



WASP MANAGEMENT IN TASMANIAN VINEYARDS

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WASP BIOLOGY AND BEHAVIOUR

- Wasps are social insects with a strict class structure.
- They feed on Carbohydrate (eg sugar) and protein (eg meat) and take food back to the nest for the developing larvae.
- Once a wasp has fed it

will fly in a direct line to its nest.

- Wasps will faithfully return to a known source of food.
 - Wasps range commonly up to 500m from their nest but may travel several kilometres.
- Wasps will repeatedly sting

and alert other nearby wasps, who may also attack.

IDENTIFICATION

- Robust, bright yellow and black striped wasp.
- Slightly more slender and often longer than honey bees. Not hairy.

- Strong fliers.

- Will feed in groups once food source is identified.

- Nest are conical and made from fibrous material (wood pulp). They are often well hidden and may be underground. Mud nests are not European Wasps!

Preparing and using baits¹

- There are two permits for insecticides for use on European Wasps – Permethrin and Fipronil.

- Both can be used with meat bait with the purpose of wasps contaminating their nests after feeding on the bait. This debilitates or even destroys the nest.

- Baits should only be used when the nest cannot be located or accessed.

- Wine Tasmania and [DPIPWE](#) are working on a long term solution to ensure the availability of Fipronil baits to landholders.

Permethrin can be used to create a bait as follows:

European wasps can be controlled effectively with a feeder containing an insecticide which is carried

back to the nest where it is spread by the insects cleaning themselves.

This feeder consists of the bottom half of a well cleaned, empty 1 or 2 Litre plastic dishwashing container or similar non-food container with a hole about 20 mm in diameter 20 mm up from the bottom on each of the 4 sides (see diagram). A piece of fresh liver (lamb's fry) is held near the top with a wire and ant and roach dust containing Permethrin is spread about 3 mm deep over the bottom of the container.

Wasps are attracted to the liver, chew off a small piece and then most drop to the bottom to adjust their load. They fall into the garden dust and some survive to return back to the nest.

The feeders are hung in sunny areas, out of the rain, away from paths where people walk and out of the reach of children and pets.

The bait feeders are simple to make and suitable for use around houses. They should be set up when wasp numbers begin to increase. The liver bait should be replaced every 3 days to make sure that it remains attractive to wasps.

This type of feeder has the advantage that, for nearby nests, the insecticide will be carried back into the nest and many more adult and young wasps killed.

The dust should also be checked to make sure enough is present. Any setting up or checking should be done after dusk when wasps are not feeding .

DISPOSAL

The Permethrin dust should not be disposed of near water, it should securely wrapped in paper, placed in a plastic bag and put in the garbage. Do not use in confined spaces.

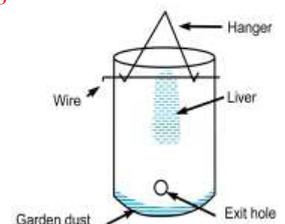
SAFETY DIRECTIONS

Avoid contact with eyes and skin. Do not inhale dust. When using the Permethrin product wear rubber gloves. Wash hands after use.

FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre Phone

131126



Wasp feeder

A MAXIMUM OF 12,000 - 16,000 QUEENS CAN BE REARED IN A SINGLE NEST. MOST QUEENS LEAVE THEIR NEST, MATE AND THEN HIBERNATE UNTIL SPRING

WASP CALENDAR

Spring (October) -

Queens leave their hibernation quarters and search for suitable nest sites and establish embryonic nests.

Early Summer (December) -

Nests with several hundred cells and hundreds of worker wasps. Foraging and building activities increasing.

Summer (January - February) -

Nests increasing in size with up to 10,000 rearing cells for worker production. Up to 1,000 adult worker wasps per nest.

Curve representing population growth



PEST IMPACT ON BIODIVERSITY/IPM

- European Wasps are active generalist predators.
- They will attack and consume many other types of invertebrates.
- Their activity can create a localized biodiversity "desert".

This can create an imbalance in vineyard invertebrate population dynamics, leading to outbreaks of pests (e.g. vine scale).

PEST IMPACT ON FRUITYIELD

- Wasps communicate locations of food to the nest. Thus a single forager can excite a swarm to inundate a food source very rapidly.
- The food source could be your vineyard!
- Whilst they may not attack every berry on a bunch, they can reduce the quality of the bunch such that it is unusable for wine
- This impact can range from minimal to absolute, where the vineyard may not be worth harvesting.



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PEST IMPACT ON OHS&W

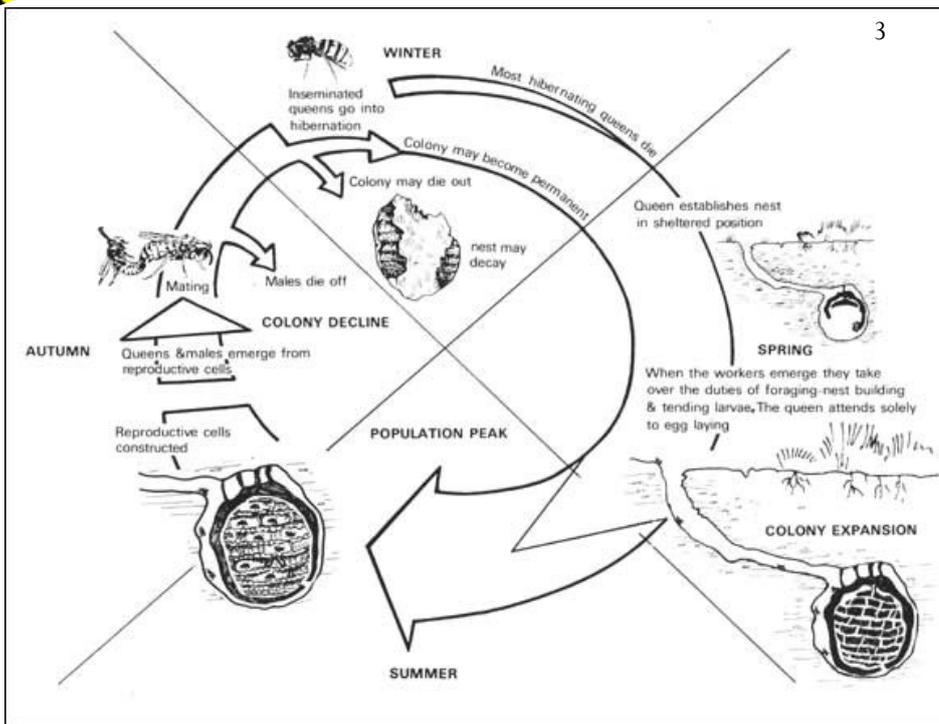
- European wasps are aggressive and will sting if threatened
- Wasps can repeatedly sting and alert other nearby wasps, who may also attack
- Vineyard and winery workers, and cellar door visitors may be stung by foraging wasps.
- Wasps foraging on food and drink left unprotected may be inadvertently eaten.
- A sting in the mouth or throat can lead to swelling that can restrict breathing.
- Swarming wasps (e.g. on marc, fruit etc) can create workplace hazards.

Early Autumn (Late March) - Queen cell building begins. Up to 2,000 adult workers present.

Autumn (mid to late April) - New queen adults start being produced. Number of worker wasps can reach 3,000 per nest.

Late Autumn (May) - Queen production in full swing. The number of adult wasps up to 4,000 per nest. Colony cycle reaches its climax with up to 30,000 worker-rearing cells and 15,000 queen-rearing cells per nest.

Winter (June - August) - After producing upwards of 7,000 queens, some nests continue into winter mode and low-level queen production is maintained. A maximum of 12 - 16,000 queens can be reared in a single nest. Most queens leave their nest, mate and then hibernate until spring. Very few nests successfully survive over-winter.



WASPS
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LOCATIONS OF
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VERY RAPIDLY

OHS&W – trapping, baiting and nest destruction

- ALWAYS follow label/permit directions when handling agrochemicals.
- ALWAYS store agrochemicals correctly in a designated chemical storage shed.
- ALWAYS wear proper Personal Protective Equipment (PPE) (e.g. gloves, goggles, respirator) as di-

rected by the agrochemical label and/or MSDS.

- NEVER use a chemical contrary to the label/permit
- Nest destruction should be undertaken when activity is low e.g. at night.
- Always cover your torch with red cellophane as insects cannot see red light.

- If possible, position the torch some distance from yourself, yet still illuminating the area to be treated.
- Always wear loose clothing, fully covering your body, a floppy hat or veil and gloves.
- Tell someone what you are doing and where you will be.



Checklist for monitoring and management of wasps in Tasmanian vineyards

- SEP – preparation of equipment for monitoring and nest destruction: personal
- OCT/NOV – observed wasp behaviour. Any nests found are destroyed
- DEC – wasp activity monitored. Incidence above single wasps can be monitored with a meat/offal bait. Wasps followed from bait to nest/boundary
 - Nest discovered and destroyed
 - Appropriate precautions taken
 - Nest monitored for indication of activity/confirmation of destruction
 - Nest not discovered: bait laid and monitored.
 - Wasp numbers reach 10 in 10 minutes
 - Untreated bait replaced with treated bait.
 - Wasp activity monitored
 - Treated bait replaced if required
 - Treated bait removed once wasp activity stopped
 - Wasp numbers less than 10 in 10 minutes
 - Continue monitoring
- DEC/APR – Meat baits (untreated) used when incidence of wasps observed.
 - Wasp numbers reach 10 in 10 minutes
 - Untreated bait replaced with treated bait.
 - Wasp activity monitored
 - Treated bait replaced if required
 - Treated bait removed once wasp activity stopped
 - Wasp numbers less than 10 in 10 minutes
 - Continue monitoring

WHICH WASP IS WHICH?³



**AUSTRALIAN PAPER
WASP**



MUD WASP



EUROPEAN WASP

Acknowledgements:

1. APVMA—Permethrin permit for European Wasp management—<http://permits.apvma.gov.au/PER12763.PDF>
2. Tiger Ranch Vineyard—<http://www.tigerranch.com.au/photologue/photo/wasps-invasion-2010-tiger-ranch/>
3. SA Local Governments—<http://www.lga.sa.gov.au/site/page.cfm?u=283>