

Chilli pesticide (preparation & use) (504)

Summary

- Chillies are grown world-wide. There are many varieties and they differ in 'hotness'.
- Active ingredient is *Capsaicin*. The common varieties have a range of 'hotness' [measured in Scoville heat units (SHU)], e.g.:
 - Habanero (Red Savina) = 350,000 to 750,000 SHU.
 - Habanero (Fiji Bongo Chili) = 100,000 to 350,000 SHU
 - Nepalese Akabare = 100,000 to 350,000 SHU
 - Bird's Eye = 50,000 to 100,000 SHU.
- Formulation guide:
 - Bird's Eye – 20g/L fresh weight (about 30 ripe fruits)
 - Bongo chili/Akabare – 10g/L fresh weight (about 5 ripe fruits)
 - Red Savina – 5g/L fresh weight (about 3 ripe fruits).
- Must use personal protection equipment (PPE) when preparing the chillies and spraying:
 - Collect mature to ripe fruits of selected chili variety.
 - Crush and pound the chillies, working them into a paste.
 - Place the paste on a fine muslin cloth and bring the sides together making a cloth bag enclosing the paste. Place the cloth bag in a bucket adding sufficient water to cover the bag for at least 1 hour, preferably overnight.
 - After soaking, squeeze the juice from the bag with hands protected by rubber gloves or plastic bags.
 - For each 1L water of the final mix, add 10ml (1 bottle cap) cooking oil and 5g (1/2 bottle cap) bar soap (preferably vegetable Castile soap).
 - Check to see if the mix contains plant material which might block the sprayer. If it does, strain through fine muslin or a metal strainer.
 - Add water to achieve final volume; pour into the sprayer, and use.
 - Adapt formulation to 10L or 15L mixture to fit hydraulic knapsack sprayer.
- Used to control aphids on a range of vegetable crops, thrips on eggplant, and to disrupt the symbiotic relationship between ants (e.g., white-footed ant), aphid and scale insects, particularly *Icerya seychellarum*.

Common Name

Chilli. It is also known as chilli pepper, cayenne pepper, and pimento in Portuguese.

Scientific Name

Capsicum frutescens; there are many other species that produce 'chillies', e.g., *Capsicum annum*, *Capsicum baccatum*, *Capsicum chinense*, and *Capsicum pubescens*. They are all members of the nightshade family, the Solanaceae.



Photo 1. Citrus trunk showing large numbers of white-footed ants (*Technomyrmex albipes*), above and below the band of grease.



Photo 2. Few white-footed ants (*Technomyrmex albipes*) remain after spraying with chilli extract before spraying.



Photo 3. Before spraying citrus foliage with chilli extract, high infestation of aphids.



Photo 4. Large infestation of white-footed ants (*Technomyrmex albipes*) and *Icerya* scale on guava, before spraying with chilli extract.



Photo 5. After chilli spray aphids on citrus beginning to die.



Photo 6. Day-2 after spraying chilli extract, aphids on citrus are dead.



Photo 7. Dead *Icerya* on guava leaf after spraying with chilli extract.

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Information from Pacific Organic Standard. SPC Land Resources Division, Suva, Fiji. (<https://lrd.spc.int/pacific-organic-standards>); and Scoville heat scale. Wikipedia. (https://en.wikipedia.org/wiki/Scoville_scale). and from Maskey B, et al. (2021) Post-harvest quality of fresh Akabare chilli (*Capsicum chinense*) as affected by hydrocooling, package modification and storage temperature. International Journal of Food Properties. (<https://www.tandfonline.com/doi/pdf/10.1080/10942912.2020.1865399>).

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