

# Pacific Pests, Pathogens, Weeds & Pesticides - Online edition

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## PDPs (preparation & use) (056)

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### General instructions

#### Do the following:

- Select fresh, healthy plant parts to use as pesticides; reject plants with moulds on them.
- Dry plant parts properly for future use. Keep in an airy container (not plastic containers) in a shady place.
- Do not use household cooking tools for preparing plant extracts, or containers used for drinking water. Clean all tools well after using them.
- Avoid contact with crude extracts during preparation; wear protective clothing when applying.
- Keep plant extracts away from children and house pets.
- Harvest all mature and ripe fruits on trees before spraying.
- Always test the plant extract on a few infested plants before large-scale spraying.
- Wash your hands after handling the plant extract and wash your clothes, too.

### Preparing home-made pesticides

There are many options for home-made pesticides to treat a wide variety of pests. Review the following recipes to find the right treatment for your situation.

#### **Ash:** active against *grasshoppers and beetles*

- Take ash from fire (make sure it is cool!)
- Beat to make fine
- Put in coarse cloth or into a strainer
- Shake thinly over each leaf

#### **Baking soda (sodium bicarbonate):** active against fungi

- Dissolve one or two tablespoons of baking soda in 4.5L water
- Spray once a week.

Sodium bicarbonate can be an effective way of controlling fungal growth - it is registered by the US Environmental Protection Agency as a Bio-pesticide.

Sodium bicarbonate increases the alkalinity of the surface of the leaves, which is not favourable for the growth of fungi. There could also be protective activities.

Can also be used on cucumber, squash, melon, cabbage, lettuce, and tomato. It does well on most ornamentals, too, although it's often best to test a leaf before you spray the whole plant as herbs and other tender-leaved plants may show signs of burning.

#### **Baking soda (sodium bicarbonate):** active against *soft-bodied insects, such as aphids*

- Combine 5 cups (1.25L) of warm water
- 2 teaspoons of baking soda
- 2 teaspoons of natural liquid soap
- 1.5 teaspoons of vegetable oil
- 1.5 teaspoons of natural vinegar

Blend until the mix is white and foamy, then spray it on the plants right away with a hand sprayer. Agitate the sprayer as you go. Try to cover the leaves of your plants and give any insects a good wetting.

#### **Beer:** active against *slugs and snails*. They are attracted to the smell.

- Place beer in shallow pans or saucers with edges level with the ground
- Slugs and snails will crawl in for a taste and drown

#### **Chilli:** active against *ants, aphids, caterpillars, mealybugs* (see **Fact Sheet no. 504**)

- Take 1 cup dry or 2 cups fresh chillies
- Smash to a fine paste
- Put into bucket with 1L water and rub with hands (cover hands with plastic bag or wear rubber gloves)
- Soak for at least 1 hour; squeeze and strain
- Make up to 1L with water
- Add 1 teaspoon of (Castille) hand soap

#### **Derris:** active against *caterpillars, grasshoppers, aphids, spider mites, plant hoppers; beetles*. (**Note, Derris is toxic to fish**)

- Take 2 roots of Derris (20cm long and as thick as a small finger) and smash well

- Put roots in a bucket overnight and cover with water
- Make up to 2L with water
- Strain, and add 2 teaspoons (Castille) hand soap

**Garlic:** active against *caterpillars, mites, thrips, and possibly some fungal diseases*

- Scrape 4 garlic in a small amount of vegetable oil
- Soak overnight
- Make up to 2L with water
- Strain, and add 2 teaspoons (Castille) hand soap

**Gliricidia:** active against *aphids, caterpillars, whitefly*

- Grind or pound 0.5kg leaves
- Soak overnight in water
- Make up to 20L with water
- Strain, and add 10 teaspoons (Castille) hand soap

**Note:** *Gliricidia* is also a rat poison. Mix the amounts above with boiled rice. May need to make up fresh every day. Place the 'food' in a bamboo to protect it from children, pets and domestic animals. Bacterial action converts chemicals in the leaves to brodifacoum-like substances.

A recipe by ECHO Community is as follows: (<https://www.echocommunity.org/resources/24357c26-405d-451a-b743-83754ccd9f30>)

- Take one branch of *Gliricidia* about 5-6 feet (175cm) long and about 1-2 inches (2.5-5cm) diameter (it is usually a new shoot less than a year old)
- Cut off the bark with a knife and cut it into small pieces [about 1-2 inches (2.5-5cm) in size]
- Mix the bark with about 3 gallons (12L) of maize seed in a large pail or drum
- Add water near to the top of the corn, bring to a boil, and boil for about 10-15 minutes
- Turn off the heat and let set. The next day pour into a 5 gallon (20L) pail or drum (to mix it) and let it ferment for 2-3 days
- Any extra can be dried for later use

**Hot water:** active against *ants, nematodes in yams and used to sterilise nursery soil*

- ANTS Use to destroy nests, but be careful not to pour boiling water onto the roots of (crop) plants that might be growing close to the nests. You will kill them!
- SOIL Use boiling water to sterilise soil: pour over the soil that you have placed in seed boxes or over nursery soil spread thinly on the ground.
- YAM Use hot water to kill nematodes in yams with dry rot before cutting and planting. Dip whole yams in hot water at 51°C for 10 mins (use a thermometer and clock - do NOT guess). (**See Fact Sheet no. 08**).

**Marigold:** active against insects and is a repellent (planted for control of nematodes)

- Collect 2.5kg leaves/flowers; pound and mix with enough water to cover them
- Strain through a cloth and make up to 18L with water
- Add 9 teaspoons (Castille) hand soap

**Milk:** active against *powdery mildew fungi*

- Use full strength milk, diluted to 10% (1 part milk, 9 parts water)
- Add soap if milk does not spread over leaf surface (rate of 1 teaspoon to 1L milk)

**Neem:** active against *caterpillars, aphids, grasshoppers, whiteflies and many more; also fungi and nematodes (see Fact Sheet no. 402)*

For leaves:

- Put 1kg of leaves plus 5L water in a bucket and leave overnight
- Remove the leaves, retain the water and pound the leaves
- Squeeze the leaves and add the 5L water used for soaking them overnight
- Strain, and add 10 teaspoons of (Castille) hand soap

For mature seeds:

- Wash the fruits, remove the husk and dry the seeds
- Take 12 handfuls of dry seeds (or use 500g per 10L water)
- Grind them into a fine powder
- Mix the powder in 12L water and soak overnight
- Strain, and add 12 teaspoons of (Castille) hand soap

**Papaya:** active against *thrips*

- Shake 1kg leaves in 1L water and squeeze through cloth
- Add 4L soap solution (100g soap/25L water)

**Soap:** active against *scale insects, mealybugs and aphids*

- Use (Castille) hand soap, not detergent
- 5 tablespoons of soap in 4 litres water; **OR**
- 2 tablespoons of dish washing liquid in 4 litres water

**Soursop or Custard Apple:** active against *aphids, caterpillars (diamond back moth), planthoppers, grasshoppers*

- Take 500g of fresh **leaves**; boil leaves in 2L water until water is reduced to 0.5L
- Dilute to 10L with water
- Strain, and add 10 teaspoon (Castille) hand soap

Also:

- Take 2 handfuls of **seeds** and grind into a fine powder
- Mix with 4L water and soak overnight
- Strain, and add 4 teaspoons (Castille) hand soap

**Tobacco:** active against *caterpillars, aphids, and more*

- Smash 5 large leaves
- Add 1L water and leave overnight
- Make up to 2L with water
- Strain, and add 2 teaspoons of (Castille) hand soap

**White Oil:** active against *powdery mildew fungi and also many sucking insects, especially mealybugs, scales, and aphids*

- 3 tablespoons (1/3 cup) vegetable cooking oil in 4L water
- 1/2 teaspoon dishwashing detergent
- Shake well and use

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Note, a teaspoonful of soap is about 2g.

Castille soap is body soap made from vegetable oils. It does not contain animal fats or synthetic ingredients.

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AUTHOR Grahame Jackson

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