## Introducing









### INSECTICDE NEMATICIDE FUNGICIDE MITICIDE

NANI NARAYANAN







## **History of Neem**

- Documented records since 400 BC for use in Agriculture
- Originated in India
- Spread to Asia, Australia, Africa, Australia & Caribbean
- Schmutterer and African experience

Neem has passed the test of time in its usefulness









## Chemistry

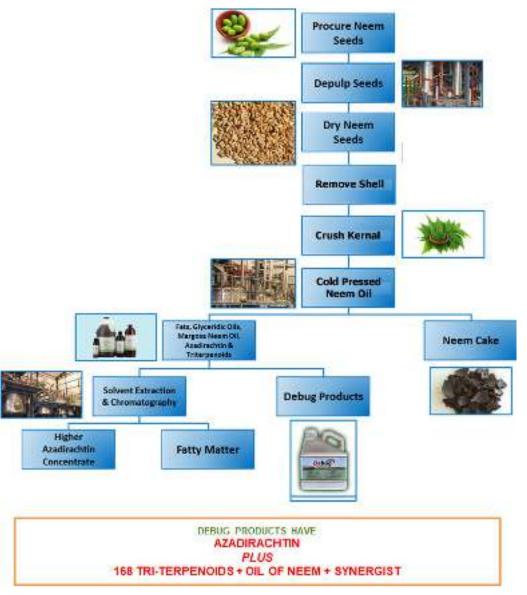
- Kernel extract used for pest management
  - Over 168 compounds diverse and complex
  - Aza & other triterpinoids











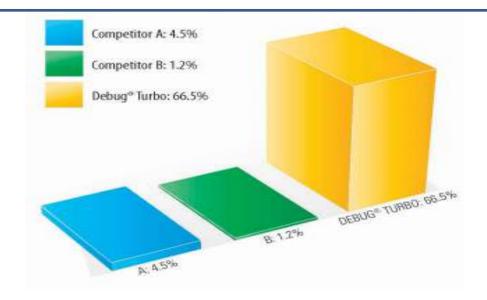








## Debug Products have high concentration of Active Ingredients



Debug Turbo & Debug Tres has multiple molecules

Other Neem insecticides have only single molecule









## Debug Products are only products approved by USEPA for QUADRUPLE action

- Insecticide
- Nematicide
- Miticide
- Fungicide











Example of Dual action
Nematode control & Pink snow mold control in
golf greens









## **Debug Difference**

- More stable in sunlight. High AZA products degrade faster in sunlight
  - Research has shown that the biomass extract of the Neem seed is (at lower concentration of Azadirachtin) more effective than the formulations containing Azadirachtin alone
    - "Aladirachtin use efficiency in commercial neem formulations, R V Kumar, H C Jayadevi, H J Ashika, Dept. of Entomology, Univ of Agriculture Sciences, Bangalore, India
- Coventional pesticides lead to Resistance due to single molecule.
   Debug Turbo prevents resistance because of Presence of multiple compounds
  - Study showed a 9-fold resistance to pure azadirachtin treated weekly after 40 generations, whereas a parallel line treated with neem extract developed no resistance to the compound
    - Selection for Resistance to Aladirachtin in the Green Peach Aphid, R. Feng and M.B. Isman. Department of Plant Science, University of British Columbia, Vancouver,

Studies show that a multiple molecule product is more efficacious for botanicals









## We are constantly improving our products

























Debug	TRÉS	Debug Optimo	ON neem oil formulation
-Dobog Turbo has soveral regendified in a sargin product	Bobus* Tess has several appedients in a sample product	Bebog* Operat has several regredients in a single product	Debug* ON has several ingredients in a single product
Fata & Object of the 65.8% Margani represent to the control of the	Fais & Shyceredic cub. 4.7% Marginia (contains To- terpensials & Nasie Od.	Fata & Observationals 15,0% Wangs as represent Tra- tegaments & Moser OI	Face & Opcians do color Mangalar Installers Tell Tell Tell Tell Tell Tell Tell Tel
Asytractus 0.7%	Acadination 35%	Assistantes 0.7%	Assoliración
Total Active Ingradients 66.59	Tetal Active Ingredients 7,2%	Tetal Active Population 15.7%	Total Active in products 70.5
Canser 15.09	Carrier 5.7%	Carrier 28.4%	
EnumberSurfaction 14.99	Ernalta/Surfaction 30.0%	EnumerSurfacent 39.4%	EnselveSaftvant 283
Quadruple action - Insecticide - Nematicide - Miticide - Fungicide	Quadruple action - insecticide - Nematicide - Miticide - Fungicide	Quadruple action - insecticide - Nematicide - Miticide - Fungicide	Quadruple action - Insecticide - Nematicide - Miticide - Fungicide
Has Several Als in Formulation AZADIRACHTIN + 168 TRI-TERPENOIDS + OIL OF NEEM + SYNERGIST	Has Several Als in Formulation AZADIRACHTIN + 168 TRI-TERPENOIDS + OIL OF NEEM + SYNERGIST	Has Several Als in Formulation AZADIRACHTIN + 168 TRI-TERPENOIDS + OIL OF NEEM + SYNERGIST	Fats & Glyceredic Oil Margosa AZADIRACHTIN + 168 TRI-TERPENOIDS + OIL OF NEEM
Less UV degradation	Less UV degradation	Less UV degradation	Less UV degradation
Prevents Resistance	Prevents Resistance	Prevents Resistance	Prevents Resistance
Insect and Mildew Control. Proven results	High Azadirachtin + more. Better alternative to Azadirect and Neemix	Stable in lower temperature Lower Neem Oil than Debug Turbo	Trilogy Replacement





## Debug Turbo works in multiple ways

- Insecticide- Debug® Turbo kills a broad spectrum of insects in their various stages of development
- Repellent- Debug@Turbo prevents Insects from entering treated
   Area
- Anti-feedant- Debug® Turbo deters insects from feeding on the treated surfaces.
- Insect Growth Regulator- Debug® Turbo Ingested young insects do not reach adulthood It is also an ovi-position deterrent and disrupts the molting process of insects.







## Broad Spectrum control on several Crops & Insects



#### Debug Turbo Controls

- Insects

-Mites

- Diseases

-Nematodes

ANTS

**APHIDS** 

BEETLES including Beanleaf Beetfes, Cucumber Beetfes, Japanese Beetfes, Mexican Beetfes, Colorado Potato Beetfes, Potato Flea Beetfes, Com

beetfes. Flea Beetfes

BORERS

BUGS including Chinch bugs, Lace bugs, Spittfe bugs

CASEBEARER

CATERPILLAR

CODLING MOTH

FRUITFLIES

FUSARIUM

GNATS, Fungus Gnats

**GRASSHOPPERS** 

GRUBS

LEAFHOPPERS

LEAFMINERS

LEAFROLLERS

LOOPERS including Cabbage loopers

LYGUS

MAGGOTS including Onion Maggots

MEALYBUGS

MILDEW including Rust and Powdery Mildew,

MITES including Two Spotted Spidermites, Pacific Spider Mites

MOTHS including Diamondback Moths, Gypsy Moths, Grape Berry Moths,

NEMATODES including Rootknot, Sting, Stem gall, Dagger, Spiral

ORANGE TORTIX

PHYLLOXERA

**PHYTHIUM** 

**PSYLLA** 

**PSYLLIDS** 

RHIZOCTONIA SOLANI

SCALES

SCLEROTINIA SCLEROTIORUM

SCLEROTIUM ROLFS#

SHARPSHOOTERS

THRIPS

WEEVILS including Pepper Weevils, Boll weevils

WHITEFLIES

WORMS including Army worms, Wireworms, Webworms, Budworms, Alfalfa Worms, Boll Worms, Pickle Worms, Root Worms, Ear Worms, Cut Worms, etc.

#### Use Debug Turbo on

Agricultural, Horticultural & Greenhouse applications Vegetables, Fruits, Ornamentals & Turf.

All common grasses including poa, Bermuda etc and, Alfalfa and other feed. & forage crops

Omamentals such as Chrysanthemums, Poinsettias, Roses, Lillies, Geraniums Daisies, Carnations, Salvias and Dahlias, Hastas & Hermacalles

Fruits such as Grapes, Citrus, Lemons, Oranges, Grapefruits, Apples, Plums, Peaches, Apricots, Avocados, Figs, Pears. Mangoes, Chemies, Persimmons etc.

Vegetables such as Cucurbits, Watermelons, Gherkins, Squashes, Pumpkins, Gourds, Bitter melons, Chayote, Okra, Asparagus, and Melons.

Bulb, Cole and Leafy vegetables such as Broccoli, Brussel sprouts, Cabbage, Celery, Lettuce, Endives, Kale, Parsley, Onions, Garlic, Shallot, Leek, Kohlrabi, Chard, and Spinach

Root and Tuber vegetables such as Beet, Carrot, Ginger, Radish, Horseradish, Potato, Tumip, Yams, Sweet Potato, Ginseng, Rutabagas, Watercress, and Turmeric.

Artichoke

Legumes such as Beens, Lentils, Peas, Peanuts etc.

Fruiting vegetables such as Tomatoes, Tomatillos, Bell Peppers, Chifi Peppers, and Eggplants

Berries such as, Blackberries, Blueberries, Strawberries, Cane berries, Gooseberries, Raspberries, Cranberries etc.

Tropical fruits such as Banana, Cherimoya, Mango, Guava, Papaya and Pineapple.

Herbs & Spices including but not limited to Mint, Anise, Basil, Chives, Coriander, Dill, Fennel, Marigold, Sage, and Thyme.

Nuts such as Almonds, Pecans, Pistachios, Cashews, Chestnuts, Macadamia Hazelnut, Brazil nut. Water chestnut, and Walnut.

All Greenhouse and nursery starter vegetables and fruit crops.





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Quadruple action

- Insecticide
- Nematicide
- Miticide
- Fungicide
- Highest concentration of Active Ingredient
- Several AI in one formulation
  - Azadirachtin
  - Several tri-terpinoids
  - Oil of Neem
  - Synergist
- Less cost per acre and better efficacy





### **DEBUG TRES GIVES YOU A LOT MORE FOR LOT LESS COST**

- ✓ More Active Ingredients per acre
- ✓ More Adjuvants per acre
- ✓ Additional ingredients

S

✓ MAKE MONEY GROW ON PLANTS

✓ Grower saved 27%





# Additional Advantages

- Compared to other products, the Debug® Turbo offers
  - UV degradation and
  - Less chance of insects developing resistance
- Debug®Turbo can be used in tandem with conventional pesticides, Pyrethrins and Spinosad to comply with EPA established tolerance limits.
- Debug® Turbo has one of the lowest Re-Entry Interval (REI) and Pre-Harvest Intervals (PHI) so the crop can be harvested the same day
- Beneficials can be used synergistically or in tandem with Debug® Turbo as it does not harm beneficial parasites and predators









## Debug Products in conventional farming

#### Low REI and PHI

Important during harvest.

#### Low tolerance limits

- Conventional pesticides allow low dosage and limited application
- Debug Turbo as a stop gap arrangement

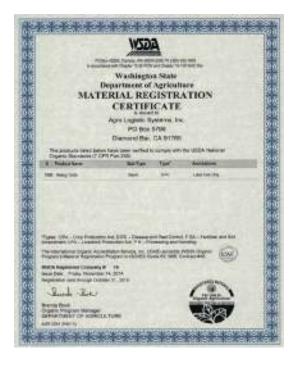








### NOP approved for ORGANIC production and......







WSDA registered for Organic Food Program

**OMRI** listed







Washington State Department of Agriculture Pesticide Management Division 1111 Washington Street SE, 2nd Floor PO Box 42591 Olympia WA 98504-2591 lephone (360) 902-2030 Fax (360) 902-2093 E-Mail: pestreg@agr.wa.gov

Date Printed: 12/08/2016

SF

#### PESTICIDE REGISTRATION CERTIFICATE

01/01/2017 - 12/31/2018

70310 Agro Logistic Systems Inc

Mailin PO Box5799 Contact: Shyam Chari

g:

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 E-Mail:
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Web: www.agrologistic.com

The following pesticide products have been registered for distribution in the state of Washington through 12/31/2018 unless

otherwise noted. This registration certificate supercedes any previous registration certificate.

Dept Use Only H&G State File #

N/R EPA/State Reg. No. Product Name Label ID ONLY RUP

	SECTION 3					
R	70310-5	Debug Turbo - Agriculture, Horticulture &	none	3		
	Approved: 01/01/2017	Greenhouse Use Ingredients				
		Azadirachtin (0.7%)				
		Neem oil (Margosa oil) (65.8%)				
R	70310-8	DebugTres		4		
	Approved: 01/01/2017	Ingredients				
		Azadirachtin (3%)				
		Neem oil (Margosa oil) (4.7%)				





## **Our Customers include...**

## Large & Small Farms

- Grimmway Farms
- Earthbound Farms
- Tanimura & Antle
- Orange County Land Mgmt
- Agricola El Toro
- Peri Farms
- And many more

# Fruits, Vegetable and Nut Growers

- Strawberry
- Grapes
- Vegetable
- Greens
- Almonds
- Golf Courses
- Green Houses
- Mushroom







### TRIAL DATA

- Best control of lettuce Aphid on a comparative trial vs Neemix and Azadirect. Full control of army worm, cabbage looper on Lettuce
  - Bio Research, CA
- Controlled silver leaf, white fly and Boll weevil in cotton
  - USDA Cotton research lab, Arizona
- Control of thrips, lygus, mites in strawberries in Orange county, Santa Maria and Watsonville
  - Agriculture Research Lab
- Control of Blueberry maggots in New Jersey and Michigan
  - Rutgers University
- Debug Turbo was effective in control of Thrips in Tomato
- Control of Aphids and whiteflies in Tomatoes in California and Sinaloa, MX
  - University of Sinaloa
  - IIBAT

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- UC Berkeley Debug Turbo had 30% more mortality in Leaf Hopper nymphs

5/22/2011 20





## **Debug Turbo**

Lettuce, Broccoli, Celery, Cauliflower, etc Conventional & Organic Veggies

### **Pests Controlled**

Aphids, Leafminers, Thrips, and Lygus. Mites, Mildew etc.

### Rate

16 - 104 fl oz (Rate dependant on Infestation)

PHI: 0

REI: 4 hours or when dries

Note

Coverage is key,









## **Debug Turbo**

# Strawberries, Raspberries, Blueberries Conventional & Organic

### **Pests Controlled**

Aphids, Leafminers, Thrips, and Lygus. Mites, Mildew etc.

### Rate

16 - 104 fl oz (Rate dependant on Infestation, 104 fl oz is optimal rate).

PHI: 0

REI: 4 hours or when dries

### Note

Coverage is key,







## Debug

## Debug Trés

Lettuce, Broccoli, Celery, Cauliflower, etc Conventional & Organic Veggies

### **Pests Controlled**

Aphids, Leafminers, Thrips, and Lygus. Mildew

### Rate

10-22.5 fl oz (Rate dependant on Infestation)

PHI: 0

REI: 4 hours or when dries

### Note

Coverage is key,







## **Debug Trés**



## (Strawberries, Raspberries, Blueberries) Conventional & Organic

### **Pests Controlled**

Aphids, Leafminers, Thrips, and Lygus. Mites, Mildew etc.

### Rate

10-22.5 fl oz (Rate dependant on Infestation, 22.5 fl oz is optimal rate).

PHI: 0

REI: 4 hours or when dries

### Note

Coverage is key,









## Thank you



