



Insecticide Resistance Action Committee
www.irc-online.org

**IRAC International
Insecticide Mixture Statement**

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Further information is
available at:

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**Prepared and Approved by:
The IRAC Executive**

IRAC International Insecticide Mixture Statement

As with applying single active ingredient products, insecticide mixture products should be used with careful consideration of the characteristics of the individual active substances, use pattern and pest complex targeted. The primary intention for the use of an insecticide mixture (tank-mix or pre-formulated mixture) is, in most cases, not resistance management, but pest¹ management. The following should be considered before using insecticide mixtures for insect pest control:

- 1) Mixtures of insecticides provide technical advantages for controlling pests in a broad range of settings, typically by increasing the level of target pest control and/or broadening the range of pests controlled.
- 2) Most mixtures are not primarily used for purposes of insect resistance management (IRM).

¹ Pests include species relevant to both crop protection and public health

- 3) In the majority of settings, the rotation of insecticide modes of action is considered the most effective IRM approach. Insecticide mixtures may offer benefits for IRM when appropriately incorporated into rotation strategies with additional mode(s) of action, but generally a single mixture should not be relied upon alone.
- 4) All of the following should be considered when using mixtures for IRM:
 - a) Individual insecticides selected for use in mixtures should be highly effective and be applied at the rates at which they are individually registered for use against the target species.
 - b) Mixtures with components having the same IRAC mode of action classification are not recommended for IRM.
 - c) When using mixtures, consider any known cross-resistance issues between the individual components for the targeted pest/s.
 - d) Mixtures become less effective if resistance is already developing to one or both active ingredients, but they may still provide pest management benefits.
 - e) The IRM benefits of an insecticide mixture are greatest if the two components have similar periods of residual insecticidal activity. Mixtures of insecticides with unequal periods of residual insecticide activity may offer an IRM benefit for the period where both insecticides are active.

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