**Overview**

- Insecticide resistance is a critical issue with important implications for agriculture and human health.
- The Insecticide Resistance Action Committee (IRAC) was established to prevent or delay the development of resistance in insect and mite pests by promoting the development and implementation of insecticide resistance management (IRM) strategies.
- IRAC developed and maintains the Mode of Action (MoA) Classification scheme as a key resource to enable the development of IRM strategies (Fig. 1).
- The objective of this poster is to communicate several recent changes to the IRAC MoA classification scheme, notably with respect to bioinsecticides and nematicides.

**Why Classify Bioinsecticides and Nematicides?**

**Biopesticides**
- Bioinsecticides are currently used in IRM and integrated pest management (IPM) programs and the understanding of MoA of bioinsecticides is growing.
- Some bioinsecticides were already classified by IRAC (e.g. Bt proteins), but others were not.
- Many regulatory agencies are requiring or encouraging the classification of MoA on product labels to facilitate the implementation of sustainable practices (Fig. 2).

**Nematicides**
- The IRAC Nematode Working Group has also formally classified commercial nematicides, including bioinsecticides, in a separate classification scheme with unique MoA categories.
- Please visit www.irac-online.org for printable versions of the Nem classification scheme and further information.

**Bioinsecticides**

- For unknown (UN) groups, target protein responsible for activity is unknown, or uncharacterized.
  - A new MoA classification group is created if there insufficient evidence to demonstrate specificity of interaction for an understanding of MoA e.g. **Group 31 Baculoviruses**
  - If there is insufficient evidence to demonstrate specificity of interaction and lack of understanding of the MoA, it will be placed in an unknown category

**Summary**

- The IRAC MoA scheme remains a living document.
  - As our understanding on the specificity of target site and MoA of chemistry and bioinsecticides improves, IRAC will review the data for (re)classification.
  - Classification of new technologies (e.g. dsRNA) will be undertaken when a request is made to IRAC.
- New technologies will be appended to the classification until they are commercially available.
- Classification and group assignment is the responsibility of the IRAC MoA team. Request for classification/inclusion should be made via the IRAC website.

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