

FUNGICIDE CLASSIFICATION



Repeated use of fungicides with the same mode of action can result in the selection of fungicide-resistant strains of plant pathogens.

by MODE OF ACTION (MOA)

This section groups fungicides by their mode of action to assist in the selection of fungicides **1)** to maintain greater diversity in fungicide use and **2)** to rotate among effective fungicides with different modes of action to delay the development of fungicide resistance.

FRAC CODE	MODE OF ACTION	CHEMICAL FAMILY	ACTIVE INGREDIENT	PRODUCT EXAMPLES <i>(Trade Name)</i>
MITOSIS DISRUPTERS				
1	MBC (methyl benzimidazole carbamates) B1: β -tubuline assembly in mitosis	Thiophanates	thiophanate-methyl	<i>Topsin</i> , multiple generics and component in premix
CELL MEMBRANE DISRUPTERS				
3	DMI (demethylation inhibitors)/triazoles G1: C14- demethylase in sterol biosynthesis (erg11/cyp51)	Triazoles	cyproconazole	<i>Atto</i> and component in premix
			difenoconazole	Component of <i>Quadris Top</i> and <i>Miravis Top</i>
			flutriafol	<i>Topguard</i> and component in premix, <i>Xyway</i>
			mefentrifluconazole	<i>Revysol</i> , component of <i>Revytek</i> , <i>Veltyma</i>
			metconazole	Component of <i>Headline Amp</i>
			propiconazole	<i>Tilt</i> , multiple generics and component in premix
			tebuconazole	<i>Folicur</i> , multiple generics and component in premix
			tetraconazole	<i>Domark</i> , multiple generics and component in premix
		Triazolinthiones	prothioconazole	<i>Proline</i> and component in premix
RESPIRATION INHIBITORS				
7	SDHI (succinate dehydrogenase inhibitors)/carboxamides COMPLEX II: succinate-dehydrogenase	Pyridinecarboxamides	boscalid	<i>Endura</i>
		Pyridinyl-ethylbenzamides	fluopyram	Component of <i>Propulse</i>
			benzovindiflupyr	Component of <i>Trivapro</i>
			bixafen	Component of <i>Lucento</i>
		Pyrazole-4-carboxamides	fluxapyroxad	Component of <i>Priaxor</i> , <i>Revytek</i>
			penthiopyrad	<i>Vertisan</i>
			pydiflumetofen	<i>Adepidyn</i> , component of <i>Miravis Top</i> , <i>Miravis Neo</i>
11	QoI (quinone outside inhibitors)/strobilurins C3: COMPLEX III: cytochrome bc1 (ubiquinol oxidase) at Qo site (cyt b gene)	Methoxy-acrylates	azoxystrobin	<i>Quadris</i> , multiple generics and component in premix
			picoxystrobin	<i>Approach</i> and component in premix
		Dihydro-dioxazines	fluoxastrobin	<i>Aftershock</i> , <i>Evito</i> , <i>Fluoxastrobin</i> and component in premix
		Methoxy-carbamates	pyraclostrobin	<i>Headline</i> and component in premix
		Oximino-acetates	trifloxystrobin	Component in premix
OXIDATIVE PHOSPHORYLATION UNCOUPLERS				
29	Oxidative phosphorylation uncouplers	2,6-dinitroanilines	fluazinam	<i>Omega</i>
UNKNOWN				
P7	UNKNOWN	Phosphonates	phosphorous acid and salts	Component in premix
MULTI-SITE CONTACT ACTIVITY				
M1	MULTI-SITE CONTACT ACTIVITY	Inorganic	copper (different salts)	<i>Badge</i> and multiple generics
M5		Chloronitriles (Phthalonitriles)	chlorothalonil	<i>Bravo Weather Stik</i> , multiple generics and component in premix

Take Action is endorsed by the following organizations:



For more information and links to additional resources, visit www.IWillTakeAction.com

Fungicides listed in this publication may not be registered for use in all states. Always read and follow the label directions.

Fungicides are classified according to their mode of action, or numeric FRAC code. The list of FRAC codes was developed by the Fungicide Resistance Action Committee and is a technical classification of fungicide modes of action according to scientific data. For more information, please visit www.frac.info.

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by PREMIX

This section lists premix fungicides by their trade names so you can identify the premix's component fungicides and their respective mode of action groups. Refer to the **Mode of Action** section on the left for more information.

PREMIX	ACTIVE INGREDIENT	FRAC CODE
ACROPOLIS	thiophanate-methyl	1
	tetraconazole	3
AFFIANCE	tetraconazole	3
	azoxystrobin	11
AFRAME PLUS	propiconazole	3
	azoxystrobin	11
APROACH PRIMA	cyproconazole	3
	picoxystrobin	11
AVARIS	propiconazole	3
	azoxystrobin	11
AZOXY TEB	tebuconazole	3
	azoxystrobin	11
AZOXYPROP XTRA	propiconazole	3
	azoxystrobin	11
CATAMARAN	potassium phosphite	P7
	chlorothalonil	M5
COVER XL	propiconazole	3
	azoxystrobin	11
CUSTODIA	tebuconazole	3
	azoxystrobin	11
DELARO	prothioconazole	3
	trifloxystrobin	11
DELARO COMPLETE	prothioconazole	3
	trifloxystrobin	11
DELARO COMPLETE	fluopyram	7
	tebuconazole	3
EVITO T	fluoxastrobin	11
	flutriafol	3
FORTIX	fluoxastrobin	11
	tebuconazole	3
FROGHORN	thiophanate-methyl	1
	tebuconazole	3
HEADLINE AMP	pyraclostrobin	11
	metconazole	3
LUCENTO	flutriafol	3
	bixafen	7
MIRAVIS NEO	pydiflumetofen	7
	azoxystrobin	11
MIRAVIS TOP	propiconazole	3
	difenoconazole	3
MIRAVIS TOP	pydiflumetofen	7
	tebuconazole	3
MUSCLE ADV	chlorothalonil	M5
	thiophanate-methyl	1
OVERRULE	tebuconazole	3
	flutriafol	3
PREEMPTOR	fluoxastrobin	11
	fluxapyroxad	7
PRIAXOR	pyraclostrobin	11
	tetraconazole	3
PRIAXOR D	fluxapyroxad	7
	pyraclostrobin	11
PROPULSE	prothioconazole	3
	fluopyram	7
PROTOCOL	thiophanate-methyl	1
	propiconazole	3
QUADRI TOP	difenoconazole	3
	azoxystrobin	11
QUADRI TOP SBX	propiconazole	3
	azoxystrobin	11
QUILT	mefentrifluconazole	3
	azoxystrobin	11
QUILT XCEL	fluxapyroxad	7
	pyraclostrobin	11
REVYTEK	prothioconazole	3
	trifloxystrobin	11
STRATEGO YLD	flutriafol	3
	azoxystrobin	11
TOPGUARD EQ	thiophanate-methyl	1
	tebuconazole	3
TOPSIN XTR	propiconazole	3
	tebuconazole	3
TRIVAPRO	benzovindiflupyr	7
	azoxystrobin	11
VELTYMA	mefentrifluconazole	3
	pyraclostrobin	11
VIATHON	tebuconazole	3
	potassium phosphite	P7
ZOLERA FX	fluoxastrobin	11
	tetraconazole	3