



NEONICOTINOID PESTICIDE USE IN ROOT AND TUBER VEGETABLE CROPS

Title 3, California Code of Regulations (3 CCR) sections 6990 through 6990.16

WHAT: The Department of Pesticide Regulation (DPR) has adopted regulations to limit neonicotinoid pesticide product use in the production of certain agricultural commodities. The new regulations apply to soil and foliar applications of products containing clothianidin, dinotefuran, imidacloprid, and thiamethoxam. The regulations do not apply to neonicotinoid use in non-agricultural (e.g., structural or home use) or non-production agricultural (e.g., parks, cemeteries) settings, or to seed treatment applications.

WHY: Pollinators, such as honeybees, are critical to growers and the entire agricultural industry, as well as to the consumers of the commodities produced. Neonicotinoid pesticide products may present hazards to honeybees and other pollinators. Pollinators can be exposed to neonicotinoids, through contact with residues or by ingesting contaminated pollen or nectar since neonicotinoids are systemic pesticides that move through the plant's tissue. DPR adopted these regulations to protect pollinators from risks from exposure to neonicotinoids in agricultural crops.

HOW: To mitigate these identified risks to pollinators, these new regulations have crop-specific rate and application timing restrictions. Statewide, the regulations are expected to reduce the amount of neonicotinoid pesticides used and acres treated.

IMPORTANT NOTES:

Product labels will not be updated with these requirements. Those selling, recommending, buying, or using these products should be aware of these regulations. Growers and applicators must follow the new regulations if applicable. These regulations apply in addition to any requirements found on neonicotinoid product labeling. In the event of a conflict between labeling requirements and these regulations, the strictest requirement must be followed.

PRODUCTS IMPACTED

As of June 2023, there are over 50 products covered by the new regulations. Below are the top neonicotinoid products used in root and tuber vegetable crops for each active ingredient. This information was compiled using publicly available data by products with the highest number of applications in 2020. The identification of these products is intended for educational purposes only to inform growers and applicators of the most commonly used pesticide products in root and tuber vegetable crops that would be subject to DPR's neonicotinoid regulations.

1. Clothianidin: Belay Insecticide (EPA Reg. No. 59639-150-AA)
2. Dinotefuran: none
3. Imidacloprid: Admire Pro Systemic Protectant (EPA Reg. No. 264-827-ZA),
4. Thiamethoxam: Actara (EPA Reg. No. 100-938-ZA)

Examples of Root & Tuber Vegetable Crops

- Arracacha
- Artichoke, Chinese
- Artichoke, Jerusalem*
- Beet (garden and sugar)
- Carrot
- Celeriac (celery root)
- Chervil, turnip-rooted
- Chicory root
- Dasheen (taro)
- Ginger
- Ginseng
- Horseradish
- Parsley, turnip-rooted
- Parsnip
- Potato
- Radish
- Radish, oriental
- Rutabaga
- Salsify (oyster plant, black, and Spanish)
- Skirret
- Sweet potato
- Turmeric
- Turnip



California Department of
Pesticide Regulation

Before making any agricultural applications of neonicotinoids, BEE sure to review the regulations!



3 CCR SECTION 6990.12. NEONICOTINOID USE ON ROOT AND TUBER VEGETABLES

Unless the application is exempted by section 6990(c), or is applied to specific exempt root and tuber vegetable crops as noted below, the following restrictions apply to neonicotinoid applications on root and tuber vegetable crops:

1. BLOOM PROHIBITION

Application of a neonicotinoid is prohibited during bloom. The term "bloom" means the period from the onset of flowering until petal fall is complete. It is important for growers to know their crop and local climate.

2. TOTAL MAXIMUM COMBINED APPLICATION RATE

If both soil and foliar application methods are used on the same crop, or if multiple neonicotinoid active ingredients are applied to the same crop, a total maximum combined application rate of 0.388 lbs. ai/A/season may be applied, provided: (1) Soil application rate must not exceed 0.338 lbs. ai/A/season; and (2) Foliar application rate must not exceed 0.05 lbs. ai/A/season.

3. RATE AND TIMING RESTRICTIONS

If managed pollinators will be used within the growing season, the application rate and timing restrictions listed in the following table apply.

Exempt Root and Tuber Vegetables: Application of a neonicotinoid to sweet or bitter cassava are exempt from the regulations. Additionally, if any of the following crops will be harvested before bloom, then applications to these crops are exempt: arracacha, artichokes (Chinese and Jerusalem), carrots, chicory roots, garden beets, sugar beets, turnips, turnip-rooted chervil, turnip-rooted parsley, parsnips, radishes, oriental radishes, rutabagas, and skirret. Otherwise, if these crops are harvested after bloom or are grown for seed, the regulations apply.

Active Ingredient	Soil Application		Foliar Application	
	Maximum Application Rate	Required Timing	Maximum Application Rate	Required Timing
Clothianidin	0.2 lbs. ai/A/season	Apply only from pre-planting until bloom	0.05 lbs. ai/A/season	Apply only from pre-planting until bloom
Dinotefuran	0.338 lbs. ai/A/season	Apply only from pre-planting until the beginning of main stem elongation or crop cover	0.05 lbs. ai/A/season	Apply only from pre-planting until bloom
Imidacloprid	0.2 lbs. ai/A/season	Apply only from pre-planting until bloom	0.05 lbs. ai/A/season	Apply only from pre-planting until bloom
Thiamethoxam	0.2 lbs. ai/A/season	Apply only from pre-planting until bloom	0.05 lbs. ai/A/season	Apply only from pre-planting until bloom

EXEMPTIONS FROM THE REGULATIONS – Section 6990(c)

1. An application made to an agricultural commodity grown inside an enclosed space, insect exclusionary structure/netting
2. An application made to address a local emergency or to control a quarantine pest
3. An application allowed under an active "Section 18" Emergency Exemption
4. An application authorized for research purposes to support a proposed amendment to these regulations

The product labeling must still be followed!

For questions contact your local
County Agricultural Commissioner:
www.cdfa.ca.gov/exec/county/countymap

For more information on the regulations, visit the following links:
www.cdpr.ca.gov/neonicotinoiduse/
<https://www.cdpr.ca.gov/docs/legbills/rulepkgs/22-001/22-001.htm>