
Bugs
HORTIS

· PLANT EXTRACTS FOR THE CONTROL OF INSECT PESTS ·

WHAT ARE THEY?

SOME PLANTS EXTRACTS, ALSO IN COMBINATION WITH OTHER NATURAL SUBSTANCES READILY AVAILABLE (E.G. NATURAL SOAPS, MINERALS), HAVE REPELLENT, INSECTICIDAL, ANTIFEEDANT, AND ANTIFERTILITY ACTION AGAINST INSECT PESTS, CAN INCREASE THE STRENGTH OF THE PLANT TO DISEASES CAUSED BY FUNGI, BACTERIA OR VIRUSES, AND EVEN DRIVE AWAY OR ELIMINATE THE PATHOGEN.

PLANT FEATURES

In general, the plants to be used should:

- Pose no hazard to non-target organisms, wildlife, humans or the environment.
- Be naturally present near the area where the garden is, or be easy to grow and require little space and time for cultivation.
- Be easy to harvest.
- Preparation should be simple, not too time-consuming or require too high technical input;
- applications should not be toxic to crops.

HOW DO YOU MAKE THEM?

Natural extracts can be prepared as:

- **Decoction:** soak in cold water for a day, boil shortly (20 min.), cover the container and once the liquid is cool filter it.
- **Infusion:** put the plants into a container and pour boiling water over them, brew for 24 hours within the container covered
- **Macerate:** put the plants into a container filled with water outdoor, stir the extract every day for 1-2 weeks, the macerate is ready when it has become dark and does not foam.
- **Extract:** maceration in alcohol in a closed container, filtration and dilution.

EXAMPLES OF EXTRACTS USED AND PATHOGENS AFFECTED

- **Garlic (bulbs extract):** whitefly, aphids, armyworms, caterpillars, Colorado potato beetle, slugs.
- **Chili (fruit/seeds infusion):** leaf eating pests, aphids, whitefly.
- **Coriander (leaves decoction, seeds extract):** spider mites (repellent).
- **Neem (leaves/seeds extraction, decoction):** aphids, spider mites, caterpillars, scale insects, mealybugs.
- **Stinging nettle (leaves decoction):** spider mites, ants (repellent), aphids (repellent).

THINGS TO BEAR IN MIND

Plants in pest control are most effective when used in an integrated pest management (IPM) program, which includes cultural practices, mechanical control, biological control, use of old plant varieties.
Plant extracts used for pest control degrade rapidly in sunlight, air, and moisture, and by detoxification enzymes. Rapid breakdown means less persistence and reduced risks to non-target organisms.
However, precise timing and/or more frequent applications may be necessary.

SOME CONSIDERATIONS

- Before taking action, you should be able to recognize pest from beneficial or harmless insects.
- The plant extracts for biological control can be easily self-produced at home.
- Sometimes, as in the case of macerated nettle and neem, plant extracts are also excellent fertilizers.

INTERACTIVE QUESTIONS

- Are you familiar with traditional natural remedies to control pests in the area where you live? The preparation methods are similar to those here described ?
- Why plant extracts may be effective in the control of insect pests?
- When is it advantageous to use plant extracts for biological control rather than natural products that are on the market? What are the advantages and disadvantages of the use of plant extracts?

Lifelong Learning Programme

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