

Adele McCaw and her husband Bill pasture their horses on the riverside of Breezy Point Road North, near Winnipeg, so when the land was flooded in Spring of 2010 they knew the pasture could be contaminated by the flood water. They had had experience of contaminated feed 13 years ago when they bought in hay which had been cut from flood-affected areas. Two of their mares had been bred, and two not, but during what would have been the first trimester all four developed symptoms of late pregnancy such as full milk bags and weight gain. Pregnancy checking showed no foals, but the symptoms continued. The horses were taken off the affected hay but it took six months for symptoms to subside.

This time when the pasture flooded they waited until it had five good rains on it, thinking it would wash away any pollutants. However, within 3 weeks of being on the pasture both their mares and two geldings were affected by hormone

imbalances. One mare, aged 15, was severely affected, developing mastitis and then borderline founder. Adele said, "Our 26-year-old gelding was very stud-like and aggressive. This is a very quiet horse who can be ridden by small children. The 5-year-old gelding was constantly

mounting the mares and became very nervous. He is also normally very quiet. These horses were on fresh grass pasture that was affected by flooding river water."

They called their vet within a month of noticing symptoms and when he arrived one of the first questions he asked was,

"Where have the horses been pastured?" When Adele showed him the area, his next question was, "Does this land flood in the spring?"

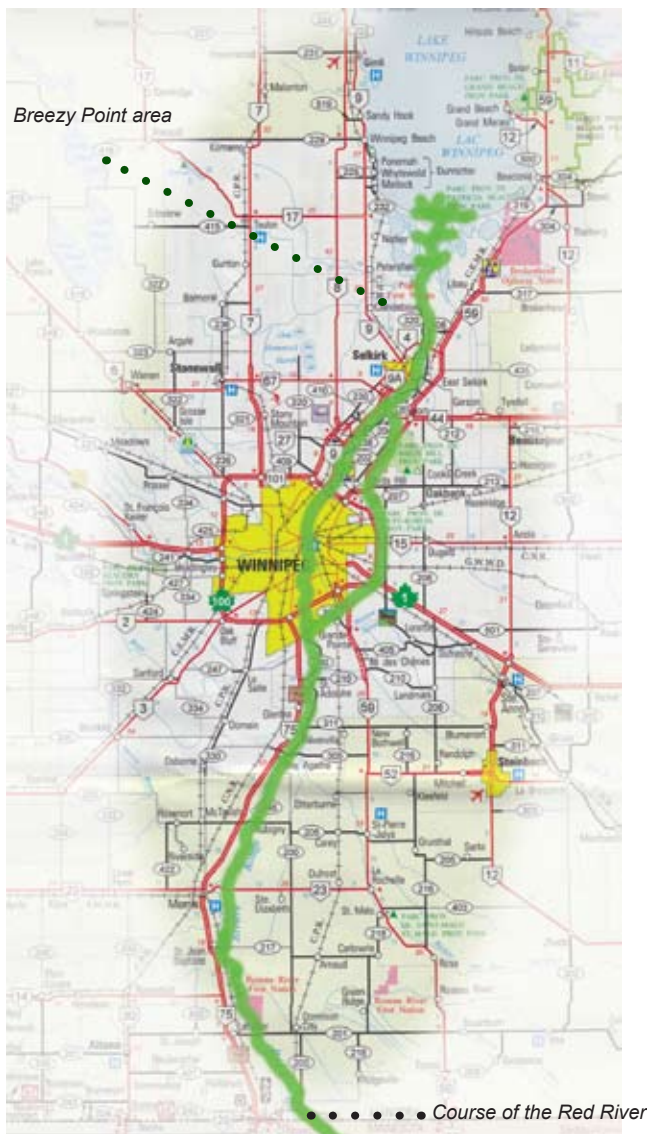
The answer "Yes" confirmed the diagnosis. The mares and geldings were suffering from hormone imbalances related to the flooded pasture land – at the time they were being fed nothing else. The mare with mastitis had to have antibiotics, anti-inflammatories, and be specially shod for the founder.

It took approximately 6 months for the herd to recover, and the McCaws no longer pasture on the affected area. They are careful also to only purchase hay which has been grown some distance from the river.

But how had the horses ingested the chemicals?

The land had been flooded by the Red River north of Winnipeg, almost at the end of its 885 km (550 mile) journey from West Central Minnesota to Lake Winnipeg to join the Nelson River on its way to Hudson Bay.

The problem which was




Hormones . . . and horses.

affecting Adele and Bill's horses was that the Red River flows through several urban areas along its path including Fargo-Moorhead and Greater Grand Forks in the United States and Winnipeg in Canada. Each urban area has treatment plants for waste water which is discharged into the Red River. However, the treatment plants are inefficient at removing the many pharmaceuticals which pass through humans, are disposed of in sewers and trash, and contaminants from industry.

Dr Eva Pip of the University of Winnipeg (herself a horse owner and Horse Country subscriber) commented, "Pharmaceuticals such as birth control chemicals, blood pressure medications and chemotherapeutic agents are all present in the Red River. The water also carries several pesticides and industrial chemicals that are hormone disruptors. Some heavy metals, of which there are plenty in the Red River, can also disrupt hormones."

Another factor contributing to the hormone overload is the situation where plants

bioconcentrate metals and organic chemicals so that the horses could be eating food that is hundreds of times more contaminated than the original floodwater. Dr. Pip has been leader of a team examining streams feeding into the Lake Winnipeg south basin which has discovered that during 2010 the runoff from agricultural fields has been especially bad – things like the surfactant in Roundup can affect reproduction. "Another possibility may be that the composition of the vegetation may have changed," added Dr. Pip. "Horsetails or vetches are toxic to horses and can affect reproduction."

What does this mean to horse owners? As you probably recall, 2010 was a very wet year and most of the central prairies has gone into winter with a very high water table. Add the level of winter snow and a major spring flood becomes, once again, a real possibility. If your horses are normally pastured near a major river which floods, it would be wise to either find higher ground for next year, or find a good hay supply which has not been grown on previously flooded ground. 

SOURCES

Dr. Eva Pip, PhD, Toxicology Professor at the University of Winnipeg. Easy click-through links to the information sites below can be found at www.horsecountry.ca/links.html

Canadian Government papers on PPCPs
US Government papers on PPCPs
Winnipeg Hazardous Waste Recycling
Brandon Waste Management
Regina Waste Management
Calgary Hazardous Waste

www.ec.gc.ca/scitech. Search for "Water S & T"

www.epa.gov/ppcp/basic2.html

www.winnipeg.ca/waterandwaste/garbage/hhw.stm

www.city.brandon.mb.ca/Main.nsf/Pages+By+ID/701

www.regina.ca/Page3124.aspx

www.calgary.ca/portal/server.pt/gateway/PTARGS_0_2_776616_0_0_18/Household+Hazardous+Waste+Drop-off+

**Government has adopted the term
Pharmaceuticals and Personal
Care Products (PPCP) to describe
human-based chemicals in
streams and rivers.**

PPCPs include:

- Prescription and over-the counter therapeutic drugs
- Veterinary drugs
- Fragrances
- Cosmetics
- Sun-screen products
- Diagnostic agents
- Nutraceuticals (e.g., vitamins)

Sources of PPCPs:

- Human activity
- Residues from pharmaceutical manufacturing (well defined and controlled)
- Residues from hospitals
- Illicit drugs
- Veterinary drug use, especially antibiotics and steroids
- Agribusiness