

# County Chronicle

County of Warner

## CORRECTION...

The following article on West Nile Virus appeared in the March 2003 issue of the County Chronicle. Please take note that the expected West Nile Virus season runs from **June through September**, not July through September as originally stated in the article. This means that vaccinations for horses must be completed in May. Phone your veterinarian for more information.

## West Nile Virus- An Overview

*By: Dr JP Nightingale, District Veterinarian, CFIA, Lethbridge*

Although not on the international list of biological weapons, when West Nile Virus (WNV) was first reported in 1999 in New York, given the amount of publicity surrounding its introduction, one could be forgiven for thinking that this was some form of dastardly plot by a foreign power. This of course is far from the truth. Let's take a look at the disease—its cause, signs, transmission and most importantly the things we can do to protect ourselves and horses from exposure/infection.

West Nile Virus disease is caused by a virus closely related to an agent causing St Louis Encephalitis—a disease reported in the Americas for several decades. There are many such diseases worldwide. WNV has in fact been known in Europe and Africa for a considerable time.

What made headlines back in 1999, was the fact that this was a new disease at least so far as North America was concerned.

Whenever a new virus appears in a vulnerable population then the conditions are frequently ripe for an epidemic and to some extent this is what has happened; at least as far as the target species are concerned.

There are three “targets” of major importance. They are birds (especially crow family members), humans and horses.

The virus is thought to have been introduced into North America by wild birds during migration, or the illegal importation of pet birds—we'll probably never know for sure.

For some reason, crows and their relations are especially vulnerable, and “die offs” in these birds are considered the first indicators of the virus having established itself in a new area.

Horses like humans, are more susceptible than other species, but it is important to realize that even in these two species the actual development of serious disease is rare. The majority are exposed without showing any signs of infection. Some will develop a fever, and of those, a very small proportion will develop serious and potentially life threatening consequences. These individuals represent patients with compromised immune systems (e.g. chemo-

therapy recipients) and the old.

The virus can only be transmitted from a bird via a mosquito (a vector) to the next host (human or horse). There is no evidence suggesting that a horse can transmit to a human or another horse or vice versa. Mosquito avoidance therefore becomes an important step in reducing the chance of exposure.

During the last year or so a killed vaccine has been developed that seems to be effective in protecting horses. Two initial doses are required. Because it takes time for immunity to develop in the horse, the second vaccine shot must be given at least 2 weeks before the expected WNV season (June through September). Check with your veterinarian for details.

For both humans and horses, the use of mosquito repellants is recommended. Most mosquitoes are active in the evening, but because nature likes to confound us, there are species that are active at other times of day and night—so be aware!

Anything reducing the chance of a mosquito bite will clearly reduce possibility of contracting the disease. Check with your Health Unit for more information.

Since mosquitoes breed in standing water removing such sources in beneficial. Things like tires for example, which can accumulate water should be drained. Widespread adult mosquito control is not recommended.

The Province has a program of surveillance to monitor for WNV activity. Because crows and their relatives are the most vulnerable, these are the species that should be submitted to your local Fish and Wildlife Officer—check with them for more details. Do not deliberately cull birds. It is extremely important that the specimens be as fresh as possible—delivered within hours not days during the hot summer months. Handle dead birds with gloves and double bag the carcass in plastic bags. If a delay in delivery is expected, then chilling or even freezing is advised. Children should not touch dead birds.

In summary, expect WNV to be confirmed in Alberta this summer—it is already in Saskatchewan and Montana having spread westwards across North America in only three years.



## Browning of Evergreens

Needle coloration of the outer ends of branches can be a sign of illness in coniferous evergreens. The illness or injury may be in the needles, but can also be in the roots, trunk or branches. The crown can appear slightly or distinctly yellow, straw-colored, brown, gray-brown or red-brown depending upon the severity of the damage. The color change is definite and sometimes quite spectacular, and can mean that there is something wrong. Often, the change occurs after injury, so that recovery may not be possible.

Although color change is a good clue, other symptoms have to be taken into account for diagnosis and control.

### Autumn Needle Shed

Old foliage of many conifers brown and shed during autumn. These are two and three year old needles, depending on the species. The new growth and previous year's growth remain normal. This is a natural process, but is often confused with injury or disease. Most common on pines!

### Frost Injury

In spring, new growing tips suddenly droop and get a blanched appearance, then turn brown leaving only the branch tips dead. The condition then progresses no further and the dead tips are shed, usually causing little harm to any but very small trees.

### Herbicide Damage

Herbicides tend to kill some but usually not all conifers in an area. Often, affected trees are browned completely during winter and then produce new growth at the tips when the growing season starts. This advent of green tips following severe crown discoloration is a common symptom of herbicide damage. Other symptoms indicate more specific groups of herbicides.

2,4-D and similar chemicals cause a curl, twist or distortion of new stems. Affected needles are often clumped together. Later needles become brown, but tend not to be shed immediately.

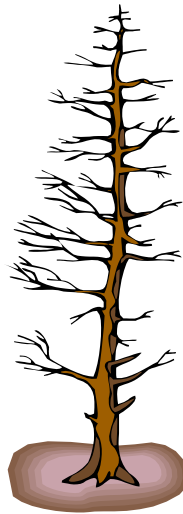
Atrazine and similar chemicals cause needles on the entire crown or whole branches to become very light yellow or white with some tip browning. Affected needles shed soon after symptoms appear.

### Drought Damage

Trees gradually turn yellowish-green, then light brown from the top down and outside in until the tree dies. No insect or fungus will be found associated with these symptoms and ordinarily only individuals will be affected. Shallow rooted species particularly in irrigated areas or on

sites with normally high water tables will be affected first. The absence of symptoms or indicators other than a gradually downward decline implies drought damage.

A thorough soaking can help to reduce drought stress. If you simply water the lawn with a sprinkler, the tree will not receive enough water. Place a soaker hose on the ground in a circle under the outer ends of the branches (the drip line). Punch holes in the soil about 15 cm deep, 1 cm in diameter, and about 30 cm apart along the edge of the hose. Turn the hose upside down over the holes so that it will soak into the ground. The tap should be adjusted so that the water flows slowly; allow the ground to soak for 3 to 6 hours. Repeat the procedure once every 3 weeks from May until late August.



### Cold or Winter Injury

At the advent of warm weather in the spring a sudden deep red discoloration of branches or entire trees implies cold injury. The color fades to light brown during the summer. Most winter injury is caused by evaporation of moisture from crowns during sudden warm or windy periods in winter, rather than extreme cold. Particularly common in junipers, ornamental cedars, true firs, or any off site ornamental. Take steps to protect the trees from the sun and wind using screens.

### Dog Damage

The foliage of outer, lower branches or ornamental small trees and shrubs, especially juniper, may become progressively yellow, then brown when neighborhood dogs use them as urinals.

### Iron Deficiency

Foliage on a branch, part of the crown or more often the entire crown becomes distinctly yellow during several years. No insect or fungi are present, when severe dieback will occur. This is common in irrigated areas or in alkaline soils where iron is unavailable. Common in spruce, juniper and cedar.

### Insect Damage

Sucking insects such as aphids and mites remove sap from the needles and stems; in large numbers they can kill needles. Washing the tree with water will help control these insects. In severe cases, an insecticide can be used.

*Information from Agdex 275/690—Alberta Agriculture.*