



MEFENOXAM: Reducing Risks to Groundwater from Greenhouse Uses

Practical Approaches for Users

Introduction. The pesticide mefenoxam (a form of metalaxyl) is showing up in Long Island’s groundwater. Mefenoxam fungicide is commonly used in greenhouses. This fact sheet was prepared to help greenhouse growers use mefenoxam more conservatively while continuing to produce high-quality products and protect Long Island’s groundwater.

This factsheet has been developed as part of The Long Island Pesticide Pollution Prevention Strategy, which became effective July 2014. The strategy was developed by the NYS Department of Environmental Conservation (DEC) in collaboration with numerous stakeholders. The goal of the strategy is to protect groundwater and surface water from pesticide related contamination while continuing to meet the region’s pest management needs.

Protect Our Drinking Water

The Long Island aquifer is used by nearly three million people as a source of high-quality potable water. The aquifer is an underground water source that yields over 300 million gallons of water every day. The characteristics that allow the aquifer to reliably supply this much water also make it vulnerable to contamination from above ground. This is especially important for materials like mefenoxam that have widespread use and can move easily through soil to the underlying groundwater. For these reasons, the greenhouse industry needs to exercise careful environmental stewardship when using mefenoxam.

Modify Practices (Best Management Practices)

To reduce or eliminate the risk of mefenoxam moving to Long Island’s groundwater, greenhouse growers should begin modifying their day-to-day practices as follows:

Application Rates - When using SubdueMAXX, use the moderate to high level of the rates labeled for the task. Where low or lower-than-labeled rate is used, the application will likely be ineffective and lead to additional fungicide use, with increasing likelihood of resistance development in the *Pythium*, *Phytophthora*, or downy mildew being targeted. Apply SubdueMAXX if needed, but less frequently and at a high to moderate labeled rate.

Application Timing - SubdueMAXX is effective as a preventive, not a curative treatment, therefore should be used before infection occurs. Use SubdueMAXX no more frequently than once every two months during the production of a crop prone to *Pythium* disease, rather than the 1-month reapplication interval allowed for some uses. Other fungicides in a different FRAC* group can be used between mefenoxam applications.



Application Method - For an effective treatment, SubdueMAXX should be applied as a drench at labeled rates for root diseases; do not attempt to control root diseases with sprays or sprenches. Apply directly to the pot surface so there is little or no solution landing on the greenhouse floor. If SubdueMAXX is used for downy mildew management, it must be tank mixed with another effective fungicide.

*Fungicide Resistance Action Committee (www.frac.info)



A profile of Long Island's sandy/gravelly subsoil.

KEY POINTS

- Three key practice modifications can be applied to improve mefenoxam usage:
- Use moderate to high level label rates
 - Increase length of application interval and rotate with other fungicides.
 - Apply carefully to avoid wasting material outside the containers to be treated.

Some Alternative Fungicides

The following are some of the other fungicides that can be used in alternation with mefenoxam on Long Island.

Disease	Fungicide	Active Ingredient	FRAC Group Code
Pythium Management	Truban, Terrazole, Banrot	etr Diazole	FRAC 14, FRAC 14 + FRAC 1 (Banrot)
	Segway	cyazofamid	FRAC 21
	Biological Controls	<i>Bacillus subtilis</i> , <i>Trichoderma harzianum</i> , <i>T. virens</i> , <i>Gliocladium catenulatum</i> , <i>Streptomyces lydicus</i> , and <i>S. griseoviridis</i>	
Phytophthora Management	Segway	cyazofamid	FRAC 21
	Aliette, Alude, & others	fosetyl-AI and phosphites	FRAC 33
	Insignia, Pageant, Compass, & others	strobilurins	FRAC 11
	Stature	dimethomorph	FRAC 40
	Adorn	fluopicolide	FRAC 43
	Micora	mandipropamid	FRAC 40
	Truban, Terrazole, & Banrot	etr Diazole	FRAC 14 & FRAC 14 + FRAC 1 (Banrot)
Downy Mildew Management	Heritage, Compass, Insignia	strobilurins	FRAC 11
	Stature	dimethomorph	FRAC 40
	Micora	mandipropamid	FRAC 40
	Protect DF & others	mancozeb	FRAC M3

Integrated Pest Management Practices

The following IPM practices are effective for curbing the diseases that mefenoxam is used against.

Pythium Management

1) Use careful sanitation practices	7) Avoid overwatering
2) Propagate on raised benches; place containers on benches, clean gravel or landscape fabric	8) Scout crop regularly for indications of Pythium root rot
3) Inspect plugs and cuttings on arrival	9) Obtain a disease diagnosis
4) Use a well-drained soilless mix	10) Remove diseased plants as they appear
5) Utilize biological controls as a preventive treatment in the mix	11) Utilize fungicides preventively only for known sensitive crops such as geranium, poinsettia and chrysanthemum
6) Avoid over-fertilization	12) Begin treating with fungicides in rotation if Pythium infection is detected

Phytophthora Management

1) Use careful sanitation practices	6) Scout crop for indications of Phytophthora infection
2) Propagate on raised benches; place containers on benches, clean gravel or landscape fabric	7) Obtain a disease diagnosis
3) Inspect cuttings and plugs on arrival	8) Remove diseased plants as they appear
4) Use a well-drained soilless mix	9) Utilize fungicides preventively only for known sensitive crops such as lavender, pansy and poinsettia
5) Avoid overwatering	10) Begin treating with fungicides in rotation if Phytophthora infection is detected

Downy Mildew Management

1) Avoid excess relative humidity	4) Remove diseased plants carefully (bag them as they are removed from the bench) to avoid spreading inoculum
2) Scout disease-prone crops for disease symptoms	5) Begin treating with fungicides in rotation if downy mildew infection is detected
3) Obtain a disease diagnosis	

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