



INSECTICIDE RESISTANCE WHAT IT IS AND WHY IT MATTERS



What is insecticide resistance?

Insecticide resistance is a change in the sensitivity of an insect population to an insecticide, resulting in the failure of the insecticide to kill the insect / vector when applied correctly. In other words, insecticide resistance occurs when “insecticide will not kill the target insects as well as it used to”.

How to reduce the development of insecticide resistance?

The Insecticide Resistance Committee and the Southern Region Integrated Pest Management Center recommend applying an Integrated Pest Management (IPM) approach to minimize the development of insecticide resistance.

Monitor the pest. Trap and correctly identify the species that is causing the issue.

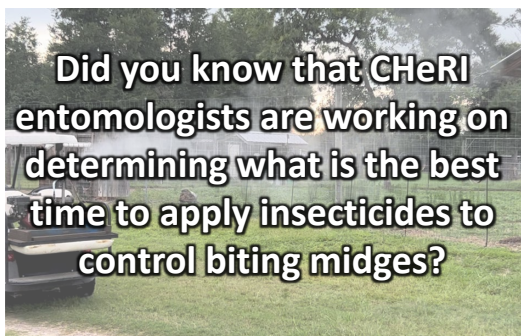
Apply only when necessary. Insecticides should only be used if insects are numerous enough to cause economic losses that exceed the cost of the insecticide plus application.

Integrate multiple control strategies. Consider exploring non-chemical strategies for the control of pests. For example, habitat modification, and insect trapping.

Time insecticide applications correctly. Apply when the insects are most active and vulnerable.

Read and follow the instructions in the label. Do not spray more than what the label recommends.

Rotate insecticides. The repeated and excessive use of an insecticide (for example, permethrin) or insecticide class (for example, pyrethroids) can lead to resistance.

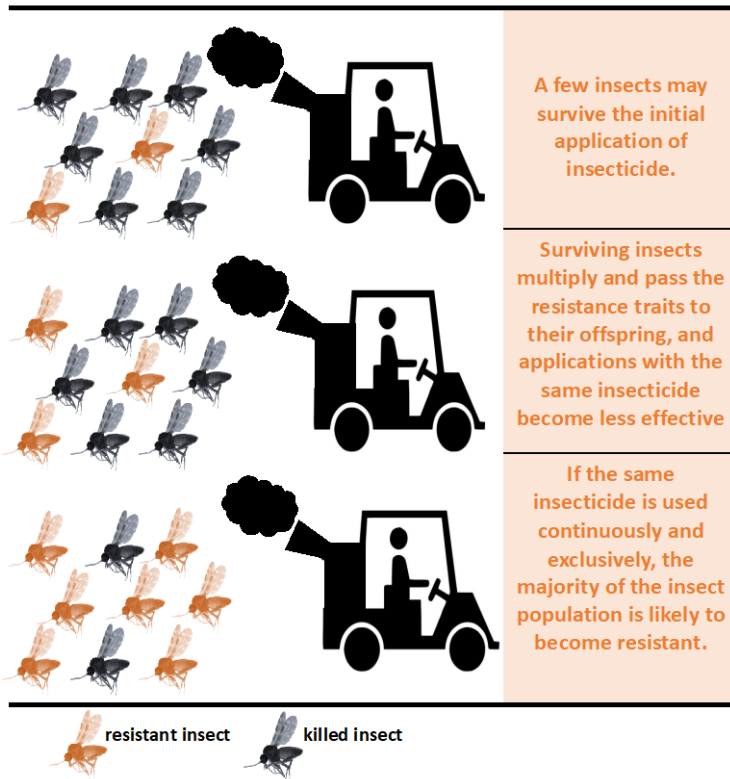


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How does insecticide resistance occur?



A few insects may survive the initial application of insecticide.

Surviving insects multiply and pass the resistance traits to their offspring, and applications with the same insecticide become less effective

If the same insecticide is used continuously and exclusively, the majority of the insect population is likely to become resistant.

Insecticide Classifications

Insecticides are classified by the way they affect insects at a molecular level, this is called “mode of action”. The Insecticide Resistance Action Committee classifies insecticides by number and letter that represent different modes of action.

Insecticide Rotation

The goal of insecticide rotation is to alternate insecticides with different modes of action to minimize the development of insecticide resistance. Note that using products with different trade names will not work to avoid insecticide resistance if the active ingredients are from the same chemical class.

Additional Resources

- Access the insecticide classification <https://irac-online.org/mode-of-action/>
- Pest Information Office <https://pested.ifas.ufl.edu>

Contact us for more information:

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