FOR THE FIRST TIME, EPA APPROVES PESTICIDES FOR USE IN CULTIVATING HEMP

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Now that the 2020 growing season is upon us, hemp farmers need to think carefully about crop management and pest control. While industrial hemp (cannabis sativa L. subsp. sativa var. sativa) is a robust plant, it is still subject to attack by many types of insects, as well as bacteria, fungi and numerous other pests.[1]

Fortunately, the Environmental Protection Agency recently approved ten pesticides for use in cultivating hemp during the 2020 growing season. Nine of these products are biopesticides and one is a conventional pesticide. EPA's action expands the range of crop-management options that growers have to combat insects, mites, nematodes and other agricultural pests, as well as plant diseases such as bacteria and fungi to which hemp can be especially susceptible,

The EPA defines biopesticides, also known as biological pesticides, as "naturally occurring substances that control pests (biochemical pesticides), microorganisms that control pests (microbial pesticides), and pesticidal substances produced by plants containing added genetic material (plant-incorporated protectants) or PIPs."[2] Biopesticides are derived from natural materials such as animals, plants, bacteria, and certain minerals. Typically, biopesticides have unique modes of action and are considered reduced risk pesticides. Biopesticides fall into three major classes:

- **Biochemical pesticides** - naturally occurring substances or synthetically derived equivalents that have a non-toxic mode of action to the target pests, and have a history of exposure to humans and the environment demonstrating minimal toxicity;

[1] Colorado State University maintains an excellent database of hemp pests, focusing on insects. The CSU database is accessible online at: https://hempinsects.agsci.colostate.edu/hemp-insects-text/

[2] The EPA defines Plant-Incorporated Protectants as "pesticidal substances produced by plants and the genetic material necessary for the plant to produce the substance."

- **Microbial pesticides** - microorganisms that produce a pesticidal effect through modes of action that often include competition or inhibition, toxicity and even use of the target pest as a growth substrate. They may be: (i) Eukaryotic microorganisms, including, but not limited to, protozoa, algae, and fungi; (ii) Prokaryotic microorganisms, including, but not limited to, bacteria; and (iii) Autonomousreplicating microscopic elements, including, but not limited to, viruses; and

- **Plant-incorporated protectants** - pesticidal substances that plants produce and the genetic material added to the plant. For example, scientists can take the pesticidal protein gene for the soil-based bacterium Bacillus thuringiensis (Bt) and introduce that gene into the plant's own genetic material; then the plant, instead of the Bt bacterium, manufactures the substance that destroys the pest. EPA regulates the protein and its genetic material, but not the plant itself.

Before a pesticide or biopesticide can be marketed and used in the United States, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)[3] requires that EPA evaluate the proposed pesticide to assure that its use will not pose unreasonable risks of harm to human health and the environment. EPA also determines whether there is a reasonable certainty of no harm from pesticide residues in food or feed and sets tolerances, or exemptions from tolerances, for allowable residues of pesticides in food and animal feed under the Federal Food, Drug, and Cosmetics Act (FFDCA),[4] as amended by the Food Quality Protection Act (FQPA).[5]

Once a proposed pesticide is reviewed and approved, it is formally registered with the EPA. For hemp, the EPA began the pesticide approval process on August 21, 2019, to ensure growers would have time to plan for their crop input purchases for the 2020 production season. The agency received applications from 10 companies seeking label approval for use in hemp production and opened a 30-day public comment period.

The nine biopesticides approved for hemp cultivation are:

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[3] 7 U.S.C. §136 *et seq*. (1996). FIFRA provides the basis for regulation, sale, distribution and use of pesticides in the U.S. FIFRA authorizes EPA to review and register pesticides for specified uses. EPA also has the authority to suspend or cancel the registration of a pesticide if subsequent information shows that continued use would pose unreasonable risks.

[4] 21 U.S.C. §301 *et seq*. FFDCA authorizes EPA to set maximum residue levels, or tolerances, for pesticides used in or on foods or animal feed. Under FFDCA and amendments to both FFDCA and FIFRA, EPA must make a similar finding of a reasonable certainty of no harm if the use of such agents results in residues in food or feed. If the submitted information supports this safety finding, EPA may establish a numerical tolerance or an exemption from the requirement of a tolerance regarding those residues.

[5] 7 U.S.C. §136 *et seq*. The FQPA was enacted to standardize the way EPA regulates pesticides. The law amends both the FFDCA and the FIFRA to create a uniform framework of regulations governing the review and registration of pesticides, including development of health-based standard for pesticides used in foods, special protections for babies and infants, a streamline approval process for safe pesticides, and incentives for the creation of safer pesticides.

- EPA Registration Number: 70310-5. Applicant: Agro Logistic Systems, Inc. Active ingredients: Azadirachtin and Neem Oil. Product type: Insecticide, Miticide, Fungicide, and Nematicide.
- EPA Registration Number: 70310-7. Applicant: Agro Logistic Systems, Inc. Active ingredients: Azadirachtin and Neem Oil. Product type: Insecticide, Miticide, Fungicide, and Nematicide.
- EPA Registration Number: 70310-8. Applicant: Agro Logistic Systems, Inc. Active ingredients: Azadirachtin and Neem Oil. Product type: Insecticide, Miticide, Fungicide, and Nematicide.
- EPA Registration Number: 70310-11. Applicant: Agro Logistic Systems, Inc. Active ingredient: Neem Oil. Product type: Insecticide, Miticide, and Fungicide.
- EPA Registration Number: 84059-3. Applicant: Marrone Bio Innovations, D/B/A Marrone Bio Innovations, Inc. Active ingredient: Extract of Reynoutria sachalinensis. Product type: Fungicide and Fungistat.
- EPA Registration Number: 84059-28. Applicant: Marrone Bio Innovations, D/B/A Marrone Bio Innovations, Inc. Active ingredient: Bacillus amyloliquefaciens strain F727. Product type: Fungicide.
- EPA Registration Number: 91865-1. Applicant: Hawthorne Hydroponics LLC, D/B/A General Hydroponics. Active ingredients: Soybean Oil, Garlic Oil, and Capsicum Oleoresin Extract. Product type: Insecticide and Repellent.
- EPA Registration Number: 91865-3. Applicant: Hawthorne Hydroponics LLC, D/B/A General Hydroponics. Active ingredient: Bacillus amyloliquefaciens strain D747. Product type: Fungicide and Bactericide.
- EPA Registration Number: 91865-4. Applicant: Hawthorne Hydroponics LLC, D/B/A General Hydroponics. Active ingredient: Azadirachtin. Product type: Insect Growth Regulator and Repellent.

Additionally, the EPA has approved one conventional pesticide for use in cultivating hemp:

- EPA Registration Number: 91865-2. Applicant: Hawthorne Hydroponics LLC, D/B/A General Hydroponics. Active ingredient: Potassium Salts of Fatty Acids. Product type: Insecticide, Fungicide, and Miticide.

Although marijuana derived from cannabis remains illegal under federal law, the 2018 Farm Bill removed hemp and its derivatives from the ambit of the Controlled Substances Act and legalized its production. The EPA's hemp announcement signals the first time the federal government has deemed any pesticide or biopesticide safe to use on cannabis.

For more information regarding the EPA's regulation of hemp pesticides, or the laws cultivating hemp generally, contact GrayRobinson's Cannabis Law Department at (800) 338-3381, or email Richard Blau directly at Richard.Blau@gray-robinson.com.