



In cotton country, facts beat fear factor in war against GM

Tired of lies and distortions over GM, a Queensland cotton grower is fighting back with facts, writes **FIONA SHEEAN**

CONSUMERS have been deluged with inaccurate information when it comes to genetically modified crops, according to Renée Anderson who is revealing her home truths.

Renée and her family not only own and operate two cotton farms at Emerald, Queensland, but she has worked as an agronomist and is also Cotton Australia's representative for the Central Highlands region.

As part of that role she helps educate kids and communities about the environmental and social benefits of growing GM crops and how much the cotton industry has changed over the past 20 years.

"I have two boys so am disappointed to see the use of children in ill-informed and inaccurate videos and memes online that continue to spread fear about the foods and fibre crops we consume or grow," Renée said.

"Parents and carers are a vulnerable group, we all love our kids and it can be easy to fall into the trap of believing misinformation if it is coming from what we consider a reputable source."

Renée has been growing GM cotton and working on research trials and agronomy with other growers since it was released in Australia 22 years ago.

It was initially released as part of the fight against destructive pest *heliolithis* caterpillar, cotton bollworm, but the benefits have reached beyond that.

The GM cotton incorporates the genetic material from a soil-dwelling bacteria, *bacillus*

thuringiensis, which works as a biopesticide to specifically target sucking pests that devastate plants.

Bt is low toxicity, highly targeted to lepidoptera insects, and is also a common organic pesticide. By building Bt genes into plants, they can target the damaging insects directly, instead of through the use of widespread insecticide spraying.

POSITIVE TEST

RENEE, who has just over 500ha of irrigated cropping country, with the irrigation water sourced from the Fairbairn Dam in the Central

Highlands, Central Queensland, said these GM crops had a range of positive impacts on her farm.

"The most important one I see is the massive reduction in insecticide use by up to 98 per cent," she said. "As an agronomist, I care deeply about the ecosystem I work within. These crops provide many on-farm benefits and greatly reduce my environmental impact."

"It means less tractor operations in fields doing chemical applications or cultivations, less fuel costs, and less traffic on the soil, reducing compaction."

She said the targeted nature of Bt meant that beneficial insects like lacewings, lady beetles and parasitic wasps could be introduced, and she had a better balance with the natural environment she farmed in.

Beneficial insects naturally

provided good pest insect control in the field without the use of chemistry.

"It gives us time to focus on other aspects of good farm management and hopefully have a social life off the farm at times," she said.

Renée said the long-term success of growing a GM crop required mobilisation of the whole farm environment and greater understanding of the flows of impacts and services between cropping systems and the surrounding landscapes.

"Things like good refuges and nature strips (protected areas for insects to breed and live when crops aren't being grown) for beneficial insects, good farm hygiene practices — keeping pests, weeds and diseases well controlled, timely practices and improved efficiencies," she said.

BUG OFF

HELIOTHIS *Armigera* and *Punctigera* caterpillars were the main target for Bt cotton, but wider benefits could be achieved through the integration of Bt technology into Integrated Pest Management systems.

"Growers found in those first few years maintaining an appropriate balance and retaining the benefits of Bt cottons requires vigilant resistance management, sustained efforts to enhance beneficial species and non-disruptive, short residual target specific pesticides for key sucking pests such as mirids," she said.

Renée said on her farm and across most other farms in the Australian cotton industry, insecticide use with Bollgard 3 Bt varieties had fallen by up to 90 per cent, greatly reducing envi-

ronmental impacts.

"When conventional cotton was being grown prior to the 1996 introduction and I was working in entomology and agronomy it was not uncommon to see fields sprayed up to 16 times," she said.

"Resistance to pesticides was extremely high and was getting to the point where it was becoming an unsustainable and unviable option to continue growing cotton in my region."

"These days I would average maybe one or two sprays per season with the three-gene technology," she said.

A good range of beneficial insects in the field with the reduction of pesticide use has also seen a drop in secondary pest insects.

A report by PG Economics, which assessed the impact of GM crops in Australia, found GM cotton had helped increase farm income by \$1.27 billion in the last 20 years.

TOP RESULTS

RENEE said 22 million kilograms of active pesticide ingredient had not been applied to crops in Australia because of GM technology and 71.5 million kilograms of carbon emissions had been saved.

In Australia, the CSIRO breeds cotton plant varieties that are suitable for the different cotton-growing valleys with a focus on drought tolerance, disease resistance, high yield and quality.

Development of the GM cotton in Australia is led by the CSIRO and distributed through local companies.

The technology fee for growing GM cotton adds a cost. However, Renée said in terms of seed costs, she found the costs evened out compared



to growing conventional and having to spray.

“People often talk about the expense of having to buy licensed seed, but for me it’s definitely a beneficial expense, especially considering the broader benefits to the environment and farm workers,” she said.

Renée is a passionate supporter of new and beneficial farm management systems and enjoys educating others from her own personal experiences.

“I hope that food companies and consumers look to the evidence and the peer-reviewed science about GM crops, and take myths about GM with a grain of salt,” she said.

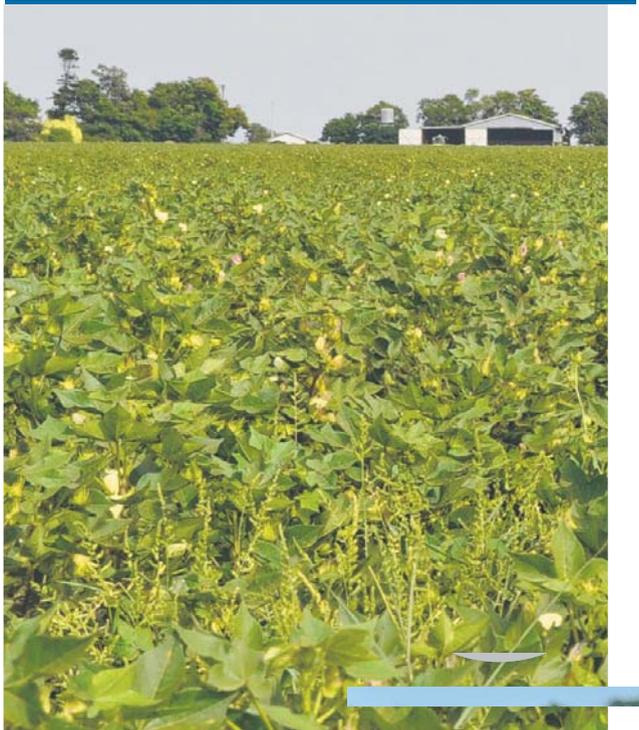
RENEE ANDERSON
EMERALD, QUEENSLAND

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Picture: FIONA SHEEAN

