2009 IR-4 Food Use Workshop

Cleveland, OH

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Tolfenpyrad

NAI-2302 15EC
NAI-2303 15SC
Chemical Details on Tolfenpyrad

- Chemical Name: 4-chloro-3-ethyl-1-methyl-N-[4-p-tolyloxy)benzyl] pyrazole -5-carboxamide
- Empirical Formula: C$_{21}$H$_{22}$Cl N$_3$O$_2$
- Molecular Weight: 283.9
- Code Number: NAI-2302
Insects Controlled

- Hemiptera, Coleoptera, Diptera, Lepidoptera, Thysanoptera, and Acarina
- Poisoning by ingestion; contact activity; anti-feeding activity against leps
- Target Crops:
  - Vegetables, Cucurbits, Cole Crops
  - Fruits & Nuts
  - Selected row crops
  - Ornamentals
Efficacy Trials

- Use rate 0.137 to 0.274 lb. a.i/acre (153-307 grams ai / hectare)
- 14 – 27 oz/a (15% EC and 15% SC formulations)
- Alternative mode of action useful against numerous vegetable and fruit/nut pests
Efficacy Trials

- **Coleoptera:**
  - Colorado Potato Beetle, Plum Curculio, Japanese Beetle

- **Lepidoptera:**
  - Grape Berry Moth, *Helicoverpa* spp., Peach Twig Borer, Diamonback Moth, Imported Cabbage Worm, Armyworms

- **Hemiptera:**
  - Aphid, Whitefly, Psyllids, Hoppers, Mealybugs (including Vine Mealybug)

- **Thysanoptera:**
  - Tobacco thrips, citrus thrips

- **Diptera:**
  - Cherry Fruitfly, Apple Maggot (?)

- **Other:** Katydid, Rust Mites
U.S. Registration Timeline

- Submitted non-crop indoor greenhouse use 2008 as reduced risk candidate & anticipated registration end of 2009
- Submit crop uses with residue chemistry data by 2010 as reduced risk candidate
- Anticipated food tolerances late 2011
Pyrifluquinazon

NNI-0101
NNI-0101 (Pyrifluquinazon)

- Chemistry: Quinazolinone Chemistry
- MOA: Insect Behavior Modifier
  - Rapid cessation of feeding
  - Insects remain but starve to death
- Target Mkts: TNV, Vegetables, Cotton, Cucurbits
Pyrifluquinazon (NNI-0101)

- **Hemiptera / Homoptera**
  - Rates: 12.5-50 grams ai/hectare
  - Whitefly, Aphids
  - Rates: 50-125 grams ai/hectare
  - Mealybug, thrips, leafhopper
- Higher Rates:
  - Scale
  - True bugs
NNI-0101 shows two distinct effects on aphids;
1. Rapid response of abnormal behavior (insect dispersion, feeding cessation)
2. Slow lethal action

Figure 1. Mortality and percent of insect dispersal from treated plants of green peach aphid, *Myzus persicae*, after treatment with NNI-0101 at a dose rate of 50ppm.
Possible IR-4 Interests

- Rapid cessation of whitefly and aphid feeding reduces transmission of viruses vectored by these pests on fruit and vegetable crops.
US Registration Timeline

- Submit non-food to EPA late 2009
- Submit food crop uses late 2010 / early 2011
- Anticipated food tolerances late 2012
Domo arigatou gozaimashita
(Thank You Very Much)

Questions?