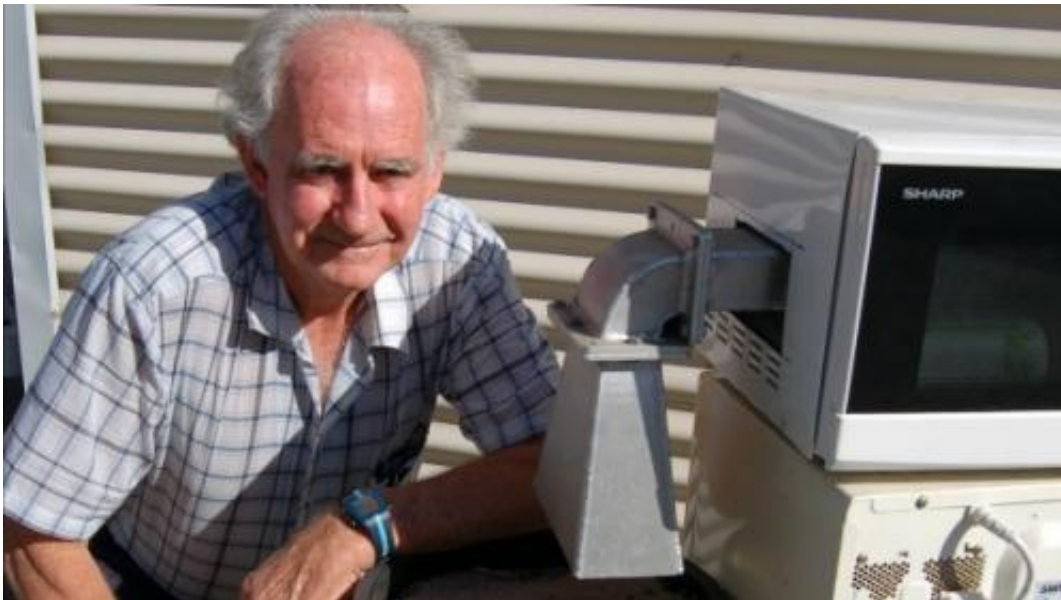


# Scientists rustle up snail solution with microwave

February 26 2015, by Rob Payne

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Department of Agriculture and Food senior research officer John Moore has been exploring the use of microwave technology to control snails and weed seeds. Credit: DAFWA

Researchers at the Department of Agriculture and Food WA have shown low doses of microwave radiation can completely eradicate snail populations in localised areas.

It is hoped this knowledge will become another weapon for WA growers in their fight against a pest currently estimated to cause more than \$6 million of damage to yields annually.

DAFWA senior research officer John Moore says the research came from the merger of two diverse projects.

"For several years, we've been looking at using [microwave technology](#) against weed banks, and we now know from grain monitoring that snails are an emerging problem in Western Australia—one for which we don't yet have any good controls," Mr Moore says.

"Really, it was about putting those two things together and being open to using technology in different ways."

Laboratory testing was done with a standard kitchen microwave fitted with horn antennae to direct microwave radiation at infested soil.

A seven-second dose of [microwave radiation](#) resulted in complete snail control.

## **Technique best for targeted applications**

However, Mr Moore cautions that while the concept has been proven, the technology is not a complete solution.

"Microwaving can't really be done on a wide scale due to cost and speed, but it is good for killing resistant patches of weed or pests," he says.

"This technology could be quite feasible to control snails at a cost of \$10-20 per hectare, where there are small infestations.

"If your entire field is affected, it's not going to be cost-competitive against traditional methods such as using chemicals.

"With that said, it could be very useful for organic farms."

When developed into a commercial device, the microwave applicator could be paired with another innovation being pursued by Mr Moore and grain grower Tim Harrington from Cordering, WA.

They're currently designing a device to detect and GPS-map contaminants in grain as it is being harvested.

The prototype will analyse images in real-time to detect annual ryegrass, three-horned bedstraw and small conical (pointed) snails, which typically occur in patches.

"The device could aid early detection, enabling a more rapid and effective response," Mr Moore says.

These endeavours add to Mr Moore's outside-the-box approaches to biological problems, which include the development of a quadcopter equipped with a camera and sprayer to target and treat invasive tree species in hard-to-access locations.

"Because the chemical is applied straight down, you get very little peripheral damage," he says.

Mr Moore presented as part of the 2015 WA Agribusiness Crop Updates conference.

Provided by Science Network WA

Citation: Scientists rustle up snail solution with microwave (2015, February 26) retrieved 25 April 2024 from <https://phys.org/news/2015-02-scientists-rustle-snail-solution-microwave.html>

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