Missoulian

MICE

Researchers experiment with hot pepper to deter rodents from eating grass seeds

OCTOBER 23, 2012 10:45 PM • BY MARTIN KIDSTON OF THE MISSOULIAN

The deer mice are doing what they do this time of year on Mount Sentinel, gobbling up seeds ahead of winter. But if a team of researchers have their way, the mice may find the seeds a little less appetizing.

Dean Pearson, a research scientist with the U.S. Forest Service's Rocky Mountain Research Station, is toying with ways of attaching the powder derived from the bhut jolokia pepper – one of the hottest known to man – with the seeds of native plants used in restoration work.

Success may keep the mice at bay and help the native grasslands ringing the Missoula Valley thrive after planting. It also may reduce the need for herbicides used on invasive weeds while offering benefits to agricultural producers.

"I've done work to show that mice can have a big impact on seeds," said Pearson. "When they put the seeds down to plant, the rodents come and eat them up. So we're looking to use a cheap and dirty method to protect seeds from mice."

That cheap and dirty method involves the bhut jolokia pepper, which is used in parts of India to keep elephants away. It also has been considered as a non-lethal weapon to flush criminals and terrorists from hiding places.

One man who ate a bhut jolokia pepper on a dare allegedly spent hours vomiting, sweating and hallucinating. Pearson said such reactions to the pepper pertain to mice and men alike, along with all other mammals, making it an effective deterrent.

But the problem lies in how to affix the pepper to the seeds. Pearson said it's too expensive to extract in liquid form, so they're looking for ways to exploit the properties of the pepper in its ground form.

"We're seeing if we can do this ground-up approach to make it as cheap as possible to place on the seeds and protect them from rodents," he said. "If you exclude rodents from this, we can increase germanium substantially."

The team has experimented with waxes and oils, and while both have shown positive results, they've also had problems. Oils, for instance, attract ants and other insects, which also destroy the seeds.

Pearson and other project collaborators, which include the city of Missoula and a local landscaping business, are working in grassland plots around the valley to see what applications work and what don't.

The plots are located on the flanks of Mount Sentinel, along with the North and South Hills, where arrowleaf balsamroot, lupine and native bunchgrasses thrive.

The team will return next spring to see what seeds have survived the ravenous mice to reach germination.

"What we're doing now is putting small plots down to test this," Pearson said. "Some don't have pepper, some do. Some are protected from mice, some are not. We can see what the recruitment is – we can see how much we can improve on this."

If the experiment pans out, Pearson said, it could revolutionize restoration efforts using native plants – including those used by federal agencies – and carry cost-effective agricultural applications.

"There's movement more and more for agencies to use native and not exotic seeds in restoration work," said Pearson. "It would be a really nice product to make available to private users, but part of the trick is to make sure we can attach the pepper to the seeds without inhibiting germination."