



# TECHNICAL BULLETIN

April 13, 2022

Supersedes March 7, 2022

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## Agency Approved Active Ingredients for Growers

The intent of this technical bulletin is to update the list of Agency approved active ingredients that can be used in the cultivation of marijuana.

### Rule 6(3) in the Marihuana Operations Rule Set – R 420.206 (3)

The agency shall publish a list of approved chemical residue active ingredients for cultivators to use in the cultivation and production of marihuana plants and marihuana products to be sold or transferred in accordance with the acts or these rules.

Use of banned chemicals will be referred to the Cannabis Regulatory Agency (CRA) Field Operations and/or Operations Support Section for investigation and inspection. This may result in sanctions, including, but not limited to, license denial; license limitation or restriction; fines; revocation, suspension, or nonrenewal of a license; administrative holds; and/or orders to cease operations. The CRA 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 licensed marijuana cultivators to apply restricted use pesticides, shall obtain a commercial applicator license through MDARD.
- Applicators shall fully adhere to the product label agriculture use requirements, this includes but is not limited to application rates, re-entry intervals (REI), pre-harvest intervals (PHI) and use of personal protection equipment when using pesticide products in marijuana cultivation.

For questions related to pesticide application and labeling, please contact MDARD at 517-284-5653.

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

- <sup>B</sup> Bactericide
- <sup>F</sup> Fungicide
- <sup>H</sup> Herbicide
- <sup>I</sup> Insecticide
- <sup>M</sup> Miticide
- <sup>R</sup> Rodenticide

*This technical bulletin does not constitute legal advice. Licensees should seek legal counsel to ensure their operations comply with all applicable laws and administrative rules. More information on the CRA can be found at the agency's [website](#)*

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Ammonium salts  
Ammonium nonanoate (BioSafe Weed and Grass Killer<sup>\*,H</sup>)  
Azadirachtin (AzaMax<sup>\*,I,M</sup>)  
*Bacillus amyloliquefaciens* strain D747 (Ethos XB<sup>\*,F,I</sup>)  
*Bacillus pumilus* strain GHA 180 (Sonata<sup>\*,F</sup>)  
*Bacillus subtilis* GB03 (Champion Max<sup>\*,F,B</sup>)  
*Bacillus subtilis* QST strain 713 (Cease<sup>\*,F</sup>)  
*Bacillus thuringiensis* (BT Now<sup>\*,I</sup>)  
*Bacillus thuringiensis* subsp. *kurstaki* (DiPel ES<sup>\*,I</sup>)  
*Bacillus thuringiensis* subsp. *israelensis* (Teknar CG<sup>\*,I</sup>)  
*Beauveria bassiana* (Mycotrol WPO<sup>\*,I</sup>)  
*Beauveria bassiana* strain ANT-03 (BioCeres WP<sup>\*,I</sup>)  
*Beauveria bassiana* strain GHA (BotaniGard 22WP<sup>\*,I</sup>)  
*Burkholderia* spp. strain A396 (Venerate XC<sup>\*</sup>)  
Capric acid (Homeplate<sup>\*,H</sup>)  
Caprylic acid (Homeplate<sup>\*,H</sup>)  
Capsaicin (Miller Hot Sauce Animal Repellent<sup>\*,I,R</sup>)  
Capsicum oleoresin  
Castor oil  
*Chromobacterium* sub strain PRAA4-1 cells (Grandevo WDG<sup>\*,I,M</sup>)  
*Chromobacterium substugae* (Grandevo WDG<sup>\*,I,M</sup>)  
Cinnamon and cinnamon oil  
Citric acid  
Cloves and clove oil (Ex-icute<sup>\*,I</sup>)  
*Coniothyrium minitans* (as a soil amendment, ConTans WG<sup>\*,F</sup>)  
Copper hydroxide (Badge SC<sup>\*,B,F</sup>)  
Copper octanoate (Cueva<sup>\*,F</sup>)  
Copper oxychloride (Badge SC<sup>\*,B,F</sup>)  
Corn oil  
Cottonseed oil  
Ethanol  
Eugenol  
Farnesol (Biomite<sup>\*,I</sup>)  
Fenhexamid (Elevate 50 WDG<sup>\*,F</sup>)  
Garlic and garlic oil (Captiva<sup>\*,I</sup>)  
Geraniol (Biomite<sup>\*,I</sup>)  
*Gliocladium catenulatum* strain J1446 (LALSTOP G46 WG<sup>\*,F</sup>)  
*Gliocladium virens* (SoilGard 12G<sup>\*,F</sup>)  
*Heterohaditis bacteriophora* (NemaSeek-Hb Beneficial Nematodes<sup>\*,I</sup>)  
*Heterohaditis indica* (NemaSeek-Hi Beneficial Nematodes<sup>\*,I</sup>)  
Horticultural oils (petroleum oil)  
Hydrogen Peroxide (OxiPhos<sup>\*,B,F</sup>)  
Insecticidal soaps (potassium salts of fatty acids)  
Iodine (10% Povidone - Iodine)  
Isopropyl Alcohol  
*Isaria fumosorosea* (PFR-97 20% WDG<sup>\*,I</sup>)  
Kaolin (Surround CF<sup>\*,I,M</sup>)  
Linseed oil  
Milk  
Mineral Oil (Suff-oil X<sup>\*</sup>)  
Mono and di-potassium salts of phosphorous acid (Appear<sup>\*,F</sup>)  
Neem oil (Trilogy<sup>\*,F,I,M</sup>)  
Nerolidol (Biomite<sup>\*,I</sup>)  
*Pseudomonas chlororaphis* strain AFS009 (Howler fungicide<sup>\*,F</sup>)

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Paraffinic oil (mineral oil, 415 Superior Spray Oil<sup>\*,F,I,M</sup>)  
Peppermint and peppermint oil (Mantis EC<sup>\*,I</sup>)  
Peroxyacetic acid  
Piperonyl butoxide  
Potassium bicarbonate (Kaligreen<sup>\*,F</sup>)  
Potassium silicate (Sil-Matrix LC<sup>\*,F,I,M</sup>)  
Potassium sorbate  
*Reynoutria sachalinensis* (Regalia<sup>\*</sup>)  
Rosemary and Rosemary oil (Mantis EC<sup>\*,I</sup>)  
Sesame and sesame oil (Ex-icute<sup>\*,I</sup>)  
Sodium dicarbonate  
Sodium benzoate  
Sodium carbonate peroxyhydrate  
Sodium citrate  
Sodium chloride  
Sodium hypochlorite  
Sodium lauryl sulfate (Green Cleaner<sup>\*</sup>)  
Soybean oil (Mantis EC<sup>\*,I</sup>)  
*Stienernema carpocapsae* (NemaAttack-Sc Beneficial Nematodes<sup>\*,I</sup>)  
*Stienernema feltiae* (NemaAttack-Sf Beneficial Nematodes<sup>\*,I</sup>)

*Stienernema kraussei* (NemaAttack-Sk Beneficial Nematodes<sup>\*,I</sup>)  
*Stienernema riobrave* (NemaAttack-Sr Beneficial Nematodes<sup>\*,I</sup>)  
*Streptomyces lydicus* wyec 108 (Actinovate AG<sup>\*,F</sup>)  
Sucrose octanoate  
Sucrose octanoate esters  
Sulfur (Cosavet DF<sup>\*,F,I,M</sup>)  
Thyme and thyme oil (Proverde<sup>\*,I</sup>)  
*Trichoderma asperellum* strain ICC 012 (Tenet WP<sup>\*,F</sup>)  
*Trichoderma gamsii* strain ICC 080 (Tenet WP<sup>\*,F</sup>)  
*Trichoderma harzianum* Rifai strain T-22 (RootShield<sup>\*,F</sup>)  
*Trichoderma harzianum* Rifai strain KRL-AG2 (Trianum-G<sup>\*,F</sup>)  
White pepper  
Yeast (not active - often, dead yeast is added as an ingredient in commonly used name brands)

***\*Mention of trade names or commercial products in this bulletin is solely for the purpose of providing information and does not imply recommendations or endorsement by the MRA. There may be additional products which include this active ingredient, brand name provided as an example.***