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Tiny beetle is killing SA's trees – and nothing can stop it

A beetle smaller than a sesame seed is killing huge trees throughout South Africa, and little can be done to stop it.

The polyphagous shot hole borer, a native of southeast Asia no bigger than 2mm, has found its way to South Africa and is infesting trees at an alarming rate.

According to Professor Marcus Byrne, an Ig Nobel prize winner and entomologist at the University of the Witwatersrand, the beetle bores tunnels into tree trunks where it spreads the fungus *Fusarium euwallaceae*, which effectively cuts off the trees' vascular system, causing them to die.

"It's an ambrosia beetle, which means it carries a fungus which it feeds its babies on. When it introduces that fungus into trees that have never experienced it before, it threatens those trees with illness or death."

Byrne says no one truly knows how the beetles made their way to South Africa.

"We happen to be a very connected world and trade today allows for the movement of goods all around the world. We're not very good at screening these animals that hitchhike around the world on our consumer goods."

No solution yet

According to Byrne, there isn't a solution to rid trees of these beetles once infested.

"You can apply a fungicide, but the scale at which you would have to apply it is just ridiculous.

"There are lots of snake-oil merchants that are trying to sell what they see as solutions, but none of these works."

The local beetle infestation was first noticed last year by Dr Trudy Paap – a postdoctoral fellow at the [Forestry and Agricultural Biotechnology Institute](#) at the University of Pretoria – in the KwaZulu-Natal National Botanical Garden in Pietermaritzburg, and it has since been found nationwide, including in Johannesburg and as far as the Northern Cape.

Johannesburg has what is considered one of the world's largest urban forests with an estimated 10 million trees.

According to Andrea Rosen, co-director of the [Johannesburg Urban Forest Alliance](#), up to 100 000 trees in Johannesburg could already be infested, and the infestation is spreading fast.

"The polyphagous shot hole borer is of grave concern," Rosen told News24 on Tuesday.

"Some projections go up to half a million trees that are affected in Johannesburg alone, which is a substantial part of our urban forest canopy."

Rosen says there is no effective treatment for infested trees apart from cutting them down and chipping the wood or burning it.

A local company, Pan African Farms, has developed a solution that has shown to be effective in laboratory conditions but is pending emergency registration before it can be used on actual trees. Rosen hopes that it will be available within the next two months.

According to Rosen, many trees in Johannesburg residents' gardens could be infested without them knowing about it.

"People only realise something is wrong when their trees die from being so heavily infested.

"These trees then need to be cut down."

Signs of infestation

Signs of an infestation include wilted or missing leaves, dead or dying branches, as well as tiny and randomly spaced holes in the bark. These holes could have staining around them, or a white powder or gum-like blobs oozing from them.

Julian Ortlepp, owner of tree-care company TreeWorks, has been trying to rid trees of the beetle by injecting systemic treatment directly into trees, but says there isn't a sure-fire solution just yet.

According to Ortlepp, the treatment developed by Pan African Farms sounds "promising".

"It is sprayed on to the surface of the tree and penetrates the tree using lipids. In the laboratory the trials have been quite successful," Ortlepp told News24.

Ortlepp says the beetles have infested large parts of Johannesburg's northern suburbs, the West Rand, as well as Bedfordview.

"It's widespread across Johannesburg as well as the rest of the country."

Suburban trees that are affected include exotic trees such as the Japanese and Chinese maple, London plane, English oak, kapok and liquid amber. Indigenous trees including the coral tree and the paperbark are also affected.

On Monday, the Northern Cape department of agriculture, land reform and rural development issued a statement in which it said it was "concerned about the occurrence of a new pest that occurs on the pecan nut trees in the Vaalharts area".

The department warned farmers in the area to "be on the look-out" for the beetle as it can infest "important crop tree species such as orange, peach, grapevine, avocado, macadamia, pecan trees as well as forest trees such as the cabbage tree, monkey plum, common coral tree and honey flower".

The department said infested trees should be reported "or alternatively cut down and chipped".

City Parks 'unresponsive'

In Johannesburg, attempts to engage Johannesburg City Parks and Zoo (JCPZ) have been largely unsuccessful, according to Rosen and Ortlepp.

In April, various stakeholders met with JCPZ officials, including the member for the mayoral committee for community development, Nonhlanhla Sifumba.

A [media statement](#) was issued following the meeting in which Sifumba undertook to do "a thorough assessment to understand the true extent of the infestation, train personnel to monitor, dispose of trees and to identify the borer and other fungal hosts that accompany the beetle, put in place a designated area for the controlled dumping and burning of trees, and ensure that a tree replacement strategy is in place".

"None of this has happened," Rosen told News24.

"We believe it is highly irresponsible for the City not to put out an alert."

According to Ortlepp, "we are willing to assist the City but they have not been forthcoming with information. We have not heard anything from them since our meeting. It is very frustrating."

There's an app for that

Johannesburg resident Hilton Fryer has developed an app for residents to report infestations after he had been battling to save infested trees in his own garden.

"I quickly realised that service providers didn't really know how to deal with this problem," Fryer told News24.

"I quickly developed a fair amount of knowledge about the problem that I then decided to share with the public via my [website](#)."

Fryer developed a tool for members of the public to report infestations on his website, which ultimately led to the development of the app.

Called "Tree Survey", the app is available on both iOS and Android platforms.

It was soft-launched on September 1 and had by Tuesday received 150 reports of infestations.

Fryer calls in each infestation himself.

"I have spoken to the business development manager of City Parks and I am trying to motivate them to assign an individual to work on the system to improve the efficiency in responding to public notifications. The system I developed allows [JCPZ] to communicate directly with the resident."

Fryer told News24 that he knew from indirect information that JCPZ was planning to act on the issue, "but my biggest concern is that they are not communicating with the public".

"They've missed a great window of opportunity to develop an action protocol as we approach spring."

According to Rosen: "If nothing is done, we stand to lose up to 30% of our tree canopy.

"Added to that, dead trees falling on people is a real danger to the public."

Numerous attempts to reach JCPZ were unsuccessful. A spokesperson's cellphone went straight to voicemail and calls to landlines went unanswered.