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Is it Time to Consider Minimum Risk Pesticides?

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Controlled environment agriculture (CEA) is experiencing tremendous growth, largely due to innovations in production environments, lighting and nutrition, as well as an increased concern toward food quality.

Fortunately, as traditional pest control strategies have become limited due to regulations and chemical resistance concerns, there have been a number of new, softer pesticide products entering the market to fill the gap. The regular use of bioinsecticides and biofungicides has become standard practice, and several other naturally derived products have proven useful when growing CEA edible and cannabis crops.

Recent developments in the formulation of minimum risk pesticides, commonly known as "25(b)" products, have given growers another reliable alternative that can provide both pathogen and insect control using food-safe ingredients.

What is a minimum risk 25(b) pesticide?

The 25(b) products don't require an EPA registration and don't have a pesticide registration number. Because the EPA has determined that certain minimum risk pesticide ingredients pose little to no risk to human health or the environment, these are exempted from a traditional registration and review process under the Federal Insecticide, Fungicide & Rodenticide Act (FIFRA).

Enacted in 1947, FIFRA is the Federal statute that governs the registration, distribution, sale and use of pesticides in the United States. With certain exceptions, a pesticide is any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest, or intended for use as a plant regulator, defoliant, desiccant or any nitrogen stabilizer.

The certain exceptions from above are used to formulate 25(b) products. They must meet six conditions to be labeled as a minimum risk pesticide, according to the EPA:

1. The active ingredients must be listed in the EPA Active Ingredients for Minimum Risk Pesticide Products (see the QR code for Active Ingredients)
2. The inert ingredients must be on the EPA Inert Ingredients for Minimum Risk Pesticide Products list (see the QR code for Inert Ingredients)
3. All ingredients and percent concentrations must be on the label for transparency
4. The labeling cannot make health-related claims

5. Company name and contact information must be provided on the label
6. The label cannot include any false or misleading statements

How do minimum risk products fit into our pest control programs?

They're made from ingredients that are relatively safe for workers, allowing a zero-hour restricted entry interval (REI), zero-day pre-harvest interval (PHI). There are no restrictions on the number of applications per growing cycle or limits on the number of consecutive applications, making them very useful as a rotational partner for both microbials and conventional chemistry.

Commonly being OMRI organic certified, 25(b) pesticides are labeled for all edible crops and approved for use on cannabis crops in some states. Initially, many states allowed only 25(b) products on cannabis and hemp crops, and some still retain that restriction. Currently, several states have an "allowed" or approved list for crop protection products on cannabis or have a list of requirements that include state registration and specific labeling, including broad crop use language and PHI to help determine approval for use on cannabis— *"it is the grower's responsibility to determine what they can and cannot use in their state."*

It's important to understand that most 25(b) products contain botanical oils, and many formulations also include alcohols, soaps, surfactants, acids and other ingredients that can contribute to phytotoxicity damage, also referred to as "phyto." Differences in formulations and refining processes also impact efficacy and the tendency to burn foliage.

Griffin Greenhouse Supplies carefully evaluates 25(b) products for efficacy and plant safety concerns, as well as helps educate growers on how to apply them correctly. Applications should be made in low to moderate light conditions, when temperature and relative humidity are below 85F and 85%, respectively, to ensure that the oils dry quickly (preferably within one to two hours of application) with minimal stress on the plants. Plants should never be under drought or heat stress when any sort of pesticide is applied.

As these products become more sophisticated, they're beginning to join other biopesticides and biofungicides in spray rotations for edibles, cannabis and even ornamentals as part of a robust IPM program. Utilizing softer chemistry like these minimum risk pesticides along with microbial products as a preventative measure when pest pressure is low can save conventional chemistry for curative or "rescue" applications when necessary. **IG**

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Visit www.epa.gov/minimum-risk-pesticides/active-ingredients-allowed-minimum-risk-pesticide-products for EPA Active Ingredients and Minimum Risk Pesticide Products.

Visit www.epa.gov/minimum-risk-pesticides/inert-ingredients-approved-use-minimum-risk-pesticide-products for EPA Inert Ingredients for Minimum Risk Pesticide Products.

Examples of 25(b) minimum risk pesticides

Product	Pests Controlled	OMRI	Active Ingredients (A.I.)
Ecotec Plus			Rosemary Oil, Peppermint Oil, & Geraniol.

EpiShield O	Mites and soft-bodied insect pests including: Aphids, Broad Mites, Mealybugs, Spider Mites, Thrips, & Whiteflies	Yes	Peppermint Oil & Clove Oil
Pest Out			Cottonseed, Clove & Garlic Oils
Romivex DIP			Rosemary Oil
TetraCURB MAX			Castor, Rosemary, Clove & Peppermint Oils
Mildew Cure	Powdery Mildew		Cottonseed, Corn & Garlic Oils