

factsheet

Understanding the mechanisms

behind herbicide resistance



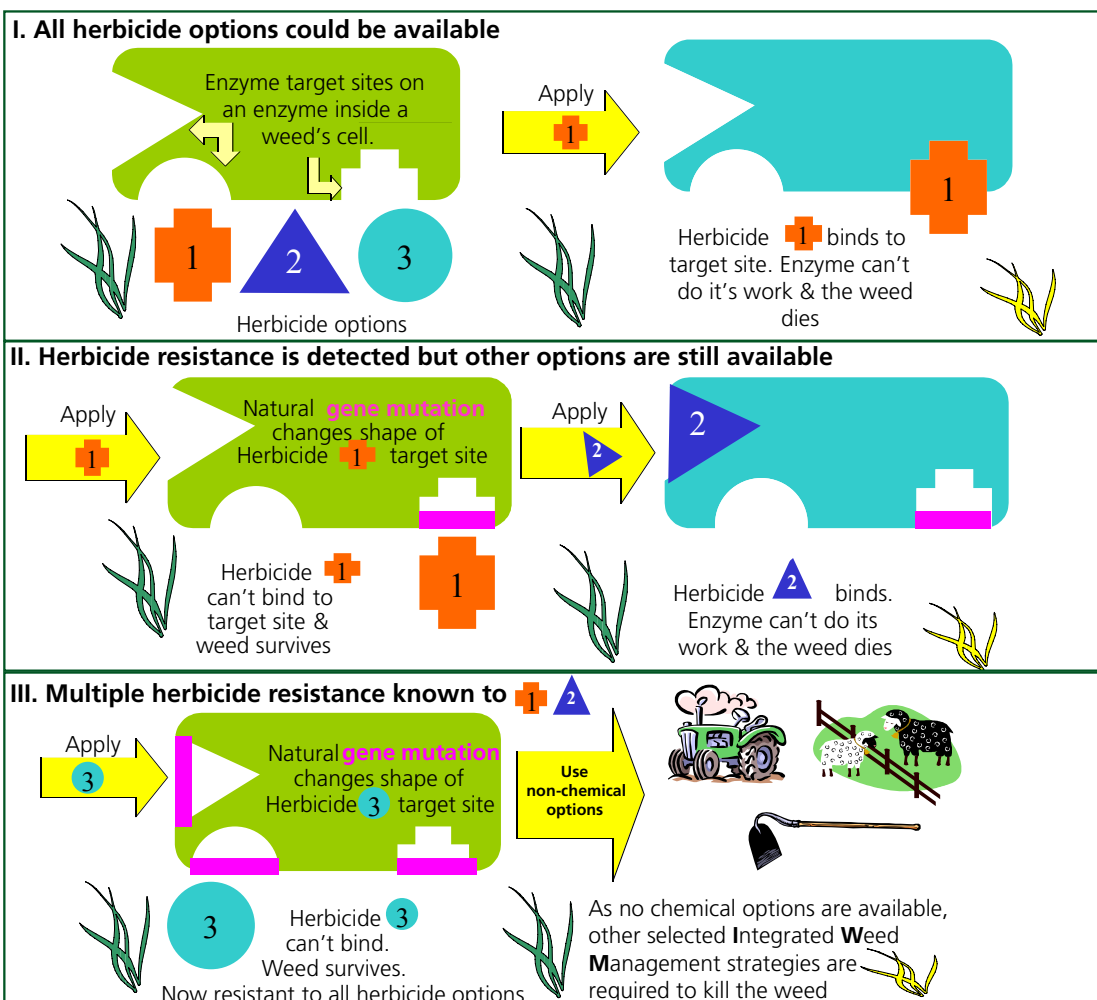
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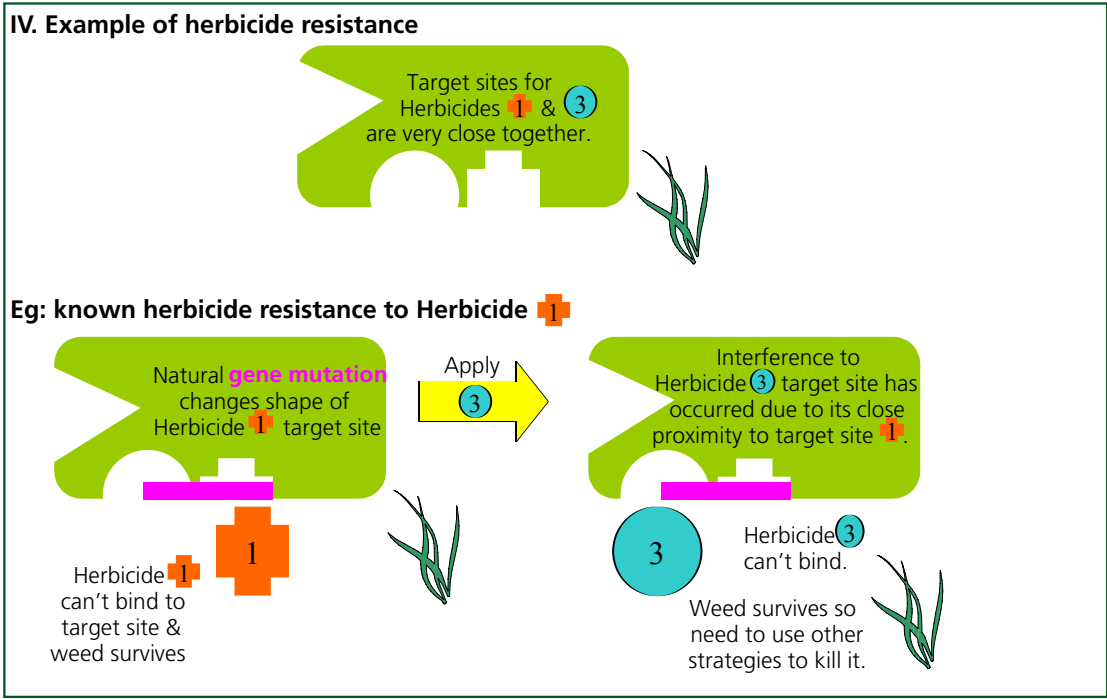
- Understanding the mechanisms behind the development of herbicide resistance can help weed managers fight this serious problem.
- Remember, herbicide resistance in plants occurs due to natural gene mutations.

Visualise the mechanisms

Figures I-IV show the relationship between plant enzymes, enzyme target sites, herbicide attachment and the effect of natural gene mutations and the role they play in herbicide resistance. Enzymes carry out work in plant cells essential for normal plant growth and development. When the chosen herbicide is applied, it binds to the corresponding enzyme target site in the plant cell and the weed dies as the enzyme is unable to do its work.

If there is no herbicide resistance, all herbicide options are available (represented by herbicides 1, 2 & 3).





There are many ways to manage herbicide resistance and to slow its onset. Planning is essential. A simple cropping or weed management system may be easy for farmers and land managers but it is also easy for the weeds. Create a weed management plan that has a range of strategies, is flexible and is reviewed and revised regularly.

Investigate the various weed management options that are available, determine which herbicide groups are the most appropriate and rotate crop and pasture phases in a farming system. Only spray small weed numbers. It is important to 'confuse' the weeds to stop them adapting. For example, in a cropping enterprise, change tillage practices, crops, seeding dates and herbicide groups. By

adopting this approach, farmers can integrate weed management strategies into a flexible whole farm plan. The Weeds CRC is committed to enhancing an integrated and strategic approach to weed management in both farming systems and natural ecosystems across Australia through its research and capacity building.


For further information visit the Weeds CRC's website: www.weeds.crc.org.au

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 Established and supported under the Australian Government's Cooperative Research Centres Program

Ref. 7/2003/fs

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