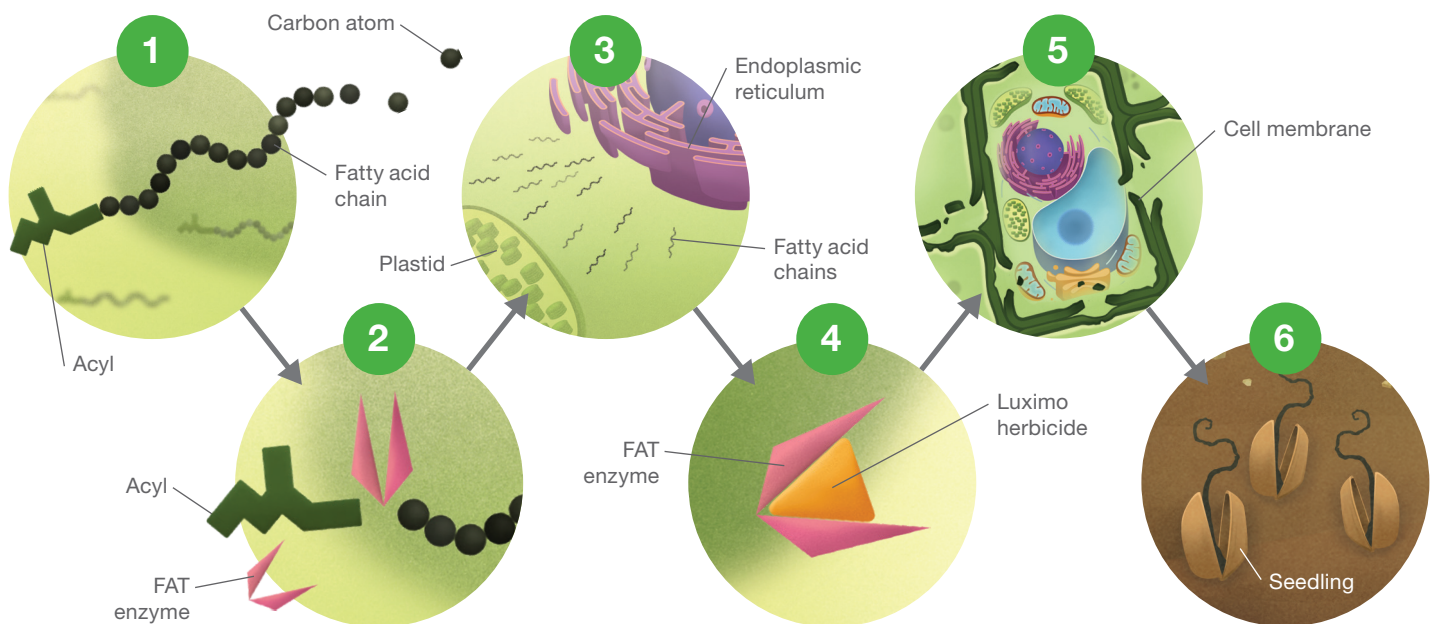


Introducing the first new mode of action in decades.

Luximo™ herbicide disrupts vital cell membrane processes.

In the ongoing global effort to combat grass weed resistance, unique modes of action are critical to protecting crops and the food sources that feed a growing world population. Researchers at BASF focused on finding viable solutions to this challenge and arrived at Luximo herbicide. By uniquely targeting the enzyme family Fatty Acid Thioesterase (FAT), Luximo herbicide irreversibly interrupts vital cell membrane processes. Emerging plant tissue is adversely impacted, disrupting germination and grass weed emergence. The unique mode of action is capable of controlling grasses that have developed resistance, thus complementing sustainable resistance management programmes.

- 1 Intermediate fatty acid chains bind 16 to 18 carbon atoms to Acyl carrier proteins in plant cell plastids.
- 2 To undergo further downstream processing, fatty acid chain elongation is terminated by the enzyme family Fatty Acid Thioesterase (FAT).
- 3 The released fatty acid chains are then exported to the endoplasmic reticulum, where they are further processed and assembled into the lipids that make up the cell membranes.
- 4 Luximo specifically targets the FAT enzyme, blocking its ability to release fatty acid chains from their Acyl carrier proteins.
- 5 Fatty acids never make it to the endoplasmic reticulum, and the assembly of lipids into cell membranes is disrupted.
- 6 When fatty acid storage is depleted, weed seedlings quickly become nonviable and fail to grow.



See things in a new light.

As part of any integrated weed management (IWM) programme, growers seek robust solutions to escalating challenges of herbicide resistance. Since Luximo herbicide targets a novel mode of action, it has no known cross-resistance and is designed to become the backbone of effective, complete and sustainable grass weed management programmes. The active ingredient provides soil residual control in cereal crops against a broad range of grasses, including difficult-to-control blackgrass and ryegrass.

The lightbulb went on.

This breakthrough soil residual herbicide is at the heart of complete grass weed management programmes.

The molecular structure of Luximo herbicide was first published in the early 1980s, however, technical limitations and a complex synthetic process prevented successful commercialization. In a continual quest for new and diverse solutions to meet growers' needs, BASF recently rediscovered this molecule and has proven it effective in controlling economically important cool season grasses, such as blackgrass and ryegrass, including resistant biotypes in cereals.

Shedding light on the unique mode of action.

Luximo herbicide's novel mode of action is triggered through the inhibition of Fatty Acid Thioesterase (FAT). It binds to FAT enzymes, irreversibly disrupting the formation of cell membranes and subsequently emerging plant tissue. In soil residual treatments, weed seedlings quickly become nonviable and are unable to survive and grow when fatty acid storage is depleted.

Key facts:

- **New mode of action** — Luximo herbicide provides an innovative solution to a pressing market need, utilizing a new mode of action to control grasses that have developed resistance in winter cereals. The unique mode of action means that the molecule has no known cross-resistance and complements current resistance management programmes.
- **Key tool to control grasses** — Growers in several geographies will benefit from Luximo herbicide through the effective, residual control of cool season grasses, including those that have developed resistance.
- **Proven performance** — It belongs to a unique herbicide class of chemistry and is destined to become an essential part of the integrated weed management toolbox, strengthening the longevity of existing tools for effective grass weed control.
- **Favourable regulatory profile** — Luximo herbicide has a favourable regulatory profile and meets the high regulatory standards for modern crop protection compounds. There are no detectable residue levels of Luximo herbicide in cereal crops at time of harvest.



Foundational Weed Control

Luximo herbicide provides the foundation for effective control of grass weeds in cereals.



Innovative Resistance Management

Luximo herbicide is an innovative herbicide active ingredient with a new mode of action to address the pressing need to control resistant, cool season grasses in cereals.



Broad Application

Luximo herbicide offers residual grass control with broad crop selectivity and a favourable regulatory profile to allow registration globally.