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INNOVATIVE HORTICULTURE

Pest and Disease Management Tips For Olives

The main olive pests and diseases to check for are: Scale insects, Lace Bug and Peacock Spot

Scale insects

There are two types of scale insects that attack olive trees in Australia; soft scale and armoured scale.

• Soft scale species belong to the Coccidae family and include the Black Olive scale (Saissetia oleae) and the Soft Brown scale (Coccus hesperidum)

• Armoured species belong to Diaspididae family and include: Oleander scale (Aspidiotus nerii), Red scale (Aonidiella aurantii), San Jose scale (Comstockaspis perniciosus) and Olive scale (Parlatoria oleae).

Most soft scales often have only one or two generations per year, while most armoured scales can have several. Eggs of both types of scales are usually hidden under the mother's cover and are not visible. Eggs hatch into tiny, usually yellow crawlers with legs. The female adult dies soon after the eggs have hatched. Some armoured scale species give birth to live young.

Crawlers walk over the plant surface, are blown by wind to other trees, or can be inadvertently moved by people or birds.

Armoured scales settle down permanently after a day or two in the crawler stage, molt and begin to form their characteristic covers. Soft scales move around for a while longer but also eventually settle at permanent feeding sites.

Sooty mould is an unsightly fungus that is often associated with scale infestation. The mould grows on the excretions (honey dew) produced by the scale insects as they feed on the tree. The fungus does not cause any direct damage to the trees but can cause a significant reduction in photosynthesis by blocking sunlight from the leaves.

Sooty mould can only be removed if the insects producing the honeydew are controlled. Once the scale insects are gone the honeydew supply stops and the sooty mould will slowly dry and flake off with exposure to sunlight and rain.

Biological control

Beneficial insects that are natural enemies of scale can be used to help manage scale. These include: the scale eating lady beetles (Rhizobius spp.).

The larvae of these predacious lady beetles can be found under the female soft scales feeding on scale eggs and crawlers. Many parasitic wasps are important natural enemies of scales, including species of Aphytis, Coccophagus, Encarsia and Metaphycus.

Parasite activity can be monitored by checking scale covering for the round exit holes made by emerging adult parasites and by turning armoured scale over and looking for immature parasites.

Growing flowering plants around the grove will help to augment natural enemies. Adult parasitic wasps live longer, lay more eggs, and kill more scales when they have nectar or honeydew to feed on.

Excessive amounts of dust from roads or cultural operations also can disrupt the activities of.

natural enemies resulting in reduced scale control.

Some beneficial insects are commercially available for release against olive scale pests in Australia and can be obtained from specialist suppliers

Ants deter natural enemies, and if large numbers of ants are climbing up trunks to tend scales they should be controlled. Ants can be denied access to plant canopies by applying a sticky material (such as Stick'em) to the base of the tree trunk.

Insecticides can have direct effects on natural enemies by killing them or indirect effects by eliminating their hosts and causing starvation. In some cases, insecticides such as mineral spray oil can be successfully integrated into the system without harming natural enemies.

Chemical control

Three insecticides have been registered with off label permits for the control of scale insects in olives: Methidathion (Supracide, *rate-1.25m/L*), Buprofezin (Applaud *rate-3-6m/L*) and mineral spray oils.

Applications of these chemicals must be carefully timed to reach immature scale in the crawler stage. At later stages the scale are very resistant to treatments. The main crawler stages for scale are in spring and summer. A second crawler stage may also be present in autumn.

At least two sprays during each crawler stage are necessary because treatments do not kill the eggs. The second spray kills crawlers developing from the eggs still unhatched at the time of the first spray.

Use traps made of double-sided sticky tape to determine when crawlers are hatching. Before crawlers begin to emerge in spring, tightly encircle several twigs or branches on the infested tree with transparent tape that is sticky on both sides. Change the tapes at regular intervals, about weekly, and examine the tapes with a hand lens to identify the crawlers. Once eggs begin hatching, scale crawlers get stuck on the tapes and appear as yellow or orange specks

Apply insecticide treatments after a sharp increase in crawler production occurs or after crawler numbers have peaked and begin to decline.

Olive lace bug (Froggattia olivinia)

Olive lace bug is a serious pest of olives. Heavy infestations can cause loss of vigour, severe defoliation and reduced fruit yield. The bugs are sap-sucking insects that feed on the underside of the leaf causing a yellow mottling of the leaf surface which usually turns brown and eventually drops.

The olive lace bug can have numerous generations per year depending on the climate. New infestations can occur regularly throughout the growing season. Eggs that have over-wintered on the tree usually begin to hatch out in spring or late winter.

The eggs are usually laid in the brown sticky excretion on the underside of the leaf and are protected from insecticide sprays.

Management

Monitor the trees starting in early spring for evidence of insect infestation. Apply insecticide treatments soon after lace bug activity is first noticed. Lace bug populations can build up rapidly if left unchecked.

A follow-up spray is required 10 to 14 days after the first application to kill the young nymphs that emerge from eggs after the first spray was applied.

There are three insecticides that have been registered with off label permits for the control of lace bug on olives: Dimethoate (Rogor, *rate -0.75g/L*), Fenthion (Lebaycid, *rate -0.75g/L*) and Natrasoap insecticidal soap spray. Rates may vary depending on product concentration- refer to label for details. Py-Bo and other natural pyrethrum products can also be used to control olive lace bug.

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Peacock spot (Spilocaea oleaginea)

Peacock spot is a widespread fungal disease of olive tress that affects the foliage and to a lesser extent the fruit. The disease requires moist warm conditions to develop and usually becomes prevalent in autumn and spring. Small sooty blotches develop on the leaves, which in time grow into greenish-black circular spots that measure 2 to 10mm in diameter.

A faint yellow halo is often evident in the tissue around the spots. As the disease develops the leaves become yellow and fall. Most of the infected leaves will fall prematurely by the start of summer. In severely infected trees complete defoliation can occur.

Management

Peacock spot is best managed by applying a preventive copper spray in late autumn. A second application in late winter is also recommended in areas subject to warm winters and spring rainfall.

If you missed these sprays an application in spring is recommended to prevent inoculum slowly building up and causing a major disease problem down the track.

Two fungicides are currently registered for the control of Peacock spot in olives: copper oxychloride (*rate-4g/L*) and copper hydroxide (Kocide, *rate-2g/L*)).

When both a fungicide and insecticide need to be applied at the same time, mixing the two together in the same spray tank can reduce spray operations. The compatibility of various chemicals can be checked on the product label or by contacting the manufacturer.

It is not recommend that chemical treatments are applied to the trees during flowering as some chemicals cause flower abscission and disrupt fertilisation and subsequent fruit set.

Please note it is a legal requirement that label instructions are followed, if olives is not listed on the label of the pesticide, it is either not registered for use on olives or an off label permit is required.

Pesticide registrations and off-label permits for olives can be viewed and downloaded from the Australian Pesticides & Veterinary Medicines Authority **website: www. apvma.gov.au**

(click on ***search for a permit*** *tab then enter olive under the crop section).*

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