

## Ideas for the Ag Innovation Board

**Neonicotinoids:** imidacloprid, acetamiprid, dinotefuran, thiamethoxam, and clothianidin

### Seed Treatments:

Acetamiprid: 4.57-11.2 µg/bee; half-life in soil 12 days

Assail

Clothianidin: LD50 > 0.0439 µg/bee; half-life in soil 148-7000 days (19 years)

Poncho, NipsItInside, Poncho/VOTiVO

Thiamethoxam: LD50 > 0.0012 µg/bee; half-life 34.3 to 464 days

Cruiser

Imidacloprid: 0.0037 - 0.0409 µg/bee; half-life 26.5–229 days to 8 years (speaker)

Gaucho, Provado, Merit

### LD50 for Bees Classification

- highly toxic (acute LD50 < 2µg/bee)
- moderately toxic (acute LD50 2 - 10.99µg/bee)
- slightly toxic (acute LD50 11 - 100µg/bee)
- nontoxic (acute LD50 > 100µg/bee) to adult bees.

### Recommendations

1. Recommend prohibiting the use of all neonicotinoid sprays (above ground) in Vermont.
2. Recommend prohibiting the use of highly toxic neonicotinoids (to bees) in Vermont as seed treatments (see above).
3. Recommend prohibiting farmers from treating their own seeds with neonicotinoids.
4. Recommend prohibiting the use of piperonyl butoxide as an inert ingredient with neonicotinoids.
5. Recommend requiring farmers use a fluency agent and prohibit them using graphite or talc in planters to reduce dust.
6. Recommend providing funding to farmers to modify equipment and to Extension to run programs on how farmers can make modifications (if possible).
7. Recommend requiring farmers to remove waste seed and dust from the soil and dispose of them properly.
8. Recommend following BMP outlined by Dr. Kimberly Stoner (1-9).
9. Recommend providing funding for workshops for beekeepers on varroa mite management.
10. Recommend a phase out period for all neonicotinoid pesticides of 2-3 years.