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Mealybug control options

Another season is upon us and it's time to be thinking about early season mealybug control on vineyards. Mealybug is certainly proving to be the most dangerous vineyard pest at the moment, not only because high infestations will affect grape flavour qualities, but also because it is the prime vector for spreading leafroll type3 virus.

Hort Research has conducted trials looking at the efficacy and timing of various mealybug chemical control measures. The best approach down the 'harder' line seems to be Tokuthion and oil at budburst, and then two Applaud / Mortar applications two to three weeks apart, close to flowering. The aim of the late Applaud / Mortar is to break the life cycle of the insect, and, because the temperatures are generally warmer just before flowering, the mealybug living underground should be on the move up into the vine canopy.

The best sustainable approach would be an Applaud / Mortar and oil at budburst application, and then one Applaud / Mortar close to the start of flowering.

Coverage at the early application is critical. The oil is designed to smother the mealybug, as it breathes through spiracles in the side of its body. A higher water rate is more likely to get the oil into cracks in the trunk, head and cordon of the vine.

Another method which was trialled (and worked well) early autumn, was painting an insect arrest gel around the base of trunks. This trapped the mealybug as it moved down to the roots for overwintering and also trapped the ones moving up into the canopy from the ground.

Update on biological control

In our July 2009 Grapevine Intelligence, we provided a comprehensive report on the work done by David Reid, a PhD student with the Bio-Protection Research Centre at Lincoln University. (Copies of past issues of all our publications are available at www.skeltons.co.nz)

Using funding from Skeltons Viticulture Development Grant, David has been investigating biological control of mealybugs by modifying insect habitats. At a recent Skeltons Viticulture Technical seminar, David presented the key findings from his research to date as a guide to growers in tackling this very significant pest problem:

Here are some of the main points from the seminar:

- Monitor, map and record mealybug (MB) before or immediately after harvest when MB populations are high, so you know where movement and hot spots are located. Mark leaf roll virus-affected vines showing symptoms for testing or removal later.
- Control upper vine ant species with bait stations (0.5% Boric acid / sugar solution) as ants protect MB and soft scale from predators above the ground. Research showed that bait stations placed in known MB hot spots resulted in low numbers found at the end of the season. (David is repeating bait station trials again this season.)
- Control inter-row first tier broadleaf host weeds that MB prefer first e.g. Hawks beard, Doves foot, Clovers, Willow herb and scarlet pimpernel.
- Grow under-row alyssum or beneficial nectar plants at 20m intervals, to supply nectar to beneficial wasps that are natural predators of MB.
- Reduce spreading MB with own machinery or contractors' trimmers, leaf-pluckers and most importantly, grape harvesters.
- Use oil sprays to control scale insects. Scale honeydew is a primary canopy ant carbohydrate source. (Skeltons and HortResearch recommend the use of an insecticide like Applaud with the oil to control MB.)

David also outlined the work being continued over the coming season:

- Mulch reduces the population of ants in the canopy.
- Grow and introduce both natural occurring and beneficial host plant species that wasps prefer e.g. buckwheat, oregano. A nectar source lengthens the predator's life span and builds predator numbers.

Non-producing spray regime

An increase in the amount of growers without supply contracts this year has prompted Skeltons to develop a new non-producing spray programme designed to keep vines healthy with minimal chemical inputs required. Please contact your Skeltons technical advisor if you would like to discuss your options further.



Grapevine Intelligence

October 2009

Sustainability matters

Grape growers have been moving towards a more sustainable way of business at a fast pace over the past decade, developing more environmentally friendly ways of growing. Skeltons sees that we have an important role in creating a sustainable environment through our support and services.

This is why Skeltons offers an Agrecovery service to growers so you can recycle your agrichemical containers easily and at no cost at our Hastings store, creating a sustainable long term solution to benefit the environment. Simply triple rinse your containers and drop these off when you come in to purchase your next supplies.

Congratulations Caine

Skeltons congratulates Caine Thompson of Mission Estate Winery, Hawke's Bay, who won the Markhams Young Viticulturist of the Year Award. Caine will now represent the viticulture industry at the national NZ Hort ITO Young Horticulturist of the Year 2009 in November where there will be \$40,000 worth of prizes to be won.



Pictured from left to right above: Previous winner and current organiser Emma Taylor, Caine Thompson, James Cropper and Blake Herbison, Skeltons technical advisors.

Romeo Bragato conference

Skeltons and Farmlands were Gold sponsors at the 15th Annual Romeo Bragato Conference which took place in August in Napier. This major technical conference for the grape and wine industry was a perfect occasion for Skeltons to demonstrate our expertise and product range, as well as profile our relationship with Farmlands.

Technical seminar a success

Skeltons viticulture technical seminar was held in August in Hastings, with growers travelling from Wairarapa, Gisborne, and throughout Hawke's Bay to hear presentations on pest management strategies, non-producing programmes for grapes, fungicide and insecticide programmes, and chemical thinning.

David Reid and Chris Henry, Skeltons Viticulture Development Grant recipients, also updated the seminar attendees of progress on their respective research projects.



Using sheep for leaf plucking

There are a number of advantages that sheep provide when used for leaf plucking:

- Lowered Powdery Mildew / Botrytis disease pressure
- Improved spray coverage
- Cost savings on labour, weed spraying and mowing
- Removes leaf dwelling blister mite / mealybug and potential leafroll virus spread.

There are also a few disadvantages:

- Beware of copper application and no rain to wash away spray. Copper residues on foliage can be toxic to sheep.
- Close monitoring of animals is necessary, as this activity can cause damage.

ACTIONS	POSITIVES	NEGATIVES
Fencing paramount – needs good boundary fence.	Electric fencing quick and easy to prepare before next move.	Electric fencing can't stop dog-panicked sheep.
Break area into two to three hectare blocks that hold 200 to 300 sheep.	Will leaf pluck in two to three days' time. Pre-mow before arrival.	Separate varieties as preferred: Merlot/Malbec -- Cab Sav, Chard, Riesling etc.
Romney-Romney X breeds.	Quiet and used to being moved.	Perendale highly strung.
Use older grown ewes as their height is 0.9 – 1.2m.	Meat not destined for export.	Vine training system, height of fruiting wires (0.9 – 1.1m).
Use sheep that are freshly shorn, drenched and lice free.	No rubbing or unnecessary damage.	Constant rubbing.
Take good care of your workers.	Plenty of fresh water at all times. Spread out each end of block.	Sheep camp around water and over leaf plucking, in one area.
Walk daily and spread out sheep before night – avoids all sleeping.	Sheep eat more when it's cooler (morning and evening).	Be aware and prepared to react earlier rather than later.
Timing important - late Nov/Dec at green pea size berries with bunches hanging down with weight.	More gentle leaf removal and less fruit damage, muzzle into row centres.	First hint of colour / veraison sheep will eat grapes.