

# Why is Mode of Action Important?

- Required by regulatory agencies
- Provides insight about how insecticides may affect humans
- Understanding mode of action can help with insecticide resistance management

# Dibrom<sup>®</sup> Seed Alfalfa

Product Review

January, 2017



# Overview of Presentation

## Introduction to Dibrom

- Physical and chemical properties
- Toxicology and mode of action

## Dibrom on Seed Alfalfa/Carrots

- Use recommendations
- Efficacy Data



# Dibrom<sup>®</sup>

**Insecticide Class:**

Organophosphate

**Common Name:**

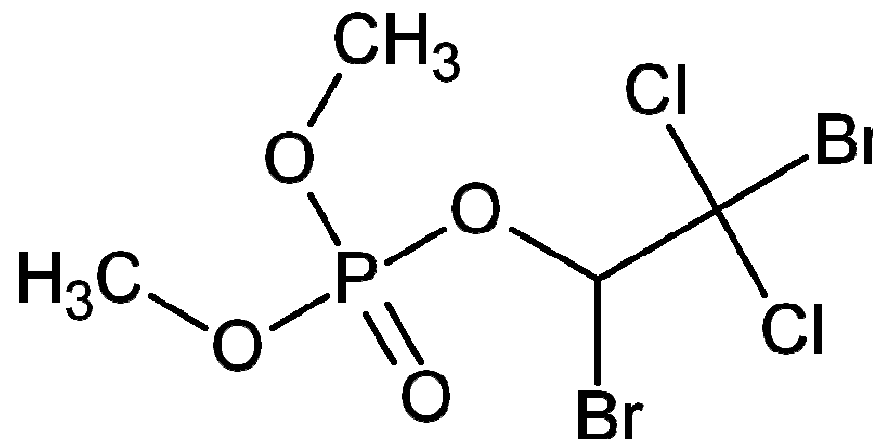
Naled

**Chemical Name:**

1,2,-dibromo-2,2-dichloroethyl dimethyl phosphate

**Empirical Formula:** $C_4H_7O_4Cl_2Br_2P$ **CAS Number:**

300-76-5

**EPA Reg. No.:**

5481-479

**MSDS No.:**

254\_13

# Dibrom<sup>®</sup>

- Dibrom is 62% ai/gal
- Signal Word: Danger
- **Can be applied by ground or air**
- **Labeled on many crops**
- Spray volume varies by crop
- Do not mix alkaline materials in spray tank



# Dibrom<sup>®</sup> - Highlights

- Dibrom is a fast-acting, non-systemic contact and stomach insecticide and acaricide.
- Fumigant action irritates pests and “flushes” them out!
- Excellent tank mix partner in many crops.
- Active converts to DDVP on leaf surface and dissipates rapidly in the environment.

**Slide 6**

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**PJP3**

"Fumigant" has regulatory implications. 'Vapor activity' better?

Porpiglia, Peter J, 5/8/2014

# Dibrom<sup>®</sup> - Other Features

- Dibrom is not persistent in the environment and most of the activity is lost during the first 24 hours.
- Breaks down so quickly that in most cases residues are well below those established for the crops.
- **This is the reason why Dibrom can be used close to harvest!**



# Dibrom<sup>®</sup> - pH Stability

- An important feature for ensuring performance with Dibrom is spray tank pH.
- Dibrom is more stable at lower pH !
  - pH 5.0      Half Life\* = 25 hrs.
  - pH 7.0      Half Life\* = 16 hrs.
  - pH 9.0      Half Life\* = 13 minutes
- **Buffer spray tanks between pH 5.5 to 6.5.**

**\* All at 70 deg F**

# Dibrom<sup>®</sup> - Application Equipment

- Because Dibrom may react with a number of metals, it is advisable that spray tanks be made of Teflon, stainless steel, fiberglass or polypropylene.
- Use nylon or stainless steel tubing supply lines.
- Use bronze, stainless steel or brass pumps and nozzles.
- Viton seals preferred.

# Key Features of Dibrom<sup>®</sup>

- Dibrom provides quick knockdown.
  - Used alone or in combination with other insecticides/acaricides
- Quick rebound of beneficial insects.
- Can be applied up to 1-7 days prior to harvest\*.
- Environmentally sound.



*\* Always read complete Label and Follow all Guidelines*

# Dibrom<sup>®</sup>

- Naled (Dibrom) is an insecticide that is effective against Lygus and other pests.
- 24-(c) Label\* for use on alfalfa and carrot grown for seed.
- Labeled applications:
  - GROUND or AERIAL: Dibrom at 1 to 1-1/2 pts./acre. For Thrips ally ½ pint per acres.

\*see specific 24-(c) for your state

# Label Restrictions

- DO NOT use on fields producing alfalfa for livestock feed.
- DO NOT feed or graze alfalfa treated with Dibrom.
- DO NOT cut treated alfalfa for hay or for forage.
- DO NOT use harvested seed for sprouting.
- No portion of the treated field, including seed, seed screenings, hay, forage or stubble may be used for human or animal consumption.
- Do not apply when bees are active in the field. Check with local regulatory agency for additional bee restrictions.
- REI is 48 hours.

# Newly Registered Pesticides

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## ❖ Rimon 0.83EC (Chemtura Corp.)

- **Insecticide class:** Insect growth regulator (IGR)
- **Mode of action:** disrupts cuticle (chiton) synthesis and prevents molting (growth from one insect stage (instar) to the next)
- **Systemic in plant?** No
- **Route:** contact or ingestion
- **Insect stages affected:** immature, eggs?
- **Activity spectrum:** broad

# Newly Registered Pesticides

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## ❖ Assail 70WP (Cerexagri, Inc.)

- **Insecticide class:** neonicotinoid
- **Mode of action:** nerve poison, disrupts nerve transmission at synapse by binding (nicotinic ) acetocholeline receptor
- **Systemic in plant?** Yes, in actively growing plants
- **Route:** ingestion, contact
- **Insect stages affected:** immature, adult
- **Activity spectrum:** narrow, specific to piercing sucking insects

# Newly Registered Pesticides

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## ❖ Beleaf 50SG (FMC Corp.)

- **Insecticide class:** pyridinecarbaxamide
- **Mode of action:** undetermined, prevents feeding of sucking insects
- **Systemic in plant?** Yes: trans-laminar in actively growing foliage
- **Route:** ingestion, contact
- **Insect stages affected:** immature, adult
- **Activity spectrum:** narrow, specific to sucking insects