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Biosecurity key to managing mealy bug outbreak

Outbreaks of an exotic species of mealybug in the Emerald and Burdekin regions of Queensland have growers and authorities on alert for further infestations of the damaging cotton pest.

Maurie Conway, Principal Technical Officer with the Queensland Department of Employment, Economic Development and Innovation (DEEDI), says a recent industry survey revealed that infestations occur in hot spots.



Mr Conway says 53 hectares on 26 farms across the nearly 17,000ha of irrigated cotton in the Emerald irrigation area has been affected.

"What these numbers don't reveal is the enormous cost involved in both controlling and managing the pest on infected farms and the huge cost of ensuring the insects are kept off farms that are still clean," Mr Conway says.

"This has put more financial pressure on cotton farmers who have already suffered reduced yields as a result of cloudy days in January, almost complete cloud in February and a reduction in lint quality due to extended wet weather at harvest."

Kate Charleston, DEEDI Development Extension Officer, says mealybugs impair crop growth and reduce the end-product quality of cotton.

Ms Charleston says key reasons for the fast spread and difficulty in controlling this pest include a waxy coating that protects it from insecticides and natural mortality factors.

"They also have a high reproductive rate and the ability to hide in soil cracks and crevices," she says.

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"They are spread through natural carriers such as raw cotton seeds, wind, water, rain, birds and animals, as well as humans and farm equipment ."

Biosecurity Queensland, part of DEEDI, confirmed the infestations of the exotic mealybug species, commonly known as the Solenopsis mealybug (*Phenacoccus solenopsis*), in February.

"Symptoms of plants infested during the vegetative phase include distorted and bushy shoots, crinkled and/or twisted and bunchy leaves, and stunted plants that dry completely in severe cases," Ms Charleston says.

"Symptoms of late season infestations during the reproductive crop stage include fewer, smaller and deformed bolls, reduced plant vigour, and early crop senescence."



Mealybugs can also stain cotton lint, so this pest has the ability to cause damage to both the quality and quantity of cotton.

"From a biosecurity perspective, the main priority at this point is to try and limit further spread of the mealybug from and within the Emerald and Burdekin areas," Ms Charleston says.

"With harvesting of crops underway in the Emerald area, DEEDI is working closely with the cotton industry to develop wash-down and decontamination protocols for harvesting machinery."

There are no insecticides registered for the control of mealybugs in cotton, however there are a number of management options that can reduce infestation levels and the overall impact of this pest on cotton production.

"When controlling mealybugs in-crop, consider the insecticides that are used in control of other insect pests to conserve the natural enemies of mealybugs," says Ms Charleston.

Ms Charleston says mealybugs have the ability to multiply on different hosts and may initially build up on weeds before migrating to cotton crops.

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"Weeds in and around fields should be removed and uprooted weeds should not be thrown into water channels," she says.

Removal of affected plants at the early stage of infestation may reduce mealybug numbers in the rest of the crop and we advise growers to clean clothes and equipment thoroughly after contact with infested plants as mealybugs easily adhere to clothing and implements.

Greg Kauter, Policy Manager with Cotton Australia has been working closely with government and industry to develop hygiene protocols for growers and contractors. For disinfecting equipment, he advises removing soil and plant material followed by application of Farmcleanse then Pulse Penetrant®. For further information, growers should visit www.cottonaustralia.com.au.

"Implementing key aspects of farm biosecurity, such as practicing good farm hygiene and cleaning all equipment that has been in affected fields will reduce the impact of the mealybug," Mr Kauter says.

Trials in Pakistan and India have shown some promising results in terms of suitable insecticides for controlling this pest. Insecticide trial work to control *Solenopsis mealybug* will commence in Queensland in the near future. Development of integrated pest management (IPM) practices for this pest are also being investigated. Ensuring starting populations are as low as possible through preventive cultural practices like farm hygiene will be critical to managing this new pest.

For specific information on biosecurity associated with mealy bug management, visit www.cottonaustralia.com.au. For general information on biosecurity, visit www.farmbiosecurity.com.au.

If you see anything unusual on your property call the Exotic Plant Pest Hotline on 1800 084 881.

Image 1: Cotton plants affected by exotic mealy bug. (source: Zara Ludgate, DEEDI)
Image 2: Mealy bugs on a heavily infested cotton plant. (source: Zara Ludgate DEEDI)

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