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Chemical Review  
Australian Pesticides and Veterinary Medicines Authority  
GPO Box 3262  
Sydney NSW 2001  
Email: [chemicalreview@apvma.gov.au](mailto:chemicalreview@apvma.gov.au)

## **Submission to the Reconsideration of Neonicotinoid Approvals and Registrations**

Cotton Australia is the key representative body for Australia's cotton growing industry and welcomes the opportunity to make a submission on behalf of cotton growers on the issue of the potential for unacceptable environmental risk and risk to community and worker health resulting from the use of neonicotinoids.

The cotton industry is an integral part of the Australian economy, worth more than \$2 billion per-annum in export earnings and helping to underpin more than 50 rural communities. The use of neonicotinoids is an important part of the cotton industry's integrated pest management guidelines. The cotton industry recognises there are risks associated for unintended off target impacts through the use of neonicotinoids. The industry has a range of policies and programs in place to mitigate these risks. The cotton industry welcomes any improvements that can be made to further mitigate unacceptable risk to the environment or community and worker health while still ensuring access to technologies that enable the industry to remain viable, sustainable and innovative into the future.

### **Current cotton industry use of neonicotinoids**

The following neonicotinoid actives are registered for use in cotton in Australia:

- Acetamiprid
- Clothianidin
- Dinotefuran
- Imadicloprid
- Thiacloprid
- Thiamethoxam

The Cotton Research & Development Corporation (CRDC) collects annual survey data on cotton insecticide use from Crop Consultants Australia Inc. members. The following data indicates a breakdown of topically applied products from the Neonicotinoid group registered for use on cotton (please note this data does not include seed treatments).

The following data shows the annual grams of active for each product applied per season. To compare amounts of individual neonicotinoid products, the total of all insecticides applied in 2018 was 285.63 g/ha.

### **COTTON AUSTRALIA LIMITED**

**Head Office** Suite 4.01, 247 Coward St, Mascot NSW 2020 Australia

**Phone** + 61 2 9669 5222 **Fax** +61 2 9669 5511

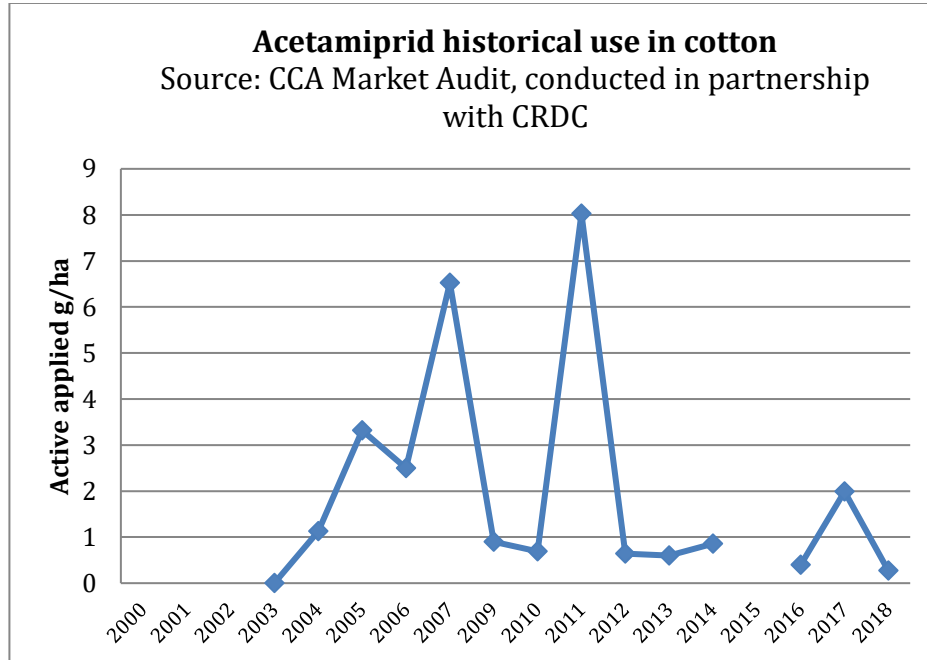
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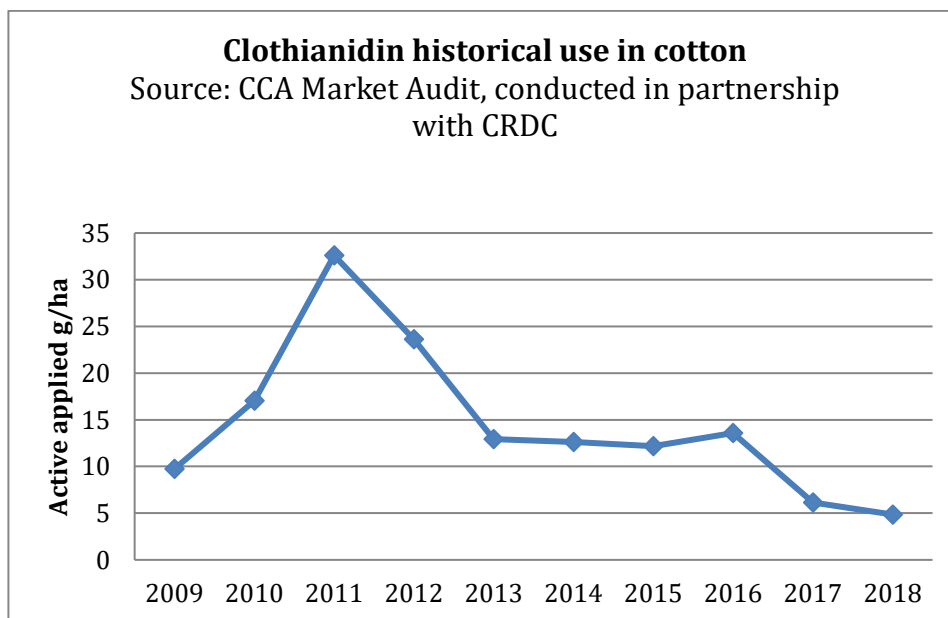
**Narrabri** Level 2, 2 Lloyd St, Narrabri NSW 2390

ABN 24 054 122 879

[www.cottonaustralia.com.au](http://www.cottonaustralia.com.au)



Acetamiprid is primarily used as a foliar in crop insecticide targeting mirids and aphids. The seasonal use fluctuates, depending on pest pressure, but usage has remained below 2g/ha of active applied since 2013.



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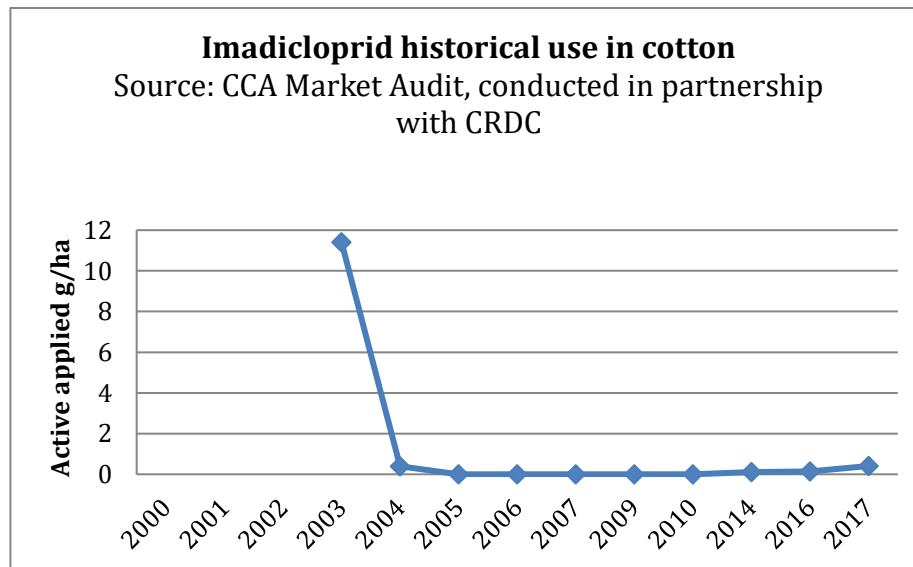
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Narrabri Level 2, 2 Lloyd St, Narrabri NSW 2390

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Clothianidin is primarily used as a foliar insecticide in cotton to control mirids, aphids and green vegetable bug. The seasonal use fluctuates, depending on pest pressure, but historical industry usage shows a declining trend.



Imadicloprid use in the cotton industry is primarily as a seed treatment (Genero 600) however there is very small foliar usage to control aphids, mirids and brown flea beetle.

Dinotefuran and Thiacloprid have registrations in cotton, but no usage of these products has been reported through the CCA market survey.

Thiamethoxam also has foliar registration in cotton, but again no usage has been reported through the CCA market survey. The primary use of thiamethoxam in the cotton industry is as a seed treatment.

The current insecticidal cotton seed treatments available in Australia are:

Cruiser® (600 g/L Thiamethoxam), CruiserExtreme® (600 g/L Thiamethoxam) and Genero 600 (Imadicloprid 600 g/L).

Cotton Seed Distributors (CSD) advise that for the last years (2014 to 2020) an average of 74% of cotton planting seed in Australia is sold with a neonicotinoid seed treatment. Average seed sales for this period are 4000 tonnes per year of total seed sold. CSD further advise that to their knowledge there is no on-farm treatment of planting seed in Australia.

#### Environmental risk management of neonicotinoids in the cotton industry

The Cotton Research & Development Corporation (CRDC) and previous Cotton Cooperative Research Centres (CRCs) have invested in research to document and develop mitigation tactics for impacts on beneficial insects in cotton. Bees have and are an important consideration in the minimisation of off-target impacts of pesticide use in cotton.

The cotton industry strongly promotes the use of an integrated pest management (IPM) system to control pests. An important consideration for Integrated Pest Management programs in cotton is the minimisation of insecticides and miticides on predators, parasitoids and bees in cotton crops. Considerable research effort continues to ensure as much beneficial impact information as possible is available to cotton growers and consultants.

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The industry also applies an Insecticide Resistance Management Strategy, aimed at pre-emptively reducing the risk of resistance developing in insecticides. In the cotton industry IRMS (<https://www.cottoninfo.com.au/sites/default/files/documents/IRMS%202019-20.pdf>) neonicotinoids are restricted to a total of 2 applications per season of any Group 4A product. The IRMS also rates the potential impact of products on beneficial species, including pollinators, so that chemical users are informed of the potential off target impacts of insecticide options.

More detailed information on neonicotinoid impact for both seed treatment and in crop application on specific beneficial species (including spiders, predatory beetles, predatory bugs, pollinators and hymenoptera) is published on pages 8 – 11 of the Cotton Pest Management Guide:

<https://www.cottoninfo.com.au/publications/cotton-pest-management-guide>.

In addition, the cotton industry promotes environmental risk minimisation practices which includes a focus on protecting bees. As well as a number of best practices in myBMP in relation to pesticide application and IPM, there are extension and awareness resources in relation to bees. The cotton industry strongly supports, and promotes, the use of BeeConnected™ as a communication method between hive managers and spray operators to facilitate best practice pollinator protection.

The cotton industry myBMP program includes a number of guidelines aimed at reducing the risk of pesticide run off (through soil, water and sediment) into the environment. These guidelines include:

- All irrigation tailwater is contained either on-farm or in a shared group water supply scheme
- Irrigation discharge points should direct tailwater away from sensitive areas
- Where possible vegetative barriers at least 6 metres wide are maintained between cropping lands and sensitive areas
- The first flush of stormwater runoff from treated areas is retained on-farm
- An effective stormwater management system is in place for managing storm events (e.g. minor, moderate, severe events)

The cotton industry is aware that the use of neonicotinoids poses some environmental risk to non-target invertebrates, however the strong uptake of the above principles helps manages this risk. The alternative products available to control the key pests that neonicotinoids are used for in the cotton industry (aphids, mirids, green vegetable bugs) include synthetic pyrethroids, dimethoate, chlorpyrifos, fipronil and phorate. These alternative products are likely to pose a higher environmental risk to non-target invertebrates, birds and small animals, and in some instances have higher persistence in the environment.

### **Community and worker health risk management of neonicotinoids in the cotton industry**

The biggest usage of neonicotinoids in the cotton industry is in seed treatments. Cotton seed comes pre-treated with the grower choice of fungicides and insecticides applied. All cotton planting seed in Australia is also treated with Peridiam™, a coating aimed at reducing dust from the seed, and improving seed flow through the planter.

Cotton Seed Distributors Ltd (CSD) is currently the sole provider of cotton planting seed to the Australian market. As such, CSD has pro-actively undertaken measures to ensure that our seed treating practices meet the requirements of both current and possible future legislation, in addition to Industry Codes of Practice.

As there are currently no legislated requirements in regards to dust levels in treated cotton seed, CSD has implemented a monitoring program which assesses the levels of dust in treated seed lots. This stewardship program was implemented in 2014 and is based on European dust reference values (ESTA) for crops with a similar seed size to cotton seed.

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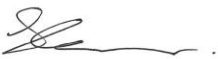
The system uses a Heubach Dust meter and approved EU methods to assess the levels of dust on treated seed. Pre-treated seed is much safer for workers to handle as there is no on farm mixing or seed application of insecticide. The key alternative insecticide to neonicotinoids at planting in cotton is phorate, a S7 product which poses a higher risk to worker safety.

The cotton industry is aware of the current high reliance on neonicotinoid seed treatments, and the resistance risk, as well as potential environmental risks that this may pose however there are currently no viable alternatives available, and the industry has implemented a number of strategies to mitigate this risk.

The cotton industry is also mitigating potential community and worker health risk through spray drift of neonicotinoid spray applications through a comprehensive strategy promoting and educating the industry on best practice spray application, which align with the APVMA spray drift management frameworks, and are delivered in collaboration with other key agricultural industries.

Cotton Australia would welcome an opportunity to provide further information on the reconsideration of neonicotinoid approvals and registrations. For more information, contact Sally Ceeney, Research Direction and Stewardship Policy Officer on 0459189771 or [sallyc@cotton.org.au](mailto:sallyc@cotton.org.au).

Yours sincerely



Sally Ceeney  
Research Direction and Stewardship Policy Officer  
Cotton Australia

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