



# TECHNICAL BULLETIN

July 15, 2019  
Supersedes February 4, 2019

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## Department Approved Active Ingredients for Growers – Updated

The intent of this technical bulletin is to release an updated list of departmental approved chemicals that can be used in the cultivation of marijuana in accordance with the Medical Marijuana Facilities Licensing Act (MMFLA) and the Administrative Rules.

Rule 47(11) (R 333.247) states “the department shall publish a list of approved chemical residue active ingredients for growers to use in the cultivation and production of marijuana plants and marijuana products to be sold or transferred in accordance with the act or these rules.”

Use of unauthorized chemicals will be referred to the Marijuana Regulatory Agency (MRA) Enforcement Section for investigation and inspection. This may result in sanctions, including, but not limited to, license denial, limitation, fines, revocation, suspension, nonrenewal, administrative holds, and orders to cease operations. The department may issue future lists that supersede the information contained in this bulletin.

**Please note:** The Natural Resources and Environmental Protection Act, 1994 PA 451, Part 83 et seq. and Michigan Department of Agriculture & Rural Development (MDARD) regulations apply to all pesticide use; marijuana is no exception. Specifically:

- Any pesticide or pest control companies, contracted or used by marijuana facilities to apply pesticides, shall obtain a commercial applicator license through MDARD.
- If a product has a label, applicators shall fully adhere to the label. This includes when using pesticide products in marijuana cultivation, applicators must not use a rate that is higher than the rates listed on the label.

For questions related to pesticide application and labeling, please contact MDARD at 517-284-5655.

The following approved chemical active ingredients are organized by the intended target:

### Insecticides and Miticides

- Ammonium salts
- Ammonium nonanoate
- Azadirachtin
- Bacillus subtilis GB03
- Bacillus thuringiensis
- Bacillus thuringiensis sub. kurstaki
- Bacillus thuringiensis sub. israelensis
- Horticultural oils (petroleum oil)
- Insecticidal soaps (potassium salts of fatty acids)
- Isaria fumosorosea
- Linseed oil
- Neem oil
- Nerolidol



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- Beauveria bassiana
- Beauveria bassiana strain ANT-03
- Beauveria bassiana strain GHA
- Burkholderia spp. strain A396
- Capric acid
- Caprylic acid
- Capsaicin
- Capsicum oleoresin
- Chromobacterium sub strain PRAA4-1 cells
- Chromobacterium substugae
- Cinnamon and cinnamon oil
- Citric acid
- Farnesol
- Garlic and garlic oil
- Geraniol

## Fungicides and Antimicrobials

- Ammonium salts
- Bacillus amyloliquefaciens strain D747
- Beauveria bassiana
- Beauveria bassiana strain ANT-03
- Bacillus pumilus strain GHA 180
- Caprylic acid
- Cloves and clove oil
- Copper hydroxide
- Copper octanoate
- Copper oxychloride
- Corn oil
- Cottonseed oil
- Eugenol
- Fenhexamid
- Gliocladium catenulatum Strain J1446
- Gliocladium virens

## Vertebrate Repellants

- Castor oil
- Geraniol

- Paecilomyces fumosoroseus
- Paraffinic oil (mineral oil)
- Piperonyl\_butoxide
- Potassium bicarbonate
- Potassium sorbate
- Rosemary oil
- Sesame and sesame oil
- Sodium bicarbonate
- Soybean oil
- Sulfur
- Sucrose octanoate
- Sucrose octanoate esters
- Sulfur
- Thyme and thyme oil
- White pepper

- Hydrogen Peroxide
- Mono and di-potassium salts of phosphorous acid
- Neem oil
- Peppermint and peppermint oil
- Peroxyacetic Acid
- Potassium bicarbonate
- Potassium silicate
- Reynoutria sachalinensis extract
- Rosemary and rosemary oil
- Sodium bicarbonate
- Sodium Carbonate Peroxyhydrate
- Streptomyces lydicus wyec 108
- Trichoderma saperellum strain ICC 012
- Trichoderma gamsii strain ICC 080
- Trichoderma harzianum
- Trichoderma harzianum rifai strain KRL-AG2

*This technical bulletin does not constitute legal advice and is subject to change. It is intended to provide a technical clarification only to the Marijuana Regulatory Agency's Administrative Rules. Licensees are encouraged to seek legal counsel to ensure their operations comply with the Medical Marijuana Facilities Licensing Act and associated Administrative Rules.*

More information on the MRA can be found at the bureau's [website](#)