

Formulating success, maintaining trust



“Tread carefully when new generic chemistry appears, seek independent validation and scrutinise that more than the list price.”

STEVE DENNIS

As generic crop protection products steadily enter the UK market, offering growers a cheaper alternative to their branded counterparts, are they really as cost-effective as they first appear? *CPM* investigates why an active ingredient can never truly be copied.

By Janine Adamson

When making the decision between a famous branded tomato sauce rhyming with ‘meinz’, and a supermarket replica version, while both might contain tomatoes, they certainly won’t taste the same.

Although this is simplifying the matter somewhat, parallels can be drawn between the popular condiment and plant protection products – just because a generic version claims to be the same as its branded counterpart, in reality, that simply can’t be true.

That’s the message from BASF UK’s head of research and technical development, Steve Dennis, who says post-patent generics may promise to be identical, but given the full detailed ‘recipe’ of a product is never published, that’s hardly possible.

“Once a product’s patent expires, it’s

then a race for generic manufacturers to hit the market first with their version of the active ingredient, often at a ‘cheaper’ and therefore attractive price point. However, while the ingredient list must be declared during the regulatory approval process, the full make-up of the product isn’t published.

“This means although other manufacturers can try to analyse a product with the aim of copying it, it’s never quite the same. That’s because when a grower purchases an active ingredient, it’s not just a molecule being bought, so much more goes into the formulation,” he explains.

This can include solvents, surfactants, uptake enhancers, biocides, emulsifiers, adjuvants and wetting agents, and additives to boost shelf life, lists Steve. “These are required to maintain tank mixability, or to ensure the chemistry

can penetrate the leaf surface or the fungus being controlled, for example.

“Often the most difficult aspect of developing a new product is getting the active to where it needs to be – the role of formulation is critical in this. It inherently makes the product work while ensuring it’s appropriate and safe to be used on-farm.”



The full picture

When a grower purchases an active ingredient, it’s not just a molecule being bought, so much more goes into the formulation, says BASF’s Steve Dennis.



Consistent differences

According to sprayer operator, Iain Robertson, it's relatively easy to tell the difference between branded and generic chemistry once a product is being poured.

Equally, while these additional components might not be the leading role in a product, they come at a significant price-point. "You might assume the additives in the can are negligible compared with the main molecule, but that's not the case. Therefore, they're a prime target for generic manufacturers wanting to cut costs – it's essentially cutting corners. Sadly, there's no way you can tell that by just looking at a can," warns Steve.

According to sprayer operator, Iain Robertson, it's relatively easy to tell the difference once a product is being poured. "They're physically different, the original product just 'feels' right.

"There's a lot to be said about the packaging too, and with generics, it shows. This includes significant differences in the can itself, whether it glugs, how easily it washes out, how it's recycled and the cardboard outer.

"All of these smaller aspects add up to saving time in the spray store, and during days where down-time isn't an option, you have to maximise every minute," explains Iain.

He highlights that most of the 'big' manufacturers are transitioning to the closed transfer system, which has many benefits for both the operator and a product's performance. "It all adds confidence to the investment being made in a crop."

For Iain, it's also about trust and

knowing a product is backed by UK-specific support. "With R&D manufacturers, you know that everything has been tested and regulated adequately, to ensure a product is as safe and user-friendly as possible.

"Occasionally, something might not go as planned, but you know there's someone available to speak to who'll potentially come out on-farm to walk fields and find a solution. We have a very good relationship with our area reps who are happy to come out and assess a crop, even before a product has been applied," he says.

EXPERTS KNOW BEST

Iain has his own analogy for generic versus branded chemistry – that it's like baking a cake. "You can have the same ingredients as someone like

Mary Berry, and even follow the same instructions, but I can guarantee you the end result won't be as good as theirs.

"So in crop protection, the experts know how to get the best from their active ingredients to deliver the optimum results. Generics might seem cheap, but they often come with a cost later down the line."

He lists the risks as blocked sprayer nozzles, settling out in the tank, and even packaging errors restricting useability. Of course that's before noting any differences in the chemistry's efficacy in the field.

"Something I've noticed in the past is rainfastness – the R&D branded products seem to withstand adversity better, including heavy dews. This is an important factor given the inclement weather we have in the UK now. I'm not sure I'd want to push a generic in quite the same way."

Iain adds that the farm may use a generic option if it makes sound business sense, although he always has in the back of his mind that there may be a subsequent trade-off. "We've been lucky as we can mostly afford to use branded active ingredients, but that's been a conscious choice and there'll be years such as this one, where we have to turn to the generics.

"Farming is a business and you have to make decisions based on return on investment, that said, we certainly wouldn't look to cost-save at T1 or T2, but may make sensible swaps at T0 and T3," he raises.

For those who've been using generics for a while in their plant protection programmes, Steve urges to avoid making assumptions. "Don't presume a new wave of product will continue to perform as you expect. Tread carefully when new generic chemistry appears, seek independent validation and scrutinise that more than the list price.

"Also ask to see trial work and tank-mix



Application test

Images from testing at BASF's Research Centre, Limburgerhof, with BASF Filan and generic boscalid formulations. The generic product shows significant residues on 45µm sieve.



Performance discrepancies

BASF's Comet (pyraclostrobin) (L) versus generic pyraclostrobin (R), indicating a reduction in performance. Photo: BASF, source: Independent trial in Germany

► compatibility information for the generic product itself, not the branded variant it's copying. If this isn't available, ask why; utilise your usual level of discernment when it comes to choosing products.

"Equally, if all of that information is available and appears

robust, using a generic alternative may be less of a concern," says Steve.

He stresses that with some actives nearing the end of their patents, and therefore being vulnerable to imitation, the subject of branded

R&D versus generic chemistry is gaining momentum. "We're also seeing broader sourcing of off-patent products and generic materials which in the past, have conventionally come from Europe."

And although not all post-patent chemistry is sub-par – some larger generic manufacturers and older actives are effective – certain products entering the market are highly concerning, he adds.

"We are aware that authorities in the EU have taken enforcement action against certain generic suppliers. Growers are often caught in the middle where this action is taken and may be left with more questions than answers on which products they should use. At the end of the day, all active ingredients have the potential to be made badly," he warns.

This isn't the case for an R&D formulation though, highlights Steve. "When we develop a product in the first place, we test a whole range of formulations to ensure we only take forward the best version

of that active that is possible.

"Then, as technology advances through the years, it's possible to take older chemistry and improve it by using updated formulation methodologies.

BASF takes pride in continuous development, which is demonstrated through the major upgrades to our F500 (pyraclostrobin) formulations in 2003 and 2020."

Conversely, BASF has tested generic pyraclostrobin which was shown to mirror the firm's 2003 formulation, not the current 2020+ version it adheres to. "When generic manufacturers imitate older formulations in this way, it means the chemistry isn't the best that it could be," says Steve.

There's also the investment that companies like BASF make to support the wider industry too, he comments.

"You can have the same ingredients as someone like Mary Berry, and even follow the same instructions, but I can guarantee you the end result won't be as good as theirs."



New technology

Many manufacturers are transitioning to the closed transfer system, which has benefits for both the operator and a product's performance.

"Whether it's shifts in resistance, understanding new pathogen threats, or general agricultural science, we're spending heavily on research to help the industry to make progress.

"However, there's a level of generic manufacturer out there that only wants to invest the absolute bare minimum into UK agriculture, and they're certainly unlikely to have the same quality assurance standards. They won't be regularly meeting with agronomy companies to brief agronomists, or have that boots-on-the-ground support."

Iain believes this can sometimes be taken for granted on-farm. "Many generic manufacturers copy an active at a certain point in time and that's that. You don't get the same level of evolution that you do from the R&D firms," he concludes. ●

Innovation Insight

Farming today is more complex than ever before. The unpredictability of the weather, control of pest and weeds, market price development, and scarcity of natural resources. To rise to this challenge, farmers require new technologies and solutions.

As a reliable, trusted partner, BASF offers renowned and innovative fungicides, herbicides, insecticides and growth regulators for agriculture and horticulture. Its products and services help farmers to increase their yields and optimise the quality of their products.

CPM would like to thank BASF for sponsoring this article and for providing privileged access to staff and the material used to help bring it together.

