

Researchers explore using wasp to halt the advance of an invasive plant

November 25 2014

The bud-galling wasp may be just a few millimetres long, but some scientists believe this small insect could solve a big European problem. They want to use the wasp – *Trichilogaster acaciaelongifoliae* – to halt the advance of an invasive plant that is ravaging the environment along the Portuguese coastline.

Acacia longifolia – an Australian native commonly known as long-leaved wattle – is a fast-growing invasive species that is becoming a serious threat to biodiversity in coastal sand dune areas and other habitats in Portugal. In South Africa, the bud-galling wasp has been used successfully as a [biological control agent](#) against the plant, and the Portuguese authorities may follow their example.

However, *T. acaciaelongifoliae* is not present in Europe and neither is it on the EU's register of harmful organisms to be kept out of the territory. So the European Commission has asked EFSA to answer the question: if the wasp were to be introduced to Europe would it pose a threat to plants other than *A. longifolia*? An additional complication is that several *Acacia* species are grown as ornamentals in the region, so EFSA will have to assess whether any release would affect these non-target plants.

EFSA will examine the risk of *T. acaciaelongifoliae* establishing and spreading as well as any potential impact on plant health. Professor Mike Jeger, Chair of EFSA's Panel on Plant Health (PLH), said: "It's an interesting request because typically we start pest risk assessments by examining the probability of entry of an organism, but in this case we

would be issuing an invitation to the wasp.

"Before we open the door, though, it is vital that we accurately assess the potential impact for non-target species. It might be that *T. acaciaelongifoliae* is effective at controlling *A. longifolia*, but if it has harmful side-effects for other plants then we would just be solving one problem and creating another."

A. longifolia was introduced to Portugal from Australia about 150 years ago to curb sand erosion. Since then it has invaded and established to the point where it is now a threat to the very thing it was supposed to protect, drastically altering the landscape and destroying the richness of local plant species.

The plant presents a particular challenge to land managers because its seeds accumulate in enduring seed banks, which means the plant re-colonises quickly after physical clearance or other control methods have been implemented. In addition, fire and other eradication measures can actually promote and accelerate the germination of *A. longifolia* seeds.

For these reasons, Portugal is considering biological control as a more effective – and much cheaper – alternative to manual or chemical clearance, which can require multiple repeat treatments and monitoring. For example, the physical removal of water hyacinth (*Eichornia crassipes*) from the Guadiana basin in south-western Spain between 2006 and 2012 cost €21.7 million and requires follow-up treatment to deal with outbreaks caused by residual plants, fragments and seeds.

Prof. Jeger said: "Using traditional methods to manage invasive [plants](#) is undoubtedly expensive and, in some cases, damaging to the environment. And, of course, they rarely work. The attractions of biological controls are clear: they cost less, they are more sustainable and they are probably safer.

"But we have to be careful. Remember that, in the late 19th century, someone – with the best of intentions – thought it would be a good idea to plant long-leaved wattle in Portuguese sand dunes, and look what happened. Once an organism has been released, the genie is out of the bottle and it's almost impossible to put it back in again. So we have to be absolutely sure that the positives will outweigh the negatives."

What is biological control?

Biological control is the use of one species – typically a parasite, predator or pathogen – to restrain another, problematic, species. The aim is not to destroy or eradicate the target species but to reduce its impact – ecological, economic or both – to a level where it is no longer a problem. The natural enemy of the target pest is known as a [biological control agent \(BCA\)](#).

Biological control has been practised worldwide for more than 100 years, during which time there have been about 7,000 introductions of almost 2,700 species acting as BCAs. It is used widely in many countries and regions, notably South Africa, Australia, New Zealand and North America, but there has been only one officially authorised use of a non-native BCA against a weed in the EU – the release of the psyllid *Aphalara itadori* against Japanese knotweed (*Fallopia japonica*) in the UK in 2010.

Provided by European Food Safety Authority

Citation: Researchers explore using wasp to halt the advance of an invasive plant (2014, November 25) retrieved 10 May 2024 from <https://phys.org/news/2014-11-explore-wasp-halt-advance-invasive.html>

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