TECH SHEET 1

AVOCADO CROP PROTECTION PROGRAMME

This fact sheet outlines the key pests of avocados, the registered chemicals available for their control, and a suggested crop control programme indicating when the chemicals should be applied against key pests. Your choice of chemical will be determined by the intended market and the applicable pre-harvest interval. The use of AvoGreen® pest monitoring data to determine the optimal timing of sprays is strongly recommended.

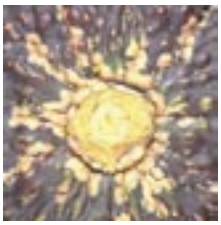
Leafrollers

This is actually a complex of species with brown-headed leafroller the most prevalent. The caterpillars chew fruit and leaves and can cause extensive crop damage. They prefer to feed in sheltered sites such as between touching fruit, so heavy crops will be particularly at risk. Brown-headed leafroller, both egg masses and live larvae, is also a major quarantine pest for all markets. The high risk period for fruit damage extends from fruit set to April, with critical times for control at leaf flush in spring and fruit touch in late summer. Registered products to control leafrollers include chlorpyrifos (e.g. Lorsban), Success, Attack and Bt.

Greenhouse Thrips (GHT)

GHT generally feed on sheltered surfaces such as touching surfaces of leaves or fruit but prefer fruit where they cause a russet blemish. Pest pressure is likely to increase with heavy crops. GHT populations increase from fruit touch (January) onwards and peak in autumn. Populations can increase extremely rapidly under warm moist conditions. Registered chemicals for control of GHT include Calypso, Malathion or diazinon. If pest pressure is high, 2 sprays at a 3-week interval may be needed for effective control. Biological control may be achieved using a commercially available parasitic wasp, Thripobius semiluteus.

Armored Scales



Latania scale is the most common of the two species of armoured scale found on avocados. These sap-sucking insects are mainly a cosmetic and market access problem, especially for Asian markets. The critical time for control is from February onwards as the crawlers of the second generation, the most susceptible stage in the lifecycle, move onto fruit. Good coverage of the leaf underside and bark is essential for effective control. Registered chemicals to control armoured scales include Attack, D-C-Tron Plus and diazinon. Chlorpyrifos will kill scales but cannot be used at the optimal timing.

Six-spotted Mite

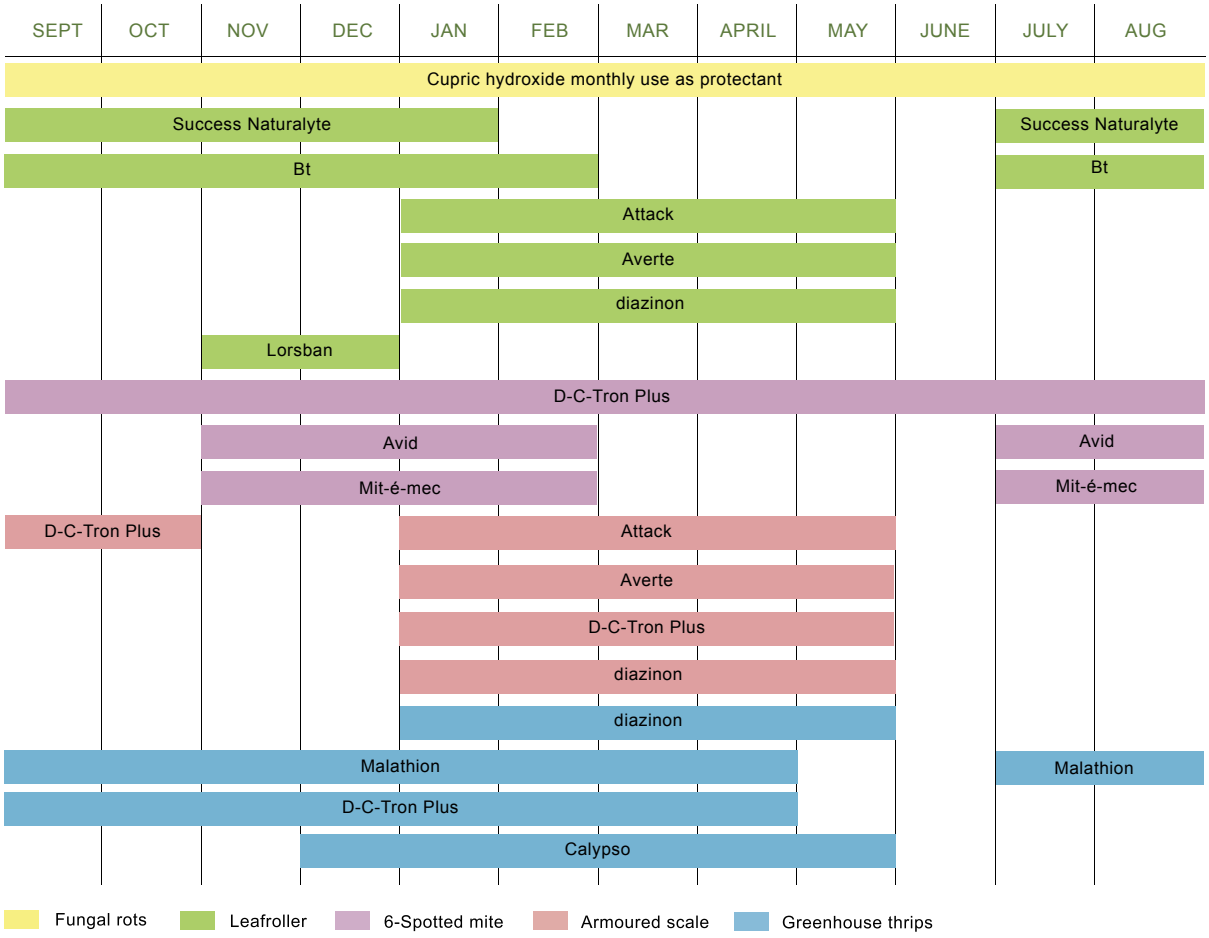
Six-spotted mite (6SM) can cause extensive premature leaf fall. Stressed trees are more prone to damage. Trees carrying a heavy crop may become stressed if they do not receive adequate nutrition and irrigation, especially at flowering. 6SM feeds on the under surface of the leaf causing a purple discoloration either side of the veins. Peak mite numbers occur from October to December. Thorough spray coverage of the underside of the leaves is essential with any spray targeting 6SM. Registered chemicals for control of 6SM include Avid and Mit-é-mec, both used with 0.5% mineral oil or a non-ionic surfactant, or D-C-Tron Plus. Exercise caution if applying mineral oil during flowering or while fruitlets are small.

Fungal Rots

Ripe rots of avocado in New Zealand are caused by a complex of five different fungi. Infection can occur at any time of the year. Spores are produced on dead wood and mummified fruit and are released during rain. Good control relies on the use of copper fungicides as a protectant. To be effective sprays must be applied prior to rain and the release of spores. Good coverage and frequent application to maintain a "barrier" on the fruit are essential for effective control.

PO Box 16004
Bethlehem
New Zealand
p. +64 7 571 6147
f. +64 7 571 6145
www.nzavocado.co.nz

CHEMICAL USE PATTERN FOR MAJOR PEST CONTROL ON AVOCADOS



Each product is listed separately by the pests for which label claims are registered, e.g. Attack is shown for both armoured scales (pink) and leafrollers (green).

To minimise the risk of developing pest resistance only spray in response to need (AvoGreen® monitoring data) and do not rely on only one type of chemical to control a particular pest. Calendar spraying often applies more sprays than are needed.

For all market access aim to meet the USA market requirements.

MARKET	Attack	Averte	Avid	Bt	Calypso	Copper	diazinon	D-C-Tron Plus	Lorsban	Malathion	Mit-é-mec	Success
USA	49	60	42	Nil	35	Nil	60	Nil	210	3	28	3
Australia	49	49	14	Nil	14	Nil	14	Nil	14	3	14	3
New Zealand	14	14	14	Nil	14	Nil	14	Nil	14	3	14	3
Japan	49	60	42	Nil	35	Nil	60	Nil	14	3	28	3
Korea	49	60	42	Nil	35	Nil	14	Nil	14	RT	28	RT

RT = residue test required.

Mention of a product is not an endorsement. Always read the product label before applying.

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