then. Holland expanded the research to wine grapes.

Holland analyzed diseased wood and identified cancer-causing fungi based on morphological features and gene sequencing. Not only did she discover more fungal species could cause cankers in Washington than was previously known, but she also saw a correlation between vineyard age and symptom incidence.

She found the highest incidence of trunk disease in a vineyard with 33 percent of its vines showing symptoms. This was also the oldest vineyard sampled, with plants from 40 to 42 years old. The trend continued as she crunched the numbers.

"Washington is at an advantage because the wine industry is young, with most vineyards planted from 10 to 30 years ago, and we have had scientists involved since the beginning," Glawe said. "The predictive value of Leslie's research is substantial, as we are just beginning to see trunk disease become a bigger problem."

Holland plans to continue studying canker fungi on other perennial crops when she begins a Ph.D. program at the University of California-Davis in September. Through sequence analyses, she found that fungal isolates in Washington are similar to fungal isolates in other grape-growing regions of the world, including California, Portugal and Australia.

## State funding moves Connell rail project forward

By **MATTHEW WEAVER**  
Capital Press

Railroad congestion near Connell, Wash., that slows the shipment of agricultural crops and supplies is closer to a solution, thanks to \$10 million from the state legislature, project supporters say.

Washington legislators recently approved the funding in the 2015-2017 Transportation Revenue package.

The funding will be divided into \$5 million in each of the 2015-2017 and 2017-2019 bienniums.

The project will help the regional delivery of goods from farm to market, said Jed Crowther, Connell city

administrator.

The rail traffic "pinchpoint" occurs where the Columbia Basin Railroad line intersects with the BNSF Railway mainline between Spokane and Pasco, Wash. The interchange will be moved roughly 1.5 miles south of its current location.

Rail traffic has increased from 5,000 to roughly 12,000 cars per year, Crowther said.

Future freight traffic could increase dramatically, said Pat Boss, consultant for the Columbia Basin Railroad.

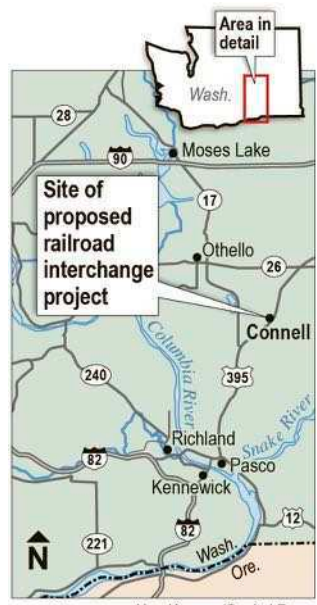
About \$2 billion in agricultural products are shipped annually through the region by rail. Boss said affected cargo is roughly 50 percent agricultural freight, including grain, frozen

vegetables and canola.

A planning study for preliminary design is underway. Crowther said it's still early to determine final costs. Boss said there may be additional federal funding, but said the \$10 million adds "a huge bit of credibility."

Crowther expects the project to be finished in three to four years. He expects "a significant push" to coordinate with BNSF's efforts to double-track its mainline between Spokane and Pasco.

Projects to address railroad congestion in Warden and Moses Lake received \$2 million and \$21 million, respectively, Boss said. Those projects may result in more traffic through Connell, Boss said.



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WSU photo

Fungal growth on discolored, cankered wood samples.

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