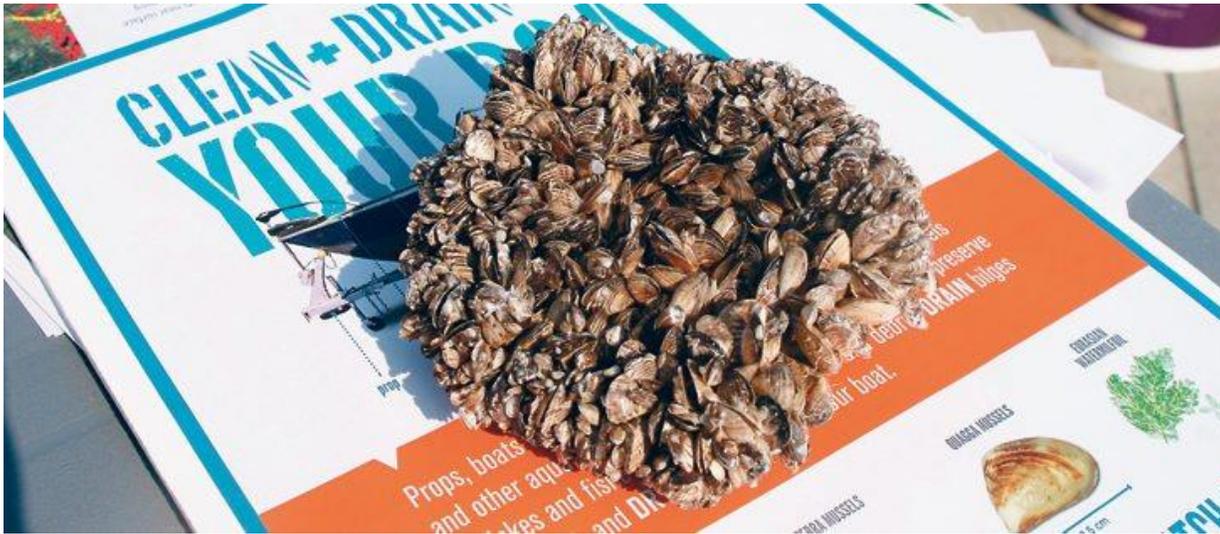


## Pink may be the panther in future mussel tussle



*Experts are testing potassium chloride to kill quagga and zebra mussels, above, before they cause damage to water systems and pipelines. | File photo*

By Barb Glen

MEDICINE HAT — Invasive zebra and quagga mussels have not reached Alberta’s waters yet, but the nasty species’ steady spread north from the United States and west from Lake Winnipeg has Alberta’s water users on edge.

The mussels propagate quickly and can clog water systems, destroy lake and river ecosystems and cause millions in damage. They are difficult to control and kill and no chemicals are registered in Canada to treat them.

Enter The Pink.

Potash, known for its pink colour, is being tested by Alberta Agriculture and the Eastern Irrigation District as a treatment for invasive mussels in irrigation infrastructure.

It has been used on mussels in Lake Winnipeg with limited effect. However, researchers want to see if a formulation held in a pipeline for several hours would kill mussels.

Brad Calder, a research specialist with Alberta Agriculture’s water quality section, gave an overview Oct. 26 of studies to see how potassium chloride could be administered in pipelines and how the solution would affect farmland once expelled.

“To prepare in the event that mussels find their way into our province, we are currently looking into chemical control options to treat the pipelines.”

Calder said potash affects the respiration of mussels resulting in their mortality. It is also a naturally occurring fertilizer that is easily accessible in Saskatchewan.

However, neither potash nor any other treatment against mussels has been registered in Canada.

Alberta field trials have tested a potassium chloride solution in irrigation pivot systems with a target of 100 milligrams per litre of water. In a 2016 field trial using a single pivot with a low-pressure drop-tube system southwest of Brooks, the mixture was held in the pipeline for 48 hours and then applied on 12 acres of land seeded to canola.

Soil nutrients and salts were measured before and after. Calder said there was minimal change in soil pH, electrical conductivity, potassium and chloride at the zero to 15 centimetre soil depth.

Complexity of the study increased this year with several studies in the Eastern, Taber and St. Mary’s irrigation districts involving larger projects, said Calder. Results from those are pending.

Zebra and quagga mussels prefer water pH in the 7.6 to 8.6 range, so southern Alberta conditions would suit them, Calder told those at the Farming Smarter Cypress Conference.

They were introduced to the Great Lakes in the late 1980s, likely by ocean vessels, and since then have moved down the U.S. eastern seaboard and westward as far as Lake Mead.

Last year they were found in Montana's Tiber Reservoir, east of Shelby, which is only 80 kilometres from Alberta's waterways.

The province has implemented mandatory boat inspection at border crossings and monitors 22 reservoirs that see high boat traffic.

If the mussels enter the irrigation system, it will be expensive, said Calder.

The southern Alberta system is valued at \$3.7 billion. It includes 57 reservoirs, 3,900 km of canals and 4,000 km of pipelines and supports 1.6 million acres of farmland.