



# Organics Tasmania

presents examples of

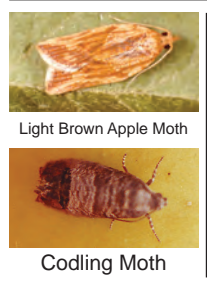
# Organic Management of *Tasmanian Apples*

## BLACK SPOT AND LEAFROLLER

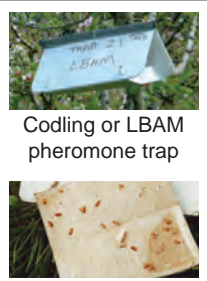
### FUNGUS MOTHS



TREE STAGES	Dormancy		Green Tip	Flowering	Calyx	Shoot and Fruit Development				Harvest		Leaf Fall	Dormancy	
CALENDAR MONTHS	July	August	September	October	November	December	January	February	March	April	May	June		
<b>Light Brown Apple Moth</b>	Grubs (larvae) overwinter in ground cover		Grubs pupate in ground cover		Eggs, grubs & pupae on ground plants & crop foliage			Grubs damage fruit then pupate in foliage			Grubs develop in ground cover			
<b>MONITORING</b>	Place pheromone traps in orchard and check weekly to calculate degree days. Place extra traps outside orchard when pheromone mating disruption ties are used. Monitor growing tips of non-bearing young plants.													
<b>CULTURAL CONTROLS</b>	Where large populations were present previous autumn, mow ground cover to reduce overwintering and pupating LBAM			Put out pheromone mating disruption ties		Maintain ground cover within and between rows. Plant diversity is essential to maintain a constant supply of pollen & nectar for beneficial insects, provides an alternative cover for LBAM moths and grubs, and is essential for soil health.								
<b>BIOLOGICAL CONTROLS</b>	Run poultry in the orchard year-round			Encourage parasitic & predatory insects with nectar-producing plants within blocks, headlands and windbreaks.			Inundate with <i>Trichogramma</i> wasps in warm seasons to coincide with eggs hatch			Run poultry in the orchard year-round				
<b>ORGANIC INPUTS</b>	Unlike sprays, beneficial insects actively seek out target pests.		Apply <i>Bacillus thuringiensis</i> (Bt) sprays or diatomaceous earth (DE) if action thresholds are reached in traps or with field monitoring											
<b>BIODYNAMIC INPUTS</b>	Apply Preparation 500 (soil building spray)			Apply Preparation 501 after apple fruit set		Spray LBAM 'peppers' from October to January			Make LBAM 'peppers' for next season		Apply 500, bd compost, soil sprays and supplements (eg calcium lime)			
<b>Codling Moth</b>	Larvae hibernate in cocoons within tree bark, as well as piles of grubbed trees, unused bins, wooden stakes etc			Pupation occurs		Adults emerge and first flight occurs. Eggs laid and new larvae search out fruit			Second flight may occur. Second generation grubs cause late fruit damage			Larvae seek shelter and spin cocoons for winter hibernation		
<b>MONITORING</b>	Place pheromone traps in orchard and check weekly to calculate degree days. Place extra traps outside orchard when pheromone mating disruption ties are used. Monitor host plants outside the orchard.													
<b>CULTURAL CONTROLS</b>	Remove neglected host trees.	When trap catches are high use Degree Day Monitoring to time sprays for grubs. Low populations of LBAM and Codling moth can be controlled by pheromone ties.		Put out pheromone mating disruption ties		Maintain ground cover within and between rows. Plant diversity is essential to maintain a constant supply of pollen & nectar for beneficial insects, provides an alternative cover for codling moths and grubs, and is essential for soil health.			Remove windfallen fruit from orchard and nearby neglected trees (apples, crab-apples)					
<b>BIOLOGICAL CONTROLS</b>	All sprays used will change the balance of beneficials in the orchard. <b>Never spray 'just in case'</b> Know your pest levels by <b>monitoring</b> and <b>keeping records</b> .	Encourage parasitic & predatory insects with nectar-producing plants within blocks, headlands and windbreaks			Inundate with <i>Trichogramma</i> wasps in warm seasons to coincide with eggs hatch									
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<b>BIODYNAMIC INPUTS</b>	Apply Preparation 500 (soil building spray)			Apply 501 after fruit set		Spray LBAM 'peppers' from October to January			Make Codling Moth 'peppers'		Apply 500, bd compost, soil sprays and supplements (eg calcium lime)			
<b>Black Spot</b>	Infected leaves on ground and low level infection of twigs in tree.		Infection of buds and new leaves.		Infection of flowers and fruitlets.		Lesions on older leaves and fruits cause secondary infection cycles under wet conditions					Infected leaves on ground and low level infection of twigs in tree		
<b>MONITORING</b>			Begin temperature and rainfall monitoring		Monitor foliage for black spot		Monitor fruit and foliage for black spot		Monitor after high infection periods	At harvest assess % fruit infection	Assess for inoculum on leaves before leaf fall			
<b>CULTURAL CONTROLS</b>	Remove inoculum from the orchard	GOOD SPOT CONTROL <b>EARLY</b> is essential to reduce disease pressure for the rest of the season			Maintain good airflow through canopy to reduce humidity with winter and summer pruning			Thinners remove black-spot fruit from orchard		Apply compost teas at leaf fall for leaf composting		Remove inoculum in the orchard by sweeping, mowing and mulching, or decomposing leaves		
<b>BIOLOGICAL CONTROLS</b>	Apply compost teas or fungi antagonistic to black spot when infections conditions occur											Compost teas can provide excellent, natural nutrition to the orchard canopy, understorey and soil.		
<b>ORGANIC INPUTS</b>	Applying biodynamic preparations helps to improve the soil balance, stimulate soil microorganisms and strengthen plant cell structure, making the plant better able to cope with pest and disease attacks.		Apply protective coat of lime sulphur just prior to bud burst		Apply Limil, sulphur, compost teas or fungi antagonistic to black spot when infections conditions occur. Use lime sulphur for thinning up to fruit set. Lime sulphur after fruit set causes russetting.							Apply post harvest fish, kelp or compost tea to break down leaves		
<b>BIODYNAMIC INPUTS</b>	Apply 501 at bud burst		Apply a Casuarina spray (508) for spring fungal attacks			Apply preparation 500 (soil building spray)			Apply preparation 501 (silica spray)			Mow and compost tree rows		Apply tree paste after each block is pruned



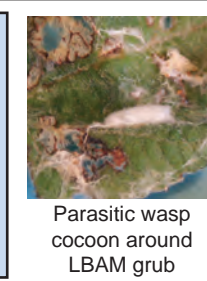
Place LBAM pheromone ties at two-thirds of the canopy height from the ground. Place Codling ties at the top or above the canopy where possible.



When pheromone traps indicate moth flights, calculate degree days to spray LBAM at 130 and Codling at 140. Spray Bt late in the afternoon or at evening to reduce solar-deactivation.



Codling and LBAM larvae are attacked by earwigs, lacewing larvae, spiders, and parasitic flies, wasps, and bugs that live in healthy tree canopies and orchard understorey.



Ground covers provide alternative habitats for light brown apple moths, and for many beneficial insects.



**Use compost teas with caution.** Teas brewed from bad compost or under the wrong conditions can feed the plant diseases they are designed to deter.

When considering conversion to organic production, it is **essential** to build up and balance the soil health **before** the organic program starts.

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**Contributors:** K Green, Lenswood Orchard; A Smith, Raw Organics; R Williams, Kelly Farm; C Landon-Lane, Tamar Valley Organics; G Roberts, Bagdad. **DISCLAIMER:** The information contained in this poster is intended for Tasmanian conditions. This poster is based on the best information available at the time of production. It should only be used as a general guide. It is the ultimate responsibility of individual growers to confirm the accuracy and currency of information provided by checking relevant websites/information sources. Organics Tasmania cannot control individual usage of the information in this poster or the way information is implemented. Accordingly, Organics Tasmania will not accept liability for loss or damage of any kind caused by reliance on this information.