Update on Potato Beetle Management

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Visit the MSU Vegetable Entomology Website
http://vegetable.ent.msu.edu/extension/bulletins/potato/

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Neonicotinoids (Neonics)

- commercial product names: *Admire Pro, Gaucho, Leverage, Platinum, Actara, Cruiser, Belay, Assail, Venom, several generics…*
- active ingredients: *imidacloprid, thiamethoxam, acetamiprid, clothianidin, dinotefuran*
- all are in same MoA class = **4A**

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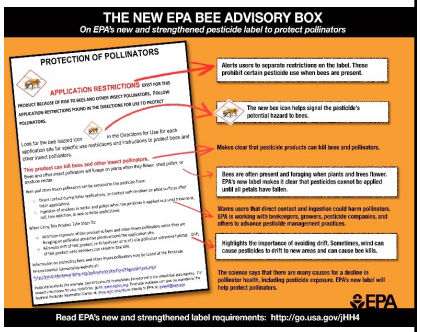
Neonic application restriction for flowering crops where contracted beehives are not used

- Bloom is over and petals have fallen.
- The application is made after sunset.
- The application is made when temperatures are less than 55F
- The application is made in accordance with a state-administered apiary registry program, where beekeepers in the area are notified at least 48 hours before application.
- The pest population is above a pre-determined threshold and beekeepers in the area are notified 48 hours before application.



Read more on this issue: https://www.canr.msu.edu/news/new_labels_restrict_use_of_select_neonicotinoids_in_vegetables_to_protect_p

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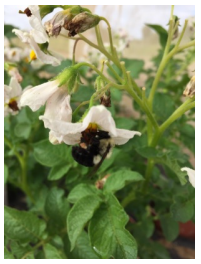
Surveyed MI potato fields for bees



- 58 bee species
- 74% ground nesting
- 68% from field edge or border

Buchanan, Gibbs, Komondy, and Szendrei (2017)

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Consumer pressure?

- Retailers such as Walmart and Costco are phasing out neonic-treated potato products to support pollinators
- EPA is reviewing neonicotinoids

04/12/2021

Walmart Moves to Protect Pollinators From Pesticides

1st U.S. food retailer to adopt timebound commitment to expand ecological farming methods

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Why is resistance such an issue in Colorado potato beetle management?

-Adapted to feeding on toxic plants (*Solanacea spp.*)
-Over-reliance on a single class of insecticide
-exposure to sublethal doses

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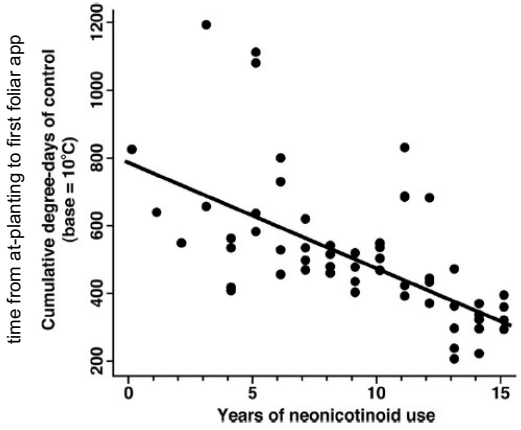
Shorter efficacy window

~50 days of lost control since registration of neonicotinoids in1995
(3.3 calendar days or 35 GDD lost per year since 1995)



Huseth et al. 2014

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Manage Colorado potato beetle insecticide resistance

- If a neonicotinoid insecticide (Group 4A) was applied at planting, do not use a foliar neonicotinoid insecticide later in the season
- Crop rotation with a minimum of ¼ of a mile between successive plantings
- Use scouting, sampling procedures and action thresholds
- Preserve natural controls by using selective insecticides
- Spot treat when feasible (e.g. field edges) - potato trap crop
- Do not apply insecticides below labeled rates

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