



METALDEHYDE UPDATE FOR VEGETABLE CROPS



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Joe DeFrancesco
Oregon State University

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News In Brief

Page 1

- New Pollination Protection Language on Labels

Page 2

- Bulk Fertilizer, Ag Mineral, Ag Amendment, and Lime Product Labeling
- What are 'Core' Classes?

Page 3

- The Death of a Great Horned Owl
- Check Your Credit History Report
- Carzol

Page 4

- Metaldehyde Slug Baits Phased Out
- Insurance Update Reminder
- Active Section 18 Exemptions

Page 5

- 24(c) or Special Local

NEW POLLINATOR PROTECTION LANGUAGE ON PESTICIDE LABELS

To protect bees and other pollinators from outdoor foliar applications, the US EPA has enacted new pesticide label language for four insecticides. According to EPA, multiple factors play a role in bee colony declines, including pesticides.

The four nitroguanidine neonicotinoid insecticides are: imidacloprid, dinotefuran, clothianidin and thiamethoxam. Several hundred pesticide labels will be revised in the coming months. To determine which products contain these active ingredients, go to PICOL, <http://cru66.cahe.wsu.edu/labels/Labels.php>

The new label language will include specific use restrictions for:

- CROPS UNDER CONTRACTED POLLINATION SERVICES;
- FOOD CROPS AND COMMERCIALY GROWN ORNAMENTALS NOT UNDER CONTRACT FOR POLLINATION SERVICES BUT ARE ATTRACTIVE TO POLLINATORS;
- NON-AGRICULTURAL PRODUCTS.

Labels for products containing dinotefuran* and clothianidin will have an additional pollinator protection statement to protect managed honey bees post-application.

In addition to the new restrictions, the new labels will have a Bee Advisory Box and icon with information on routes of exposure and spray drift precautions.

On February 1, 2014, all products produced must bear the new labeling. Previously labeled product can continue to be sold by pesticide dealers and used by applicators until supplies are exhausted. Note to Pesticide Users - Always follow the label directions on the container in your possession.

IMPORTANT USES OF METALDEHYDE SLUG BAITS PHASED OUT

If you rely on products containing metaldehyde for slug control (sold under the trade names Blue Bombshell, Deadline, Durham Meta, Slugger, Slug Fest, among others), you need to be aware of significant changes in the crop uses allowed on the labels for these products. The changes impact numerous crop uses that are important in Oregon agriculture. Here are the details.

What is causing the changes and when are they coming? EPA recently canceled several uses of metaldehyde slug bait products, as had been requested by the company that manufactures the active ingredient. The canceled uses are being removed as labels for existing end-use products are revised and new product registrations are approved. Some products entering the marketplace during Summer/Fall of 2013 now have labels reflecting the changes, and ODA anticipates that the transition to the new labels (with fewer use sites) will be completed for all metaldehyde bait products during 2014.

Crops/Uses that will remain on labels: artichokes, blueberries, caneberries (blackberry, raspberry, etc.) and other berries (currant, gooseberry, loganberry, etc.), citrus fruits, lettuce, cole crops and other leafy greens (broccoli, Brussels sprouts, cabbage, cauliflower, cavalo broccolo, collards, kale, kohlrabi, mizuna, mustard greens, mustard spinach, rape greens), grasses grown for seed, ornamentals, prickly pear cactus, tomato, strawberry, watercress, and use sites with directions for use in state and/or federal invasive mollusk eradication operations. Broadcast applications are prohibited except on grasses grown for seed, watercress, and invasive mollusk eradication operations.

A stylized, light blue illustration of a plant with several leaves and a cluster of small, round buds or flowers, positioned on the left side of the slide against a dark blue background.

METALDEHYDE

A Brief History

Current Metaldehyde Label

#No. of Apps? Retreatment Interval? PHI?

APPLICATIONS

Apply as a soil surface treatment. May be broadcast by air or ground equipment unless specified otherwise in the label. Use a band treatment between the rows after formation of edible parts. Do not apply directly to or contaminate edible portions of the plant. Do not mix with any seeds prior to application. May be applied to the following crops to protect from slugs and snails.

FIELD CROPS: Cereal grains, coffee, corn, cotton, hay, legumes, mint, pasture: Apply 10 to 40 lbs. per acre.

TOBACCO: Field, greenhouse, lathehouse: Apply 12 to 40 lbs. per acre, or 1 lb. to 1,100 - 3,600 sq. ft.

SEED CROPS: Sugar beets, flowers, grasses, vegetable and legume crops grown for seed: Apply 10 to 40 lbs. per acre.

VEGETABLES: Asparagus, beans, beets, black-eyed peas, broccoli, brussel sprouts, cabbage, cantaloupe, carrots, cauliflower, celery, collards, corn, cowpeas, cucumbers, eggplants, endive, garlic, ginseng, horseradish, kale, kohlrabi, leeks, legumes, lettuce, melons, mustard greens, okra, onions, parsnips, peas, peppers, pimentos, potatoes, pumpkins, radishes, rhubarb, rutabagas, salsify, shallots, spinach, squash, sweet potatoes, swiss chard, tomatoes, turnips, watermelons: Apply 20 to 40 lbs. per acre.

ARTICHOKES: By air or ground application before tight bud stage: Apply 25 to 70 lbs. per acre. After tight bud stage, apply by ground application only.

DRYLAND TARO: Apply 10 to 40 lbs. per acre.

TREE CROPS: Citrus: Apply 20 to 40 lbs. per acre to give even distribution. Avocado, cherries, peaches, apricots, apples, pears, bananas, papaya: Apply 20 to 40 lbs. per acre.

SMALL FRUIT: Blackberries, blueberries, boysenberries, caneberries, loganberries, raspberries, strawberries, grapes: Apply 10 to 40 lbs. per acre.

2006: EPA Reregistration Eligibility Decision (RED)

- ~ Metaldehyde tolerances needed for food and feed crops
- ~ Mitigate exposure (rate, # apps, etc.)
- ~ LONZA provides list of supported crop
(Turf, Ornamentals, Lettuce, Citrus, Cole Crops, Leafy greens, Tomato)

2007: Specialty Crops Reg Program at NWREC

- ~ Begin dialogue w/ LONZA, EPA, AmVac, IR-4 (re:/unsupported crops)
- ~ Poll Oregon specialty crop industries for metaldehyde needs

2008: Initiate field residue studies (NWREC/IR-4)

- ~ Berry Crops, Grass Seed, Petiole Crops (Rhubarb), Mint, Corn

2009-2013: Initiate more field residue studies

~ Clover Seed, Legumes, Root Vegetables, Winter Wheat, Hops

2012: Letter to EPA Docket (add “crops in progress”)

~ Clover seed, legumes, root crops, wheat

2013: July 2013 FR Notice - list of supported crops

2013: November 2013 - tolerances established in FR

~ ODA Newsletter issued

2014: New slug labels to be issued (“slow roll-out”)

40-CFR-180.523 Metaldehyde; tolerances for residues (11/27/13)

Commodity	Parts per million
Artichoke, globe	0.07
Berry, low growing, subgroup 13-07G	6.25
Bushberry subgroup 13-07B	0.15
Cactus	0.07
Caneberry subgroup 13-07A	0.15
Corn, field, forage	0.30
Corn, field, grain	0.05
Corn, field, stover	0.10
Corn, sweet, forage	0.30
Corn, sweet, kernel plus cob	0.05
Corn, sweet, stover	0.10
Fruit, citrus, group 10	0.26
Grass, forage	2.0
Grass, hay	2.0
Leaf petioles subgroup 4B	0.50
Lettuce	1.73
Peppermint, oil	12
Peppermint, tops	4.0
Spearmint, oil	12
Spearmint, tops	4.0
Taro, corm	0.15
Taro, leaves	1.0
Tomato	0.24
Vegetable, brassica, leafy, group 5	2.5
Watercress	3.2

Newly issued labels will include only crops that have an established tolerance (or are exempt from tolerance).

New label will include:

- Rate; No. of Apps; Retreatment Interval; PHI

Vegetables **likely** to have:

	Old	New
Rate	1.6 ai #/A	1.0 ai#/A
No. of Applications	Undefined	3
Retreatment Interval	Undefined	14 days
Pre-Harvest Interval (PHI)	?	?

Specialty Seed Crops Grown for Seed

(for replanting only)

Flowers, Vegetables, Herbs/Spices

Small-seeded Vegetable Seed Crops

- Based on review of the scientific literature, EPA Chemistry Branch has determined that the following 39 small-seeded vegetable seed crops can be classified as **nonfood use** sites for purposes of 24(c) registrations:
- Small-seeded vegetables seed crops have very high numbers of seed/lb (often >20,000 seeds/lb.), such as cabbage, carrot and spinach.
- Tolerance not required.

Large-seeded Vegetable Seed Crops

- Large-seeded vegetable crops include those crops that have relatively low numbers of seeds/pound (400 – 3,000 seeds/lb), such as peas, beans and corn. Also, often used as animal feed (e.g. corn).
- Tolerance required.

**OREGON DEPARTMENT OF AGRICULTURE
PESTICIDES DIVISION**

**OAR 603-057-0535
Pesticide Use On Crops Grown For Seed**

603-057-0535

Pesticide Use on Crops Grown for Seed Production

(1) For purposes of pesticide product registration, labeling, distribution and use, certain crops when grown exclusively for seed production with the sole intent of the seed being planted, or with the sole intent of the seed being processed to produce nonedible industrial or nonedible cosmetic oil, shall be considered nonfood/nonfeed sites. If certain conditions are met as specified in this rule, a pesticide residue tolerance is not required to obtain a pesticide registration on the crop. These crops include, but are not limited to:

Alfalfa	Clover	Mizuna
Alliums (except garlic)	Collards	Mustard (including Chinese)
Arugula	Cucumber	Parsley
Beet (garden and sugar)	Dill	Parsnip
Birdsfoot Trefoil	Drug & Medicinal Crops	Radish (except daikon)
Broccoli (including Chinese)	Endive	Rapeseed (industrial oil only) 1
Brussels Sprouts	Escarole	Rutabaga
Burdock	Herbs (Culinary)	Spinach
Cabbage (including Chinese)	Herbs (Dietary Supplement)	Squash, Summer
Carrot	Kale (including Chinese)	Squash, Winter (except Pumpkin)
Cauliflower	Kohlrabi	Swiss Chard
Celery	Lettuce	Turnip
Cilantro/Coriander	Meadowfoam	Vetch

Crop not on new label?

- Products already in possession of the end user may still be used on all the crops/use sites listed on the product label.
- Products that were packaged and labeled and made available for sale before the use cancellations may still be purchased and used. Local availability??
- Update: Peas, Beans, Clover Grown for Seed
 - ~ Petition at EPA; PRIA date may be July 2015
 - ~ Clover Seed: Section 24c? Legumes: Section 18?
- Update: Wheat and Hops
 - ~ On-going project; data submission to EPA in 2015

1990

Slug vacation disasters

