MEDIA RELEASE

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Comprehensive study investigates control of problem weed silverleaf nightshade

A comprehensive range of techniques including herbicides and simulated thunderstorms and dust are being investigated as part of a research study into silverleaf nightshade in South Australia.

PIRSA researcher Dr John Heap has established large-scale field trials near Port Pirie and Keith as well as smaller plot trials near Adelaide to investigate ways of controlling the noxious weed and providing more information to farmers.

Silverleaf nightshade (*Solanum elaeagnifolium*) is a deep-rooted perennial plant that is widespread across the wheat belt areas of New South Wales, Victoria and South Australia. In SA, up to 200,000 hectares of land are infested. Once established, silverleaf nightshade is difficult to eradicate.

“At the larger trial sites, we have trialled 18 different broadacre herbicide treatments and 12 spot sprayed herbicide treatments to try and control the weed,” he said.

“We are working on replicating what a farmer could do to control the silverleaf nightshade and have already applied treatments to the same plots in two successive years. We are trying to find the most effective and cost-efficient tools as silverleaf nightshade requires repeated applications to kill.”

Dr Heap said while research was still underway, there had been some signs of promising newer treatments.

On smaller plots, research is investigating identifying the key weather patterns that encourage silverleaf nightshade to germinate and establish. The seeds can lay dormant underground for 4-5 years, while an established root system can survive underground for many years before sprouting new shoots.

“We are looking at what weather patterns allow seeds to germinate and keep the seedling plants alive during the warmer months,” he said.

"If we can work this out, we can develop a warning system for farmers. For example, we might be able to say that if you get at least a certain number of millimetres of rain over a series of rainfall events within a certain timeframe, then it is a good time to monitor seedling survival to prevent a new batch of perennial plants establishing.

"In other trials, we're investigating the effectiveness of glyphosate before or after a rainfall event and how that impacts on the weed's survival. We have also gathered dust and spread this on leaves to see if this affects how the glyphosate affects the plant.

"Another investigation has been looking at the different growth stages of the spraying on the weed to identify at what point the sprays are most effective for stopping viable seed set."

Dr Heap's research has also extended beyond the traditional control methods to mapping the economic impact of the weed through the use of precision agriculture technology. He has used laser scanners and GPS to map where silverleaf nightshade is growing and is then correlating that information with yield maps from headers to determine yield loss.

"We have also asked the farmers to spray in strips across the paddock so we can look at the maps and work out if there is any difference between treated or untreated weeds on yield loss."

The project will run until the end of June 2016. To date, the team has held three seminars – in Jamestown, Balaklava and Keith – to provide an update on the research. More update seminars will be held early next year. It is also hoped a best practice management guide will be developed as a result of the study.

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Photo: PIRSA researcher John Heap on NSW study tour
Caption: PIRSA researcher John Heap, pictured here on a recent NSW study tour, is investigating ways to control problem weed silverleaf nightshade.

More information: www.sagit.com.au
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