

Promises, promises; lots of GM promises

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Biotechnology advocates are forever making promises about the future benefits of GM. However, farmers can only use the tools that are, or will be, commercially available to them.

The question whether or not biotech companies can actually deliver a wide range of their products cost-effectively to southern Australian grain growers is far too often overlooked in debates about GM technology that tend to focus on ethical, health and contamination issues.

Roundup-Ready isn't the only GM technology promoted by the biotech advocates. We are told that everything from frost, drought and disease tolerance to high-nutrition foods will all be delivered by GM.

My question is not whether or not it is technically possible to make these things happen, but whether they can be delivered to our 'low-input' farming systems cost effectively?

Take insect resistance, for example.

Growers want to cut down on the use of chemical insecticides such as synthetic pyrethroids (SP), which in our farming system tend to be used mostly on break crops like canola.

In genetically modified cotton, genes from *B. thuringiensis* (Bt) have been used for years as an inbuilt insecticide that significantly reduces the need for SP applications. Bt-cotton has been widely adopted by cotton growers and SP applications have fallen dramatically, resulting in higher populations of beneficial insects and less chemical contamination in the environment.

It has been argued that, based on this experience, a 'Bt canola' would build a reliable path to Integrated Pest Management (IPM) because of the safety of Bt on beneficial predators and pollinators.

Bt has been around for ages and inserting various genes into canola is also a well-established procedure so it seems reasonable to think that delivering a 'Bt canola' should be a relatively straightforward task with known processes and a well understood outcome.

We can't pay a premium greater than we could gain from replacing an established practice with a GM alternative.

However, delivering Bt canola is more complicated than one would expect, given the age of the technologies involved, and when pressed about whether the biotechnology suppliers can make a viable business case to deliver a product such as Bt canola for southern Australia, the prevailing answer from GM proponents is invariably no, or at least not until the economic circumstances change.

A major barrier to GM development for crops such as wheat, barley and canola is that they are relatively low-input crops compared to the primary GM markets such as corn, soy and cotton.

The return on investment for GM providers is derived from having the technology used over large areas of high-input, high-value crops that mean growers can afford to pay a premium for the GM technology and still gain a cost benefit over a traditional practice, such as spraying a cotton crop 15 times with SP insecticide from an airplane.

In a low-input cropping environment, attracting a premium high enough to cover the R&D and the significant costs of regulatory work required to develop and launch a GM technology is extremely difficult.

The Bt canola scenario is further complicated by the need to develop a range of varieties to cover our diverse range of agro-ecological zones. Another cost.

Why lose GM-free status for one herbicide-tolerance option when we already have weeds that are resistant to herbicides?

Producing a Bt canola is eminently possible but simply not commercially attractive compared to other global opportunities.

This is not a criticism of the biotech suppliers. It simply highlights the commercial reality that any company must have adequate sales, in terms of volume and margin, to recoup investment into product development and regulatory requirements.

It is not reasonable to expect biotech companies to take big commercial risks in low-input farming systems when there are many more attractive options in crops like corn, soy and cotton.

So, here is the crux.

We can't do much about our market size or the crops we can grow and it would be very dangerous to scrap our regulatory framework. Moreover, we have to match our inputs to land capacity and simply can't pay a premium greater than we could gain from replacing an established practice with a GM alternative.

If the biotech companies can't cost-effectively deliver decade-old, well-proven GM technology such as Bt into canola at a price that is cost-effective, how will they deliver varieties with other GM-derived capabilities at a price we can afford?

However, if biotech companies can't deliver varieties with promised GM-derived attributes at a cost that is affordable in the context of our low-input, commodity-priced crops, why should we be subjected to what appear to be false promises from GM advocates?

Why do they continue to claim that GM will provide varieties with drought, frost or disease tolerance when the commercial realities mean that is highly unlikely to happen?

As a grain growing industry, we need to be very clear on the potential for GM-delivered attributes for southern Australian cropping beyond Round-up Ready before making a commitment to GM technology and all that implies.

Why lose GM-free status for one herbicide-tolerance option when we already have weed populations that are resistant to herbicides including glyphosate?

