

# Vineyard snail control: Exploring the options and the timing

Snails are a vineyard pest that can cause damage to buds and foliage, particularly during spring. This column provides answers to questions commonly raised with the AWRI helpdesk about controlling snails in vineyards.

## Q: SNAILS WERE IN MY VINES LAST SEASON AND THE BAIT I USED DIDN'T GET THEM OUT. WHEN SHOULD I BE CONTROLLING THEM?

**A:** When using baits, it is critical to understand the snail lifecycle and apply the baits at a time when snails are most likely to be attracted to them.

Snails go through a 'dormancy' period over summer to survive the hot and dry conditions.

After rain, typically in autumn, they become active and start feeding. This is the stage in the snail lifecycle where growers can have the greatest impact using the baits registered for control.

Because snails are actively looking for food at this time and their options are scarce, the baits are more easily found. Conversely, when there is a lot of other food available, such as in winter and spring, the baits are harder to find or can be ignored.

Baiting in autumn rather than in winter or spring also has the important benefit of controlling snails before they have a chance to mate and lay eggs, which usually occurs in winter.

The time of year when snails are observed in the vines and recognised as a problem is the least effective time to use baits.

## Q: WHICH VINEYARD MANAGEMENT PRACTICES MIGHT FAVOUR SNAILS?

**A:** Land managers are moving away from the practice of cultivation for weed control because it is known to reduce organic matter and degrade soil structure. This has removed a practice that may have decreased the viability of snail eggs and reduced the food supply and shelter for juveniles.

Some cultural practices that improve soil health, water holding capacity and biodiversity such as maintaining a cover crop, undervine mulching and avoiding tillage are also providing conditions that are favourable to snails.

A cover crop and mulch can increase the organic content of a soil and preserve moisture.

This creates an environment that is attractive to snails, provides a place for them to hide and offers a source of food from increased organic matter.

## Q: WHAT ARE THE CONTROL OPTIONS FOR SNAILS?

**A:** Control options for snails fall into three main categories, cultural practices, biological controls and chemical controls.

### CULTURAL PRACTICES

Snails live in areas where heavy ground cover and vegetation provide moisture and shelter.

Practices that remove these refuges, such as keeping fence lines free of weeds, maintaining a clear undervine area and

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keeping midrow crops short, can reduce snail numbers over time. Snails present in grapevine foliage can be physically dislodged but they need to be collected and removed or they will return.

One producer reported that it was economically viable to use a mechanical harvester to remove snails when shoots were up to 10 cm, so long as the snails were still active and not fixed to the vine.

It was found that as the day warmed up, the snails were harder to remove.

## BIOLOGICAL CONTROLS

Introducing birds such as ducks and chickens into vineyards can provide effective control of snails but the feasibility of this option needs to be considered.

These birds need to be protected from foxes and this requires that they are housed each evening in a fox-proof pen.

To have an impact on snails the birds don't need to be used year-round, but if present in the growing season they should be removed during spray applications.

It's also important to be aware that some insecticides are toxic to birds and the grazing of livestock should be restricted after the application of some agrochemicals.

Predatory beetles and lizards are also known to feed on snails but do not provide sufficient control.

## CHEMICAL CONTROLS

Three active constituents (iron EDTA complex, metaldehyde and methiocarb) are registered for control of snails in viticulture as baits.

A range of commercially available products were assessed by SARDI researchers for the Grains Research and Development Corporation and it is recommended that this reference is consulted.

Key findings from that study were:

Rainfall impacts the physical integrity of bran-based baits. Cheaper products do not last and need to be reapplied more frequently.

The active constituents iron EDTA complex and metaldehyde are reduced by rainfall and snails are more likely to consume a sub-lethal dose. Iron EDTA products are not recommended when more than 10 mm rain is expected.

High temperatures degrade metaldehyde baits, which reduces their effectiveness during summer.

Mould on baits does not influence bait consumption or efficacy.

Copper is highly repellent to snails and there are products containing a copper complex that are registered as a trunk application to deter snails from entering the canopy.

These products should not be sprayed on foliage because of the potential for burn.

Because snails don't like copper, it is important not to get copper residues on any baits.

Copper-containing sprays for downy mildew control such as copper sulfate or copper oxychloride are not registered for snail control but are said to have some effect in protecting plants by making them unappealing.

## Q. WHERE CAN I FIND OUT MORE?

A. More information about snail and slug control can be found on the Department of Agriculture and Food WA and Grains Research and Development Corporation websites.

*For specific queries or technical support, please contact the AWRI helpdesk on [helpdesk@awri.com.au](mailto:helpdesk@awri.com.au) or 08 8313 6600. *

## PPE reduces the risk

Everybody deserves a safe working environment. To make the workplace safe, we all need to share the responsibility. This includes clearly identifying potential workplace hazards, providing instructions on safe use and training staff in proper use. One hazard that would exist in every vineyard are pesticides.

Pesticides are chemicals intended for preventing or controlling an unwanted pest, disease or weed. Pesticides are inherently hazardous, so it is important to ensure correct handling at all times. The pesticide's label exists to provide instructions on how to safely handle and use the product, which includes using personal protective equipment (PPE); this month's topic. Appropriate PPE makes the workplace safer and reduces the risk.

No matter which pesticide is used, it's essential that you read and understand the label instructions and use only as directed. Following the label not only maximises the product's effectiveness, it reduces the hazard to your health when handling the chemical.

On every label are 'signal words' that indicate how poisonous a pesticide is. These are:

- Dangerous Poisons are chemicals of high toxicity.
- Poisons are chemicals with moderate to high toxicity.
- Products with the signal heading Caution are chemicals with low to moderate toxicity.
- Products without a signal heading are unscheduled chemicals and are relatively safe to the user.

The greatest hazard when handling any pesticide is when transferring chemicals from their original packaging (i.e. preparing spray solution). In this form, concentrated product is being handled, which is more toxic than diluted spray mixtures. The risk of exposure (from spills or splashes) to a higher dose of a hazardous chemical is usually greatest when the chemical is in its concentrated form.

The label also contains information for handling the pesticide safely; these are the 'Safety Directions'. These advise how the chemical can affect human health, and what users should do to protect themselves from exposure to the chemical. It lists the PPE that should be worn when handling the chemical. It is important that these instructions are read before opening the container, mixing or using the product. Remember, every product is different, so be sure to follow the specific instructions to the specific product.

Chemicals can enter the body through four ways—skin, eyes, nose and mouth. Different PPE protect different parts of the body, each providing a barrier to chemicals entering the body. Types of PPE include goggles, face shield, washable hat, respirators, overalls, apron, chemical-resistant gloves and rubber boots.

After using a chemical or finishing any spraying activities, thoroughly clean all PPE used during mixing and application activities. Good personal hygiene should be followed, which includes washing your hands, arms and face thoroughly with soap and water before eating, drinking or smoking, spray operators should wash their hands, arms and face thoroughly with soap and water. Not washing chemicals off the skin before any of these activities may allow the chemical to enter via the mouth. Shower as soon as possible after spraying and work clothes should be washed separately or disposed of appropriately.

Make sure you and your spray operators follow the label before opening the container, mixing or using the product, as appropriate PPE makes the workplace safer and reduces the risk.



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