

Information Sheet

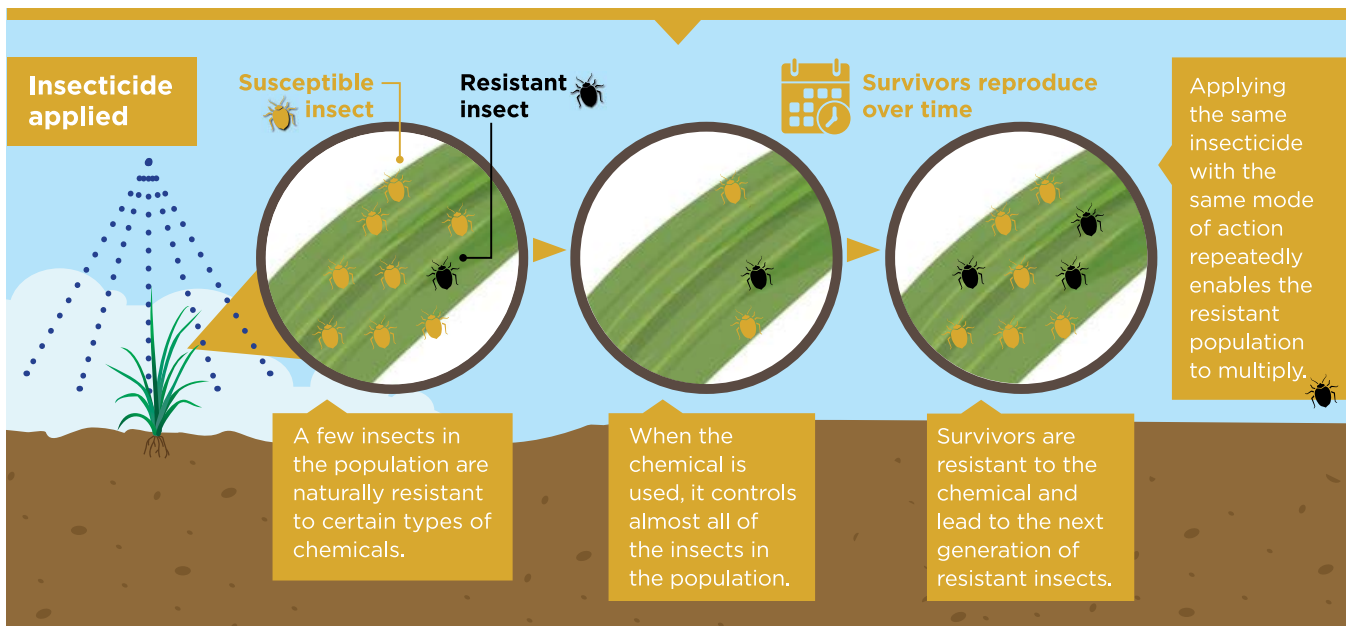
8.10 IRAC Principles and Guidelines- Insecticide Resistance Management (IRM)

Effective management of insect pests depends on a variety of inputs that can include insecticides. Insect pest populations can readily develop resistance to the insecticides used against them due to their abundant numbers and short life cycles.

Resistance may be defined as: *'a heritable change in the sensitivity of a pest population that is reflected in the repeated failure of a product to achieve the expected level of control when used according to the label recommendation for that pest species.'*

How does insecticide resistance evolve?

While insecticides are among the most efficient tools for controlling pest populations, all farmers face a challenge, that every insect control method has a limited life span because pests naturally evolve and become resistant. The more frequently farmers use insecticides with the same active ingredient, the more likely resistance will occur.



Q. Is it possible to prevent or delay insecticide resistance?

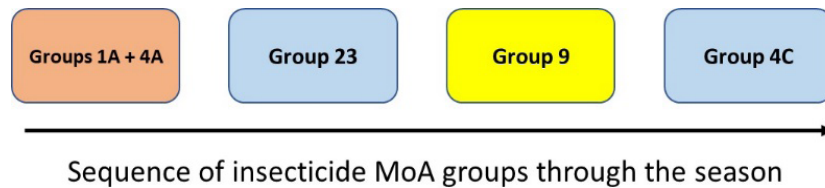
A. Yes, an integrated approach to managing insects using a range of tools can prevent or delay resistance. Effective integrated pest management programs include the use of synthetic insecticides, biological insecticides, beneficial arthropods, cultural practices, crop rotation and pest-resistant crop varieties.

To help prevent or delay the incidence of resistance, IRAC promotes the use of a Mode of Action (MoA) classification of insecticides in effective and sustainable IRM strategies. Available insecticides are allocated to specific groups, based on their target site within the insect's physiology. By using sequences or alternations of insecticides from different MoA classes, resistance is less likely to occur. Available at the IRAC website www.ircac-online.org, this MoA classification list provides growers, extension staff, consultants, and crop protection professionals with a guide to the selection of insecticides in IRM programs.

Effective insecticide resistance management (IRM) strategies seek to minimise the selection of resistance to

any one type of insecticide. In practice, alternations, sequences, or rotations of compounds from different MoA groups provide sustainable and effective IRM.

Example:



Applications are often arranged into MoA spray windows or blocks that can be defined by the stage of crop development and the biology of the pest concerned. More than one spray may be possible within each spray window, but it is generally essential that successive generations of the pest are not treated with compounds from the same MoA group.

Material sourced from www.croplife.org and www.irc-online.org

IRAC The Insecticide Resistance Action Committee (IRAC), a specialist technical group of CroLife International, works to provide a coordinated industry response to prevent or delay the development of resistance in insects and mites. For more information, visit www.irc-online.org

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