



TECHNICAL BULLETIN

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Understanding Resistance Management Symbols for Improved Management

Several years ago, a worldwide effort was started to educate user groups on resistance management by providing a simple number symbol system that classified each Fungicide, Insecticide, and Herbicide. This was achieved by grouping the pesticidal Modes of Action (MOA) and their Target Sites. The Mode of Action is the biochemical mechanism by which the product interferes with the pest to disrupt normal growth. These are often associated with the Target Site of Action or the physical location in the pest where the pesticide is active. The end product is a simple to use numeric classification chart for the current active ingredients sold today.

What to look for

The US EPA has requested chemical manufactures to voluntarily include a pesticides group number on its product labels. These group symbols are in an easy to read format and standardized across the US. The following is an example of what you will see on Cleary products in the future.

Example of a product containing one active ingredient		
GROUP	11	FUNGICIDE

Example of a product containing two active ingredients		
GROUP	1 M4	FUNGICIDE

Cleary Product Reference Guide

CLEARY FUNGICIDE PRODUCTS		
Group	1	3336 50 WP, 3336 F, 3336 G, 33336 GC, Cavalier (Thiophanate-methyl)
Group	19	Endorse (Polyoxin)
Group	33	Alude (Phosphonate)
Group	1 + M4	Spectro 90 WDG (Chlorothalonil + Thiophanate-methyl)
Group	1 + 2	26/36 Fungicide (Iprodione + Thiophanate-methyl)
Group	M2	Protect DF (Mancozeb) Spotrete F, Spotrete WDG (Thiram)
CLEARY INSECTICIDE PRODUCTS		
Group	4A	TriStar 70 WSP (Acetamiprid)
Group	11A1	Sentry (Bacillus thuringiensis – israelensis)

How to use this information

The basic purpose of this grouping system is to reduce the development of pest resistance to the products being used to manage them. The following points are offered:

- Review your current program, add the group codes after each product, and look for patterns in your product use.
- Avoid using similar group numbers in a tank mix or in sequential applications.
- Do not use group symbols alone to make resistance management decisions. Read the product label for specific resistance management strategies.

Regardless of your approach, it is the users responsibility to understand the best management practices that maximize product performance and resistance management. Cleary has long been a leading advocate in this area and has often wrote about the importance of using and changing multiple Modes of Action (MOA) for effective disease control and resistance management. Additional information is also available to help the following web sites:

- Fungicide – www.frac.info/publications.html
- Insecticide – www.irac-online.org

For additional information on Resistance Management and Tank Mixing, visit our website at www.clearychemical.com.