

## Developing new products is no easy task

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Syngenta is a leading agricultural company helping to improve global food security by enabling millions of farmers to make better use of available resources. Through world class science and innovative crop solutions, our 28,000 people in over 90 countries are working to transform how crops are grown. Syngenta invests approximately US \$1.4 billion in Global R&D. Our R&D is driven by over 5,000 passionate and highly skilled R&D employees who operate in the field across the globe, including at our key research facilities in Stein, Switzerland; Jeallot's Hill, United Kingdom; Greensboro, United States; and Beijing, China where they complete the necessary phases in the long process of discovering and developing a new active molecule.

The discovery of a new active molecule is achieved only through the combination of leading edge science and experienced, highly driven expertise. If you've ever wondered what is involved in the process, from discovery to commercial release, read on.

### **Discovery**

New active molecules are either synthesised or chemically extracted from natural sources. They are then screened to establish if they have any biological activity or potential as a pesticide. At this early phase it is a numbers game, on average, for every 100,000 compounds screened, only a handful will make it through to field trials. During field trials we screen each compound to investigate its activity against a variety of weeds, pests, and diseases, across many crops and in a variety of environmental

conditions.

## **Development**

Once a new molecule has been discovered, a sufficient quantity needs to be produced for further testing in-field, in different markets and different climatic zones. Developing a stable formulation is a critical step. This is a science on its own to ensure the compound is formulated for convenient and effective in field use. Throughout the R&D process, multiple tests are conducted to establish, amongst others, the environmental fate and toxicological profile of the molecule.

## **Regulatory & registration**

Each country has its own regulatory process which Syngenta needs to comply with. Australian law requires all agricultural and veterinary chemical products sold in Australia to be registered by the Australian Pesticides and Veterinary Medicines Authority (APVMA).

The requirements for registration include a variety of specific data which includes product efficacy, residues, metabolism, toxicological and environmental studies. After APVMA approval and registration, the final product can be sold commercially. In Australia, it can take approximately two years for a new active constituent to go from application submission to being granted approval by the APVMA. Once a product is registered, it is approved for the purposes and uses stated on the product's label.

In total, for each new active molecule, the entire process can take around ten years, from discovery to first commercial release. The cost to bring a new molecule to market averages around US \$250 million. Companies then have a patent period of between 8 to 10 years before the compound is able to be produced and sold by generic manufacturers.

## **Australian Market**

### ***How does the Australian viticulture market and grape grower benefit from Syngenta's substantial investment in R&D?***

Viticulture plays a significant part in Syngenta's local focus. Syngenta is proud of the quality crop protection portfolio it has introduced to the Australian viticulture market, with products including RIDOMIL<sup>®</sup>, SWITCH<sup>®</sup>, REVUS<sup>®</sup>, SPRAY.SEED<sup>®</sup>, THIOVIT JET<sup>®</sup> and TOPAS<sup>®</sup>. Our current local R&D pipeline shows there are a number of very exciting fungicide and insecticide products due for release in the near future.

The ongoing sustainability of crop protection innovation relies on true R&D companies, such as Syngenta, to continue investing in this space to bring new molecules to market. A crucial link for the success of any new active molecule is the support of advisors, resellers and most importantly, the grower.

### **Tags:**

R&D