

Practical Hive & Plant Management against Bugs

Winfridus (Win) Bakker
BSAE, BSAH

[We always keep exploring](#)

August 2023



SOME OF THE SUBJECTS DISCUSSED OVER THE LAST 4 YEARS

Chemicals found in wax foundation & its origins.

Plants for Foraging Honeybees.

Planting Native Plants for Honeybees & Pollinators.

How Pesticides & Herbicides Impact Honeybee Health.

Bee Informed Partnership (BIP)

Results from the yearly 2022-2023 survey:

"Honey bees just staggered through the second highest death rate on record, with beekeepers losing nearly half of their managed colonies"



Points to be discussed

Easy ways to protect the hives from invaders

Wax moths, Yellow jackets & Wasps, Hive beetles & Ants.

How to protect plants from hot dry weather conditions and let them thrive.

How to protect plants from bugs (general)



Wax Moth Control

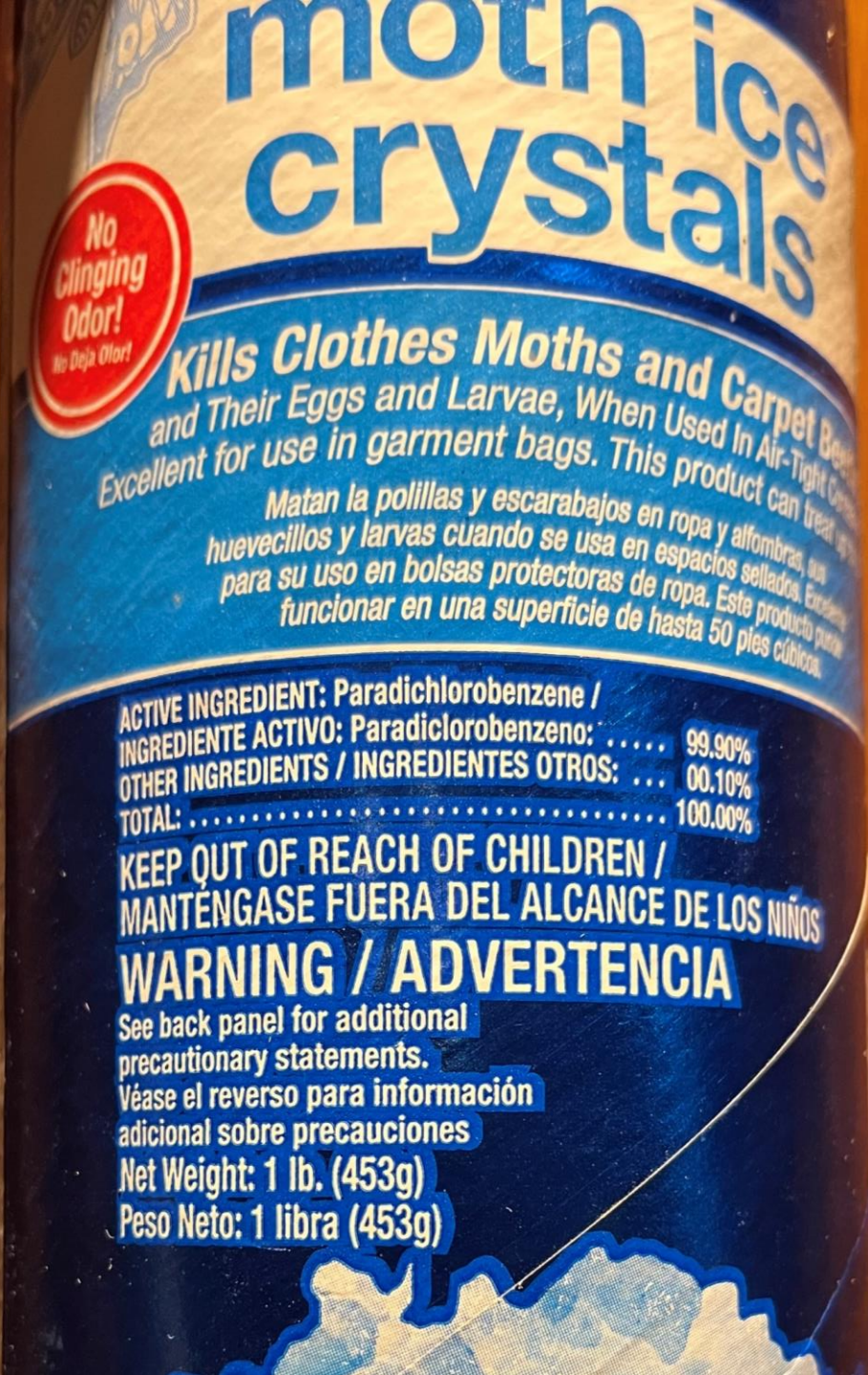


3 ½ cups of water,
3 ½ cups of vinegar,
1 ½ cup of sugar &
1 ½ banana peels
placed in 2-liter bottle
with 1 or 2 large openings
on the upper side









6 Tablespoons for 5 deeps or 7 medium supers stacked tightly.

Place crystals on top.

PDCB is heavier and will drop slowly to the bottom.

Air frames for several days before use.



Wasp and Yellow jacket control



Mix 1 cup of water with 1 cup of apple cider vinegar and 1/4 cup of sugar and 1 tea spoon (5 ml) of Boric Acid.

Or

1 cup of clear soda pop mix with 1 cup of apple cider vinegar and 1 tea spoon (5 ml) of Boric Acid.

Or

1/2 gal. of apple juice + 1/2 gal. of water and 2 tea spoons (10 ml) of Boric Acid.



Other Hive treatments discussed in other bee meetings

☐ Nematodes against hive beetles .

Apply in early spring,

Keep soil moisturized around hives,

Beetle traps inside the hive.



❑ Ants: Use of Boric acid in medicine containers with small holes for ant access.

Mix 1 cup of water with $\frac{1}{2}$ cup of sugar with 2 teaspoons (10 ml) of Boric acid.



How to protect plants from hot dry weather conditions







WATER CONSERVATION

2d year
Tulip Poplar trees
in 2 gallon pots





Instead of daily or twice daily watering, now only every 2 days.



How to let plants & vegetables thrive



Preventive thinking

- Plant diseases and pest start long before they are visible.
- Stress, undernourishment, shortage of water & pests will seek the plant out.
- Have plenty of room & light to get to the leaves.
- Water near the soil and not over-head.
- Determine the pH of the soil & check plant requirements.
- Apply at least 2x/year the nutrients they need (NPK).
 - Blood meal for plants (12-0-0),
 - Bone meal (3-15-0),
 - Miracle growth (24-8-16) + B, Cu, Fe, Mn, Mo, Zn,
 - All purpose plant food 10-10-10,
 - Epson salt (Mg),
 - Wood ash (14-19% K).



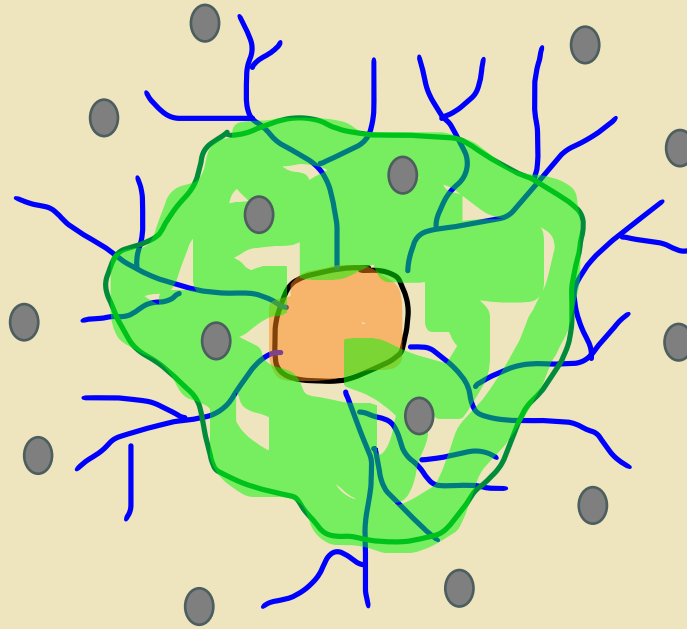
Main components of fertilizers

- N = Nitrogen: Needed for growth principally.
 - P= Phosphorus: Supports root growth, maturity & fruiting & seed formation.
 - K= Potassium supports disease resistance & plant hardiness, reduces water needs & helps in N uptake.
- ❑ Phosphorus & potassium are not mobile in the soil & need close contact with plant roots in order to be taken up.



Spreading or auger fertilizers

Never apply fertilizers close to the trunks or base of the tree, bushes.



1 x or 2x / year apply 1 lb of fertilizer per inch of trunk diameter @ chest height, or auger holes 6" to 8" (15-20 cm) deep using grid pattern.



Common plant observations

- ❖ Leaves are turning yellow.
 - ❖ Not enough Nitrogen,
 - ❖ Mg deficiency (use Epsom salt),
 - ❖ Overwatering (yellow leaves with brown spots),
 - ❖ Diseases like blight, bacterial spots (insect attractive plants close to the tomato plants for example).



Considerations for your plants

- Home remedies to treat bugs are preventive and not curative.
- Home remedies keep your bee yard clean of pesticides.
- Higher quality honey.
- Know the pH of the soil and the specs of your plants.



Common pests

- Kill leaf eating insects:
- Kill Spider mites:
- Deter White flies:
- Control cabbage worms and loopers:
- Control plant mites and plant lice:
- Control codling moth that attack, apple, plum and pear trees:
- Control ants around the house and beehives:
- Combat plant beetles:
- Control fungi:
- Avoid rabbits eating your plants:
- Eliminate rats:
- Avoid squirrels ransacking bird feeders:
- Discourage deer:



The most commonly found agrochemicals in wax include beekeeper-applied miticides containing tau-fluvalinate, coumaphos, & amitraz, & field-applied pesticides containing chlorothalonil or chlorpyrifos. Wax contaminated with these pesticides negatively affects the reproductive quality of queens and drones.



Common insecticide products not recommended!

Sevin: Very toxic to bees, lady beetles, parasitic wasps and many other beneficial insects. Very toxic to aquatic invertebrates and shell fish.

$LD_{50} = >2000 \text{ mg/kg (ppm)}$

Malathion is also highly toxic to bees, but low in toxicity to mammals when applied to the skin. The acute dermal LD_{50} in rats is $>2000 \text{ mg/kg}$.



Natural insecticides

- [Neem oil](#) will help control aphids, cabbage worms, scale, whiteflies & leaf miners while not harming bees.
 - Can be applied to the soil & leaves.
 - Will control also plant fungus.
 - Apply early morning or evening.
 - Harvest after application: 1 day but better >5 days.
- [Insecticidal soap](#): disrupts cell membranes & causes dehydration.



A6 13722542

CAPTAIN JACK'S
Neem Oil Concentrate

- ✓ Stops powdery mildew in 24 hours
- ✓ For use in and around the home and home garden
- ✓ Can be used up to day of harvest
- ✓ For Organic Gardening

Lift & Peel Here

EPA Reg. No. 70051-2-4 EPA Est. No. 4-NY-1
©Bonide Products, LLC All Rights Reserved

BN

Distributed by:
Bonide Products, LLC
6301 Sutliff Road
Oriskany, NY 13424



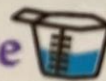
Pint

TRUSTED SINCE 1926
BONIDE

CAPTAIN JACK'S
Neem Oil

3 garden products in one

Concentrate



Controls blackspot, powdery mildew, rust, spider mites, aphids, whiteflies & other insect pests

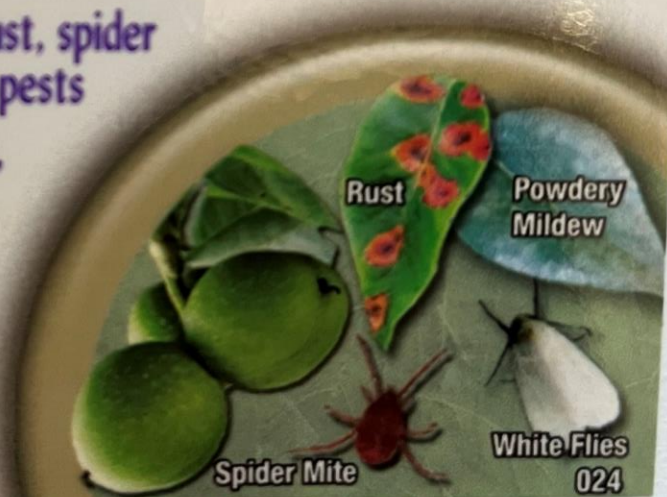
For use on roses, flowers, houseplants, ornamental trees and shrubs, fruits, nuts and vegetables

ACTIVE INGREDIENT:

Clarified Hydrophobic Extract of Neem Oil.....	70.00%
OTHER INGREDIENTS:	30.00%
TOTAL:	100.00%
EPA Est No. 4-NY-1	EPA Reg. No. 70051-2-4

Keep Out Of Reach Of Children

CAUTION (See back booklet for additional Precautionary Statements and First Aid)
Net Contents 16 FL OZ (473 ML)



FOR ORGANIC GARDENING

024

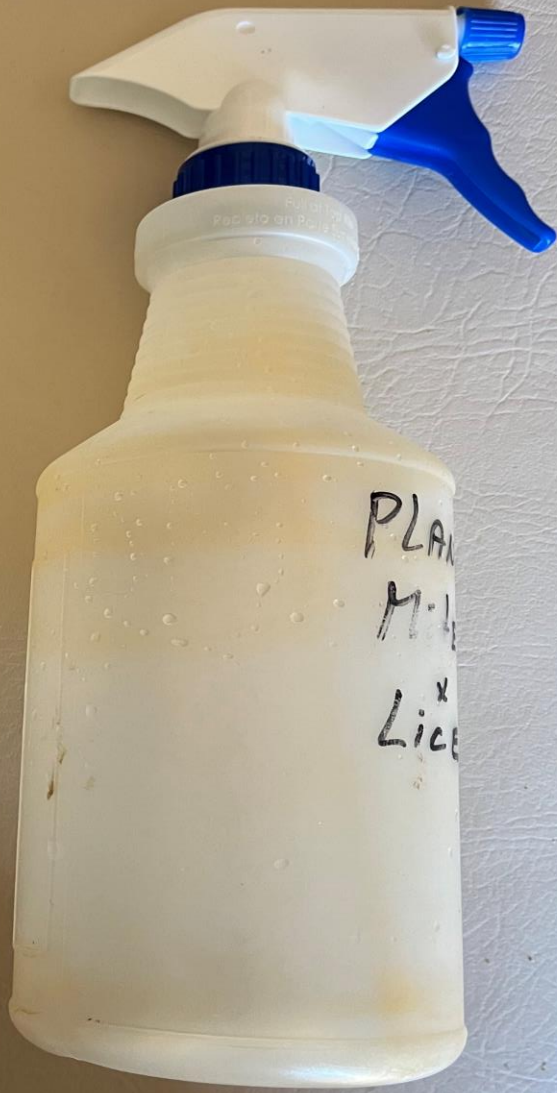
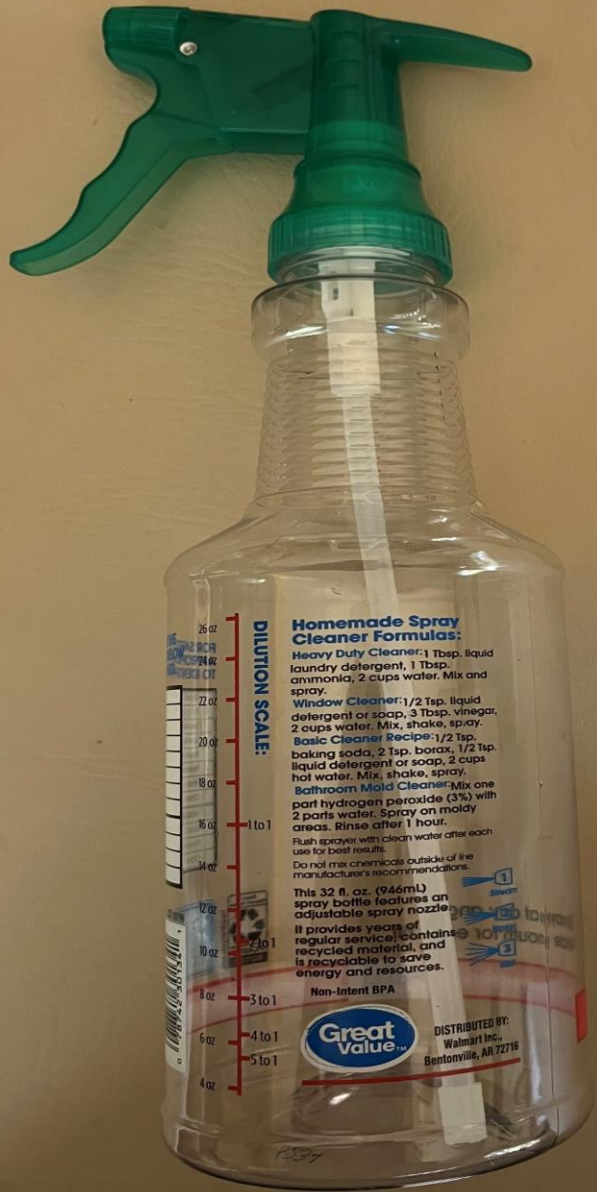


Neem or Nim tree (*Azadirachta indica*)



Home made remedies against pests are preventive and not *curative*.











DANGER
This sprayer is operated with liquid under pressure. Failure to observe CAUTION and to follow instructions for use and cleaning can cause tank, hose and other parts to be weakened and/or ruptured under pressure. This is a SERIOUS INJURY from high pressure discharge of liquids or forcible ejection of parts.
Inflammable materials in this sprayer. Material could ignite or explode causing SEVERE INJURY.

CAUTION
Read instructions packed with the sprayer.
Wear eye protection. Avoid hazards. Caution, hot water or acids in this tank.
Always use proper technique and directions on label of pesticides or any spray material before using.
Wear protective clothing when using sprayer.
Do not spray directly at people or animals.
Do not spray directly at plants or animals.
Do not spray directly at eyes.
Do not spray directly at face.
Do not spray directly at mouth.
Do not spray directly at nose.
Do not spray directly at ears.
Do not spray directly at hair.
Do not spray directly at skin.
Do not spray directly at clothing.
Do not spray directly at shoes.
Do not spray directly at feet.
Do not spray directly at hands.
Do not spray directly at fingers.
Do not spray directly at toes.
Do not spray directly at feet.
Do not spray directly at feet.
Do not spray directly at feet.

The manufacturer's name, address, phone number, and website are listed at the bottom of the label.



Control squash borer:

- ❑ Wrap aluminum foil around base of the plants or use a panty hose.
 - Clusters of bright red eggs.
- ❑ Spray leaves with 50% water & 50% art. vanilla extract.
 - Masking bitter compound

Control fungi:

- ❖ Put 3 table spoons of apple vinegar per gallon of water and spray in the morning.



Control and eliminate plant mites and plant lice:

- Mix 1 cup of hot pepper sauce with 2 table spoons of baby shampoo in 1 gallon of water. Pour in handheld sprayer bottle and apply to the plants to the point of runoff.

Kill slugs:

- ✓ After dark when they come out to feed on the vegetables fill a handheld sprayer bottle with white vinegar and spray the plants.



Control cabbage worms and loopers:

- Mix 2 table spoons of ground cayenne pepper with 1 cup of flour and dust the mixture on cabbage family plants.

Another solution:

- Mix 1 table spoon of lemon juice in 1 cup of milk. Once a week put a table spoon in the center of each cabbage plant or other plants of the Brassica family (broccoli, Brussels sprouts, cauliflower and kale).



Control codling moth

They attack, apple, plum and pear trees:

- Use 1 gallon milk jug and fill with 1 part of molasses to 1 part of apple cider vinegar.
- Use solution to fill other milk jugs with 2" to 3" deep solution and hang on some branches.

Combat beetles:

- ❑ A soap spray kills any insect you can name. However, on beetles due to the hard shell you need to add peppermint oil to the mix.
- ❑ Mix 2 table spoons of dishwashing liquid in 1 gallon of warm water and add 2 teaspoons of peppermint oil. Use hand held sprayer bottle and treat the affected plants or flowers.



Conclusions

- Check hives regularly against invaders.
- Think preventively of treating plants before problems arise.
- Plants & trees need ventilation & nutrient supplies to keep strong.
- Know what NUTRIENTS are missing in your soil.
- Home remedies are preventive not curative.
- Neem oil extract as an easy way to biologically protect your plants/trees.
- If all fails, use a known pesticide to control the problem & continue with neem oil.

Exchange seeds & plants between club members?

- Use of an App (“Seek” or “Picture this”) to ID plants.
- Are members interested in this program?
- Should we have in Sept. meeting a clipboard going around to sign up?
- Make special group-email or WhatsApp for these members?

