

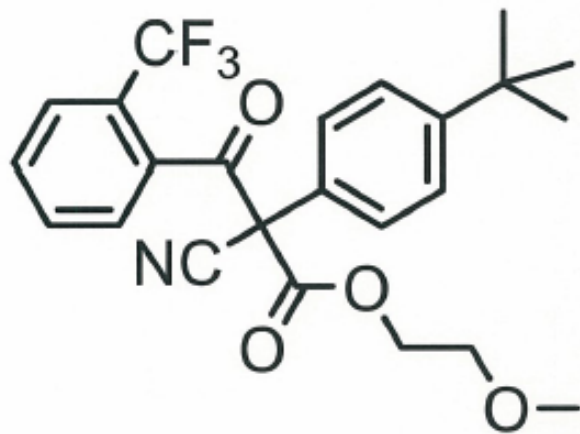
# The Nealta™ Miticide from BASF

IR-4 Food Use Workshop

September 13, 2011

# Nealta Chemistry

- AI Common Name: Cyflumetofen
- Class: benzoylacetone nitrile
- MOA: IRAC 25 – mitochondrial respiration
- Pests Controlled: Specific - Tetranychidae Family Mites
- Chemical Structure:



**The only molecule in IRAC MoA Group 25**

# Nealta miticide research testing results indicate: Efficacy on Different Mite Life Stages

Mite Life Stage	LC <sub>50</sub> (ppm)		
	<i>T. urticae</i>	<i>T. kanzawai</i>	<i>P. citri</i>
Eggs	2.5	3.8	2.5
Larvae (most susceptible)	0.9	1.7	0.8
Protonymphs	1.0	2.1	0.9
Deutonymphs	1.9	2.8	2.4
Adults	4.8	2.4	2.3

**Nealta is active on all live stages including eggs**

# Nealta miticide research testing results indicate: A lack of cross-resistance to other miticides

LC <sub>50</sub> (ppm)			
Product (AI)	<u>T. kanzawai</u>	<u>P. citri</u>	
		Susceptible	Wild Strain
Nealta (Cyflumetofen)	1.5	1.3	1.4
Kanemite (Acequinocyl)	<b>23</b>	1.5	3
Acramite (Bifenazate)	5	1.6	<b>21</b>

Nealta is effective on mites that are resistant to other miticides.

# Nealta miticide research testing results indicate: Lack of Direct Activity on Beneficial Arthropods

## Predators

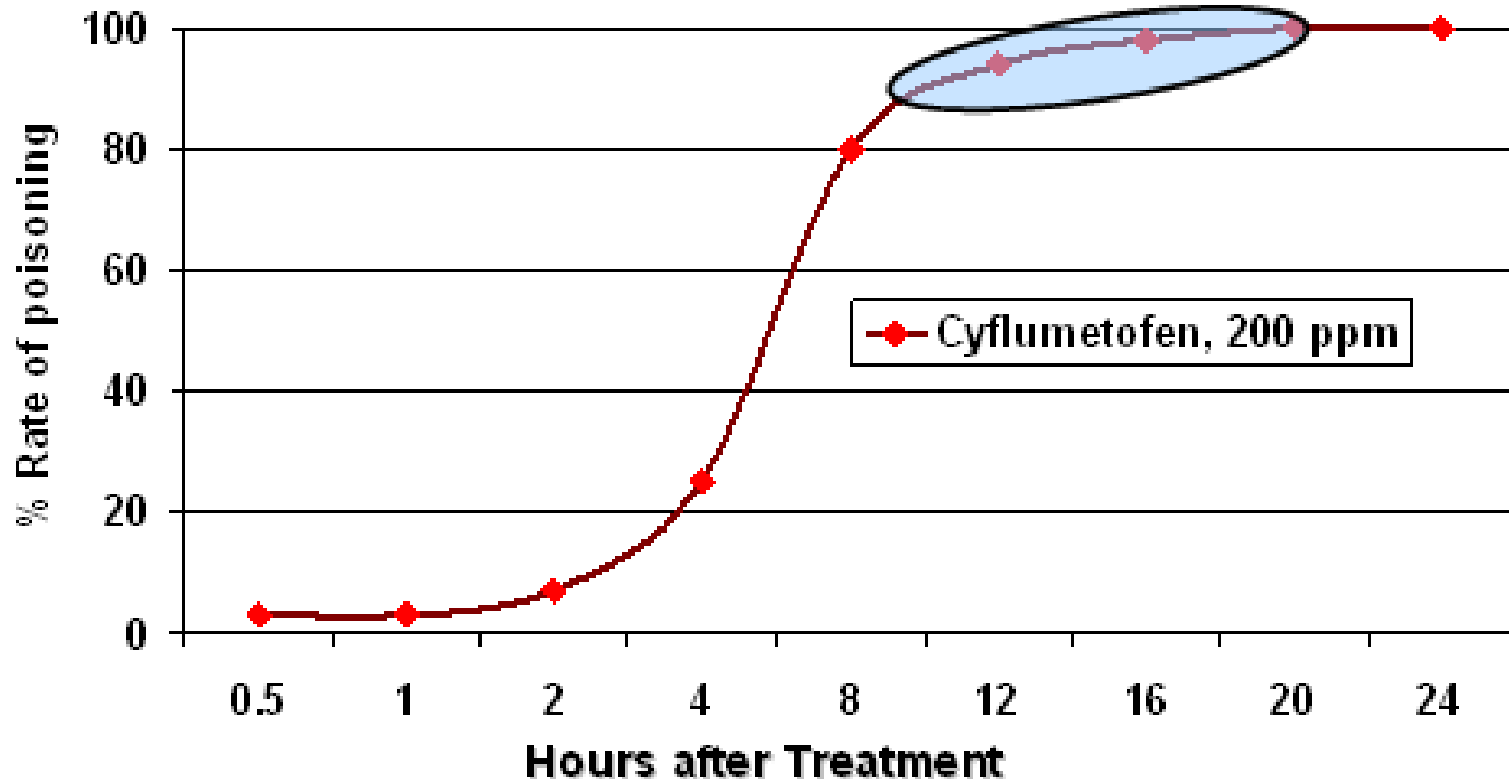
Acari	<i>Amblyseius californicus</i>	Hymenoptera	<i>Aphidius colemani</i>
	<i>Amblyseius cucumeris</i>		<i>Aphidius rhopalosiphii</i>
	<i>Amblyseius womersleyi</i>		<i>Encarsia formosa</i>
	<i>Phytoseiulus persimilis</i>		<i>Neochrysocharis formosa</i>
	<i>Typhlodromus pyri</i>		<i>Trichogramma sp.</i>
Coleoptera	<i>Harmonia axyridis</i>	Thysanoptera	<i>Scolothrips takahashii</i>
	<i>Oligota kashmirica benefica</i>	Heteroptera	<i>Orius strigicollis</i>
	<i>Stethorus japonicus</i>	Neuroptera	<i>Chrysoperla carnea</i>

## Other beneficial insects

Lepidoptera	<i>Bombyx mori</i>	Hymenoptera	<i>Apis mellifera</i>
			<i>Bombus terrestris</i>

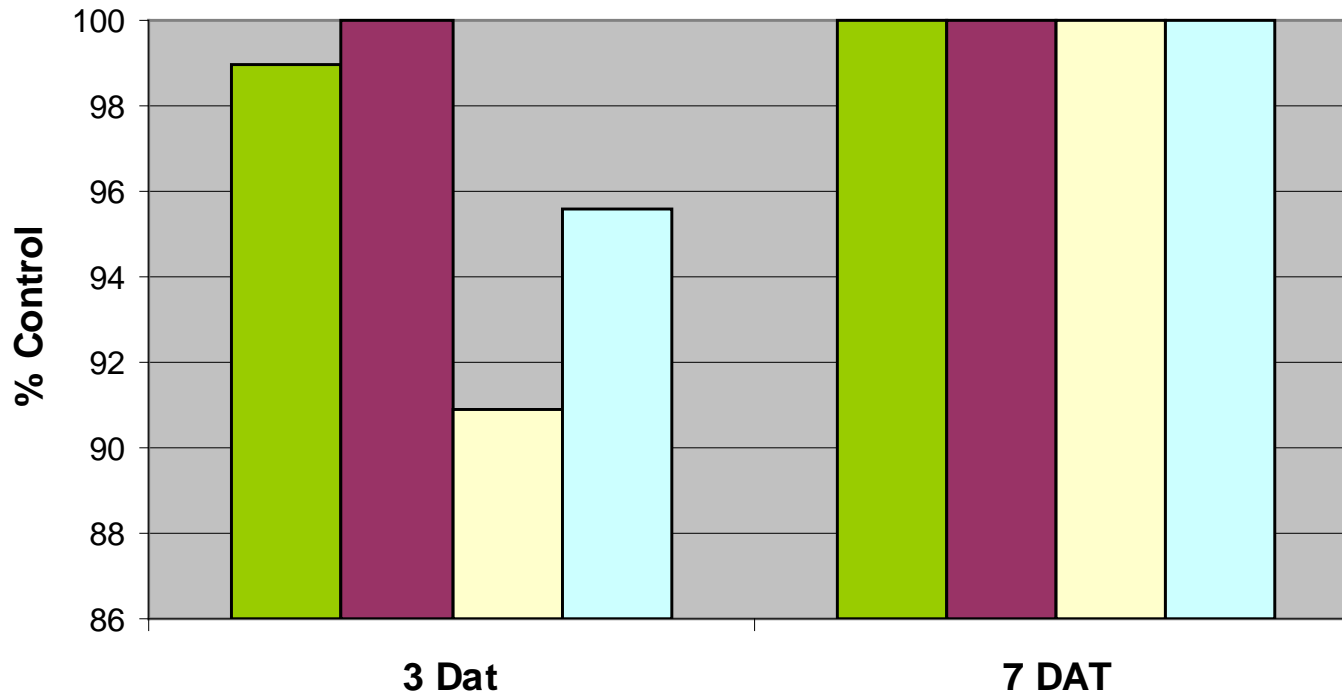
- ◆ Beneficial arthropods not affected (<30%) by cyflumetofen at 200 ppm

# Nealta miticide research testing results indicate: Nealta Activity Observed in 4 Hours



- Loss of motor coordination (initial symptom); 4 hrs after treatment
- Complete paralysis within 12 hrs

# Nealta miticide research testing results indicate: Efficacy on TSSM (nymphs & adults) in Almonds (2010)

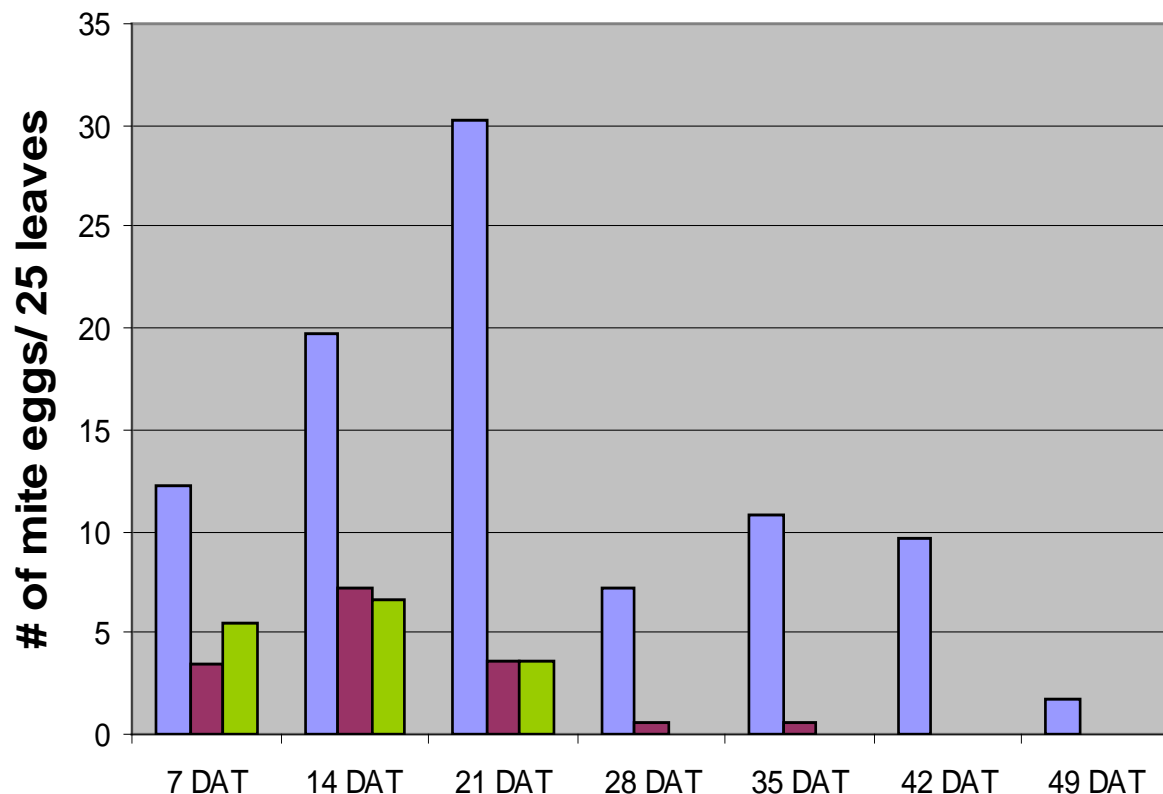


- Nealta 13.7 oz/A + 415 SO
- Nealta 13. oz/A + 415 SO
- Agrimek 16oz/A + MSO
- Acramite 1lb/A + 415 SO

- Moderate populations at 3 DAT falling below threshold at 7 DAT
- Hort oil did not influence efficacy
- Knockdown control at 3 and 7 DAT; equal to commercial standards



# Nealta miticide research testing results indicate: Efficacy on Pacific mite (eggs) in Grapes (CA, 2010)



- Check
- Nealta 14.6 oz/A
- Acramite 1lb/A



- Single application
- Moderate TSSM populations (25 leaves/ rep; 4 reps/ treatment)
- The adjuvant used was Break-thru® @ 4 oz/100 gal. Break-thru® is a non-ionic organic siloxane.
- Control at lower rate and excellent control at higher rate. Egg pop. started to drop from Day 21 onwards.



# BASF Acaricide: Cyflumetofen

- **Trade name:** Nealta™
- **Acaricide:** Controls spider mites only (all tetranychids)
- **Mode of Action:** Meti II Inhibitor (IRAC Group 25); no cross resistance to known acaricides
- **Crop Registration:** Almonds, Apples, Pears, Grapes, Citrus, Strawberries, ornamentals (including greenhouse), tomatoes, stone fruits, and minor crops
- **Rates:** 200 grams ai/ha; contact acaricide
- **Formulation:** SC (200 g/l)
  - This chemistry is active on all stages of mites (including eggs)
  - Equal to or better than commercial standards on knockdown activity
  - In the trials so far, residual activity is equal to commercial standards tested
  - No translaminar activity observed
  - The formulation is rainfast in about an hour (after drying)
  - Excellent safety profile on beneficial arthropods (incl. predatory mites, six-spotted thrips, and honey bees)
- **Registration in the US:** Expected submission date (to EPA and CA): 4<sup>th</sup> Q 2011 (expected launch Jan 2014)