



Brown, angular leaf spots, sometimes surrounded by a yellowish halo, are the typical visible symptoms of Psa infection

FRUITFED WATCHES PSA SITUATION

The discovery of the bacterial disease, *Pseudomonas syringae* pv *actinidiae* (Psa), in several orchards around the country has created an ever-changing situation for growers that the team at Fruitfed Supplies is also watching closely. New Zealand technical manager Richard Bawden says Fruitfed personnel have been briefed regarding appropriate biosecurity measures and are keeping up to date with all available information. "As advised by Zespri, normal on-orchard activities must continue while taking action with appropriate hygiene measures," says Richard. "Our team is very aware of the seriousness of the situation and continue to do their best to help growers where needed with support and product."



Viticulturist wins Young Horticulturist title

Stuart Dudley, a viticulturist at Delegat's Wines Estate in Blenheim, is the 2010 Young Horticulturist of the Year.

This year's grand final of the nationwide Young Horticulturist title took place at the Auckland Botanic Gardens on 3 and 4 November where eight sector finalists from around the country competed for the 2010 title. Stuart Dudley won the two-day final with Nelson's Dave Harris, representing the Nursery and Garden Industry Association, this year's runner-up. Dave works for Nelson's Thirkettle Nurseries as their production manager. Third place went to Gareth Holder of Taradale, who represented the Vegetable sector of Horticulture NZ and works as a technical field consultant for Abron Ltd in Hawke's Bay. Stuart says the competition took him out of his comfort zone.

"Being from the viticulture area I found some activities, like planting a vegetable garden, quite challenging. But it is a case of preparing yourself mentally. I always find with things like this the judges are looking to see what you do know, rather than what you don't. Overall, it was an amazing couple of days. Every one of the finalists deserved to win."

Stuart says he intends to use his travel prize to visit vineyards in Chile and Argentina.

Fruitfed Supplies is one of the competition's major sponsors and general manager Stephen Guerin believes the competition continues to foster awareness of the horticultural industry as a viable and challenging sector in which New Zealand's talented young people can succeed.

"It's exciting and inspiring to see the determination and adaptability the finalists applied during the two days of competition, particularly as some of them faced practical horticultural skills tests outside their usual sphere," says Stephen. "We extend our warm congratulations to Stuart, Dave and Gareth on their success as this year's top three place-getters and to all the finalists for getting stuck in and doing their best."

"We're delighted to hear Stuart won the 2010 Young Horticulturist title," notes Richard Rutherford, Fruitfed's Marlborough area sales manager. "His talent and success reflects well on Delegat's."

Fruitfed Tasman area sales manager Mark Milne adds: "On behalf of the Richmond Fruitfed Supplies team, we would like to congratulate Dave Harris on his second place achievement. It is great reward for the hard work he puts in."

The Young Horticulturist competition is managed by the Royal NZ Institute of Horticulture Education Trust and, this year, had a prize pool of more than \$43,000.

Event organiser Elenka Nikoloff says: "This year we saw a very close competition; all the finalists were confident, practical all-rounders. Every year our aim is to make the competition challenging, and we are delighted the Minister of Agriculture, the Hon. David Carter, has given it his backing, acknowledging it as an important initiative in the horticulture industry."

The 2010 finalists also included: Leigh Harrison, from Hamilton, recreation/amenity sector; Marc Higgie, of Whanganui, arboriculture sector; Jessica Mills, of Hawera, floriculture sector; Jonathan Newby, of Havelock North, fruit sector of Horticulture NZ; and Alex Stewart, of St Heliers, Auckland, landscape sector. ♦♦

Stuart Dudley, proud winner of the 2010 Young Horticulturist title



Arboriculture representative Marc Higgie works on the irrigation challenge

Update on TPP

As the weather warms up and potato and field tomato crops are now emerging, Fruitfed Supplies Technical advisor Tim Herman reminds growers to consider management options for the tomato potato psyllid.



Our knowledge of this pest and its management continue to build as industry research efforts provide us with more information, but we accept there is still a long way to go until we have a full understanding of the best control measures.

TPP goes through three distinct lifecycle stages – egg, nymph and adult – with the nymphs going through five instar stages. The nymphal stage is the key lifecycle stage of concern to growers due to nymphs' piercing and sucking feeding habit which impact plants' growth. TPP adults are also an important concern as this is the stage during which Liberibacter disease can be transmitted to the host crop.

Information coming out of the US suggests that psyllid adults live for up to 20 days in tomato or potato fields. Each female can lay up to 150 eggs, but up to 20% of these are unviable and don't hatch. Considerable mortality of early instar nymphs is also possible, due to the activity of predators and other factors, but mortality levels tend to decline as nymphs move through the instar stages.

Recent data from current New Zealand post graduate and other research – unfortunately not published yet – suggests that the TPP lifecycle in New Zealand is typically completed in about four weeks during the key summer months.

With a reasonably limited number of chemical groups available to effectively control TPP, growers must consider resistance management practices carefully if we are to be assured of successful long term control of this pest. The number of applications and rotation of chemical groups need to be planned to ensure applications are not made to multiple TPP generations. We have developed best practice spray guidelines based on the information currently available, and encourage you to discuss these guidelines with your Fruitfed representative to ensure you get the best control and future efficacy from your crop protection products.

Another aspect of developing long term sustainable control is making sure you understand what is happening in the field. We cannot emphasise enough the benefits of monitoring your crops to ensure product applications are timed correctly and at a rate applicable to the levels of pest in the field.

We are currently setting up field trials in Hawke's Bay where we will again conduct spray trials for TPP, evaluating some potential new compounds. If successful, these take time – usually years – to get to market, so in the meantime we must continue to protect the chemistry we have.

There is no silver bullet for the control of TPP, and this is one case where you simply can't have too much information about what is happening in your fields to have the best chance of achieving good levels of control. ⇨

Movento an important TPP control option

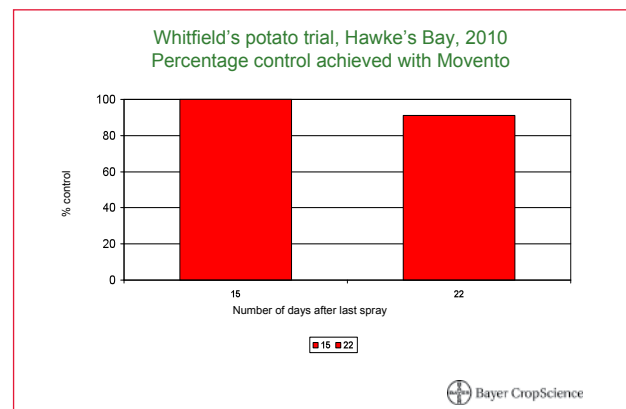
*Late in 2009 a new label claim was achieved for Movento for the control of the tomato potato psyllid (*Bactericera cockerelli*) in potatoes.*

Chris Miln, Bayer CropScience vegetable marketing manager, says Movento was then used extensively across all growing regions in New Zealand.

"Feedback from its use last season has been very positive. Movento was seen as being a key insecticide in the spray programme," says Chris.

Trials conducted last season by Bayer CropScience in Hawke's Bay demonstrated the effectiveness of Movento on psyllid nymphs (see graph). Movento achieved 100% control of nymphs at 15 days and 90% control at 22 days after the last application.

Chris suggests the best use of Movento is achieved with two applications to a developing pest population at seven day intervals



early in the season. "Used in this manner Movento provides excellent residual control of psyllids in potatoes," he says. "Please note that a maximum of two Movento applications are allowed on a potato crop, and the product should form part of a season-long TPP programme."

For further information on the use of Movento in potatoes, contact your local Fruitfed Supplies representative. ⇨

Add small print "Movento® is a registered trademark of Bayer. Registered pursuant to the ACVM Act, No. P7858.



Soil care just one aspect of Woodhaven Gardens' success

The extensive, intensive fresh vegetable cropping operation at Woodhaven Gardens outside Levin relies on looking after their traditionally fertile, productive soils.

With at least 17 varieties of vegetables in production virtually year-round, the Woodhaven Gardens' operation is very intensive. Soil structure and health are vital aspects for the success of the overall operation, says production manager Karen Silva.

"We use a number of management techniques to look after the soil as much as we can," says Karen.

"First, our trials have shown that compaction is understandably a huge issue due to the intensity of our operation. We use GPS plotting to create 'tramways' in each block so when we plant, we plant in the same place each time. Spraying and other crop management operations also require the tractors to follow the same path through each block. It's most important we drive in the same place each time to leave the crop growing in the un-compacted soil.

"Also we rotate crops between blocks and try to not to do too much groundwork, meaning we drive across the growing areas only when we have to."

Karen says soil testing is vital to ensure that only the necessary nutrients are added. "We also add humic acid to stimulate the plants and micro-organism activity in the soil, and plant beneficial grasses and mustards which are ploughed in as green manure."

The Woodhaven Gardens' produce line-up include lettuce, cos, leeks, silverbeet, red onions, spring onions, spinach, radish, beetroot, red, green and Savoy cabbage, parsley, broccolini, fennel, pumpkin, celery and, in summer, watermelons, the only non-vegetable crop. ❖



Preparing to plant leeks with a self-steer GPS unit on the tractor



Karen Silva, production manager at Woodhaven Gardens



The resultant very straight rows of leeks

Vege Tech Bytes

A monthly technical update from Tim Herman, the Fruitfed Supplies regional technical advisor specialising in vegetable crops.

It is often a challenge to identify the source of damage sighted in crops. Differentiating between weather, disease and insect damage relies on a good understanding of:

- what the prevailing weather conditions are in the local area and the damage or diseases this weather may be conducive to, and;
- the type of damage inflicted by different insect species.

With experience, the key signs and symptoms that distinguish between the different groups can be easily identified.

One that I came across recently was damaged growing tips in

curcubit seedlings. It appeared to be insect damage, but the damage wasn't obvious, suggesting it had to be a small insect. Even though I'd seen an Argentine stem weevil walking across another part of the crop, it wasn't until I saw some classic weevil damage on a stem, that the culprit was identified and a control strategy actioned.

By understanding how an insect feeds and what sort of damage it inflicts, you have a better chance of taking the best course of action to stop the damage. ❖





Reduced withholding period for Delan

An important change to the apple spray programme has recently been announced with BASF fungicide Delan® receiving significantly improved use provisions for the 2010–11 growing season.

Pipfruit New Zealand has recently revised the pre-harvest interval for Delan – previously there was a 30 November cut-off date for use. Now, depending on the export market destination, the PHI, maybe as short as 45 days. This allows most growers to continue utilising Delan for black spot protection for more a month longer in most cases.



BASF technical manager Grant Hagerty explains how this change benefits New Zealand apple growers: "Delan is a protectant fungicide that inhibits spore germination, thereby preventing black spot infection and widespread loss of fruit quality. It has excellent adhesion properties ensuring maximum efficacy. It also fits well into IPM programmes involving *T. pyri*."

"To get the best from Delan it should be applied at 7 to 10 day intervals throughout the primary black spot infection period, green tip to petal-fall, and then at 10 to 14 day intervals from first cover onwards."

Grant adds that apple growers understand that not many products can match the proven performance of Delan. "First registered in New Zealand in the 1960s, and with the current improved WG formulation widely used since 1995, Delan has grown to become a cornerstone product in the apple spray programme. With recent supply shortages reducing the availability of another key black spot fungicide Polyram®, the increased flexibility Delan now provides should be well-received by local orchardists."

Growers can consult the Pipfruit New Zealand website, www.pipfruitnz.co.nz, for further information on the recent change to the Delan spray schedule. For more information on using Delan itself, contact your local Fruitfed Supplies representative. ⇨

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Goemar seaweed cream proving successful in NZ vineyards

Goemar Calibra seaweed concentrate helps Villa Maria's vines cope with periods of climatic stress.

Garrie Armstrong manages the 76ha Taylor Pass vineyard – owned by Terra Vitae Vineyards and growers for Villa Maria – in the Awatere Valley in Marlborough.

As Garrie points out, the vineyard is on stony, free-draining alluvial soils. "It's quite exposed to the prevailing northwest winds, so it can be a challenging site to maintain good plant health.

"We've been using Goemar Calibra as a foliar application for the last couple of seasons and see a big difference in the leaf condition, with a more robust canopy, and less stress. Last season we were without water at a critical stage, and the vines were definitely able to better withstand this stressful period."

Garrie applies Calibra with every spray round starting early season, advocating the little-and-often approach to give vines a regular boost. He finds it easy to mix and very user friendly in a liquid formulation.

Calibra is a highly concentrated seaweed filtrate (GA142) produced by Goemar, a French company with over 30 years experience in the manufacturing and research of seaweed-based compounds. It's designed to stimulate nutrition to improve plant health, leaf condition and fruit development.

Yara Fertilisers' South Island manager David Spencer notes: "Goemar is a world leader in this specialised area of seaweed elicitors. They continue to conduct extensive research and have excellent validation of their products from leading worldwide institutes.

He continues: "Calibra contains phytohormones (auxins, cytokinins, gibberellins), amino acids, vitamins, bêtaines and polysaccharides with oligosaccharides making up 50% of the dry matter. Growers can expect to see the following benefits: improved fruit and leaf quality; improved leaf chlorophyll levels; improved tolerance to stress; stimulated root growth; improved nutrient and moisture uptake; more uniform fruit size and improved yield."

Talk with your Fruitfed Supplies representative about Goemar Calibra and Goemar's complementary physiological fruit-set activator BM86. ⇨



Avoid peak mite season in avocados

With peak six-spotted mite season upon us, growers are reminded to be proactive in their integrated pest management strategies.

Caltex Precision Spray Oils™ technical manager, Dr David Johnson, reminds growers to watch for infestation during spring/summer and apply D-C-Tron® Plus when six-spotted mites are first noticed.

D-C-Tron Plus has proved very effective as an early season control measure, becoming a mainstay of spray programmes, used alone and in combination with other key insecticides. The product is usually applied twice, a fortnight apart, at the economical rate of 0.5 to 1.0% v/v.

However, David says field trials in other crops show promise for multiple low concentration applications that result in better mite control than a single high rate application. This is achievable given the wide compatibilities of D-C-Tron Plus, which in addition to its inherent insecticidal activity, is a widely used spray adjuvant for other products.

"As an adjuvant, it helps achieve spray coverage, aids adhesion to the leaf surface and enhances the activity of partner products as a result of its refined formulation and inbuilt UV screen," David says. "Very cost effective mite control is possible using D-C-Tron Plus



Dr David Johnson, from Caltex Precision Spray Oils (left), and David Mowlem, from Fruitfed Supplies Katikati, discuss D-C-Tron Plus

early in the season before numbers build up, and it can be used in conjunction with other products (such as Mit é mec®) for high populations later in the season.

"D-C-Tron Plus has a role to play in controlling all major insect pests on avocados, being compatible with most other insecticides and offering simultaneous control of overlapping pests throughout the year including greenhouse thrips and armoured scale.

"Importantly, because of the formulation developed by the Precision Spray Oils™ team, D-C-Tron Plus has a high level of safety on beneficial populations including predatory mites and wasps, does not contribute to resistance and is compatible with the Avogreen® programme."

As an added bonus, a new formulation, D-C-Tron Plus Organic, is registered for use on organically-grown fruit, with the product meeting strict export market access criteria for organic growers. More information is available from Fruitfed Supplies outlets across New Zealand. ➡

Shorter PHI for Proclaim on avocados

A shorter three-day pre-harvest interval now applies to Proclaim® in avocados for key export markets.

Syngenta's insecticide, Proclaim, is very effective at controlling leafroller caterpillars. Its use rate for avocado crops is just four grams of product per 100 l of water. If using 3,000 litres of water per hectare, that means only six grams of the active ingredient, emamectin benzoate, is applied per hectare.

"Growers comment that it feels like you're hardly putting anything in the tank," says Syngenta's marketing manager John Yates. "But it doesn't take them long to see Proclaim really does work, even at such a low use rate."

Proclaim's pre-harvest interval is very short because such small amounts of active ingredient are being applied.

Proclaim was first approved for use on avocados in 2008 with a 28-day PHI set for all export markets – this restricted its use in the avocado spray programme. Now Syngenta has provided additional residue data to allow the Avocado Industry



Council (AIC) to set a 3-day PHI for exports to Australia, Japan, Canada and the EU. A 14-day PHI applies to USA, Korea, Hong Kong, Malaysia, Singapore and Taiwan.

Proclaim should be applied in sufficient water for full coverage; always with the addition of a non-ionic wetting agent. Repeat applications at 21 day intervals, or when monitoring thresholds are reached. A maximum of six applications can be made per crop per season. Because Proclaim has a mode of action specific to Lepidoptera pests, it is compatible with IPM programmes. Bees are not affected by Proclaim once the spray has dried – if applied when any flowers are present, do so when bees are not actively foraging.

Proclaim's PHIs for apples, grapes and kiwifruit have not changed and growers should refer to the relevant export PHI tables for these crops. ➡

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AVOCADOS



Reminders for December:

- ✓ **Six-spotted mite** numbers have been high through spring on numerous blocks this season. If SSM was an issue in your block during flowering, control with Mit é mec and DC Tron Plus as soon as flowering finishes. Uptake of Mit é mec's avermectin chemistry is best into young, newly-developed leaves and creates a reservoir of active ingredient in the plant. Longevity of SSM control is enhanced, helping leaf retention and thus fruit-set and early fruitlet growth.
- ✓ **Leafroller** larvae have also turned up in numbers a little earlier than usual this season and control is now a priority to protect fruitlets. Once leafroller become established between bunches of mature fruit, control is extremely difficult, so focus on keeping them out. Monitor blocks and if thresholds are exceeded, control as necessary. Success Naturalyte or Proclaim offer good efficacy on leafroller with short PHIs; both are ideal options if harvesting is underway. Prodigy is now also registered for use in avocados, offering excellent residual ovicidal and larvicidal control of this damaging pest.
- ✓ **Du-Wett** super-spreader has been widely used in kiwifruit, apple, grape and vegetable sectors for several seasons. Recent work shows its ability to greatly assist spray coverage when combined with low water rate applications in avocados. For further information on how this technology can assist your pest and disease control programme, please contact your Fruitfed Supplies store.
- ✓ Maintain a fungicide cover with copper products such as **Kocide Opti**, as avocado fruit rot pathogens may infect developing fruitlets at any stage. Kocide Opti offers the highest amount of bio-available copper (useful for disease control) for the lowest amount of elemental copper applied per hectare.

Fruitlets require feeding to ensure high rates of retention, good early fruitlet growth and to assist the tree in recovering from the stress of flowering. Apply **Fruitfed Supplies Avocado Fertiliser** as recommended. We also now have **fertigation grades** of avocado fertiliser available. Alternatively, potassium or calcium nitrate may be useful if the spring flush needs some encouragement, although excessive amounts of any nitrogen fertiliser should be avoided. Seaweed fertilisers such as **Calibra** may also be useful to assist early fruitlet growth and encourage general tree health.



Early avocado fruit-set

CITRUS



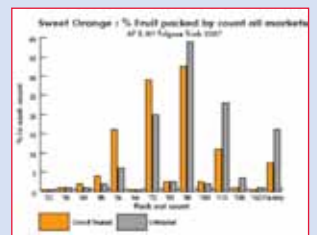
Reminders for December:

- ✓ Dr. Lisa Jamieson's research shows adult **citrus whitefly** are present mainly from October through to January. The most susceptible life stages are crawlers and nymphs which make an appearance in numbers in November. December offers the chance to target the greatest proportion of crawlers and first of the nymphs, thus reducing pest pressure into summer. For further information, please contact your local Fruitfed Supplies branch.
- ✓ Monitor closely for **Kelly's citrus thrips** as this pest can severely damage young fruitlets after flowering.
- ✓ **Armoured scale** insects may also appear at this time. For control options, please contact your Fruitfed Supplies representative.
- ✓ Maintain your fungicide programme up to and post-flowering to protect against scab and melanose infection of young shoots and fruitlets. Apply good protective chemistry such as Phaltan/Folpan or

Dithane Raishield prior to rainfall events, particularly while young leaf and fruit tissue is present.

- ✓ The presence of soft new spring flush provides an ideal opportunity to apply foliar fertilisers, ensuring fruitlet growth is not limited by sub-optimal leaf levels. Yara **Citrac** supplies magnesium, zinc and manganese, all of which are often lacking in citrus crops. Timing is critical, so please check with your Fruitfed Supplies representative for optimum timing for your block.
- ✓ Seaweed fertilisers like **SM6** or **Calibra** can assist early fruitlet growth during the cell division period and encourage general tree health.
- ✓ After flowering, feed trees with **Fruitfed Citrus Mix Fertiliser**; both low-potassium and zero-potassium options are available, depending on your specific situation. These are high-quality blends containing both ammonium and nitrate forms of nitrogen, high levels of soluble magnesium, plus zinc, manganese, iron, boron and copper, but no chloride.

Orange and mandarin growers have a new tool for increasing **fruit size** with the recent registration of Corasil. Using Corasil increases the amount of large, high value fruit at harvest, without reducing yield, highlighting the product's point of difference with other plant growth regulators such as naphthylacetic acid (NAA).



The active ingredient dichlorprop mimics the group of natural plant hormones known as auxins and increases fruit size by increasing the size of locules and juice vesicles in the fruit. Earlier harvest, improved rind colour and increased stalk strength may also be noted on treated fruit. For further information on how Corasil may be best used in your situation, contact your local Fruitfed Supplies branch.

GRAPES



Reminders for December:

- ✓ For the best **powdery mildew** control, apply an appropriate DMI fungicide approximately 10 days before bloom is anticipated and another at late capfall.
- ✓ Fortify your powdery mildew programme with **protectant fungicides** before and after the sensitive bloom period and ensure a protective cover is maintained through until veraison.
- ✓ Apply a fungicide with **Botrytis** activity at early capfall if wet weather is anticipated. A late capfall Botrytis-specific spray is vital to control latent infection.

Leafroller is a damaging invertebrate pest common in New Zealand vineyards. Their high pest status is partly due to the yield losses they can inflict if left uncontrolled, but also because their presence can exacerbate disease infection. Australian research shows that leafroller larvae actively spread *Botrytis* spores throughout bunches, increasing both the severity and incidence. Unlike other caterpillar species which eat into fruit, leafrollers tend to graze the berry surface, creating a wound which renders the berry susceptible to opportunistic fungal pathogens, especially *Botrytis cinerea*. Leafroller moths are polyphagous, i.e. larvae can sustain themselves on numerous different plant species, and there are more than 250 known hosts for the light brown apple moth, for example. They are also a relatively mobile moth, travelling up to 600m in 'mark and recapture' studies, so the number of adults immigrating into a vineyard from surrounding host plants usually exceeds the resident population. Blocks with tracts of vegetation nearby (e.g. scrub patches or shelter belts) and/or an overgrown and diverse inter-row/headland sward usually have high leaf roller pressure. Removal of alternative host plants contributes significantly to reducing leafroller populations. Frequent mowing of the vineyard floor during the growing season and stock grazing in winter also helps in this regard.

Many beneficial species help regulate leafroller populations naturally, providing supplementary control in commercial vineyards. The greatest mortality to populations occurs shortly after egg hatch and before the first instar larvae have found safe shelter. At this stage they are vulnerable to being eaten by several generalist predators including spiders, lacewing larvae and predatory bugs. Parasitoids may also account for a significant proportion of the larval population. The most abundant and efficient is a delicate (2-3mm) wasp species named *Dolichogenidea tasmanica*. Gravid females from this species seek first or second instar leafroller caterpillars to parasitise, using a needle-like ovipositor to inject a single egg into the larvae's body cavity. The wasp egg develops into a larva which immediately begins feeding on the leafroller larvae's internal tissues. When developed, the wasp larva emerges to spin a distinctive white, cylindrical cocoon (4mm), while the spent caterpillar perishes soon afterwards.



Leafroller webbing inside a grape bunch

Insecticides still provide the main form of leafroller control in New Zealand's vineyards, particularly for high pressure blocks. Prodigy® is an insect growth regulator from the MAC (moult accelerating compound) group, and an environmentally-benign insecticide. The active ingredient, methoxyfenozide, is a synthesized copy of the lepidopteron-moulting hormone and works by inducing a premature, incomplete and fatal moult. Fruitfed Technical team research with this product has demonstrated excellent season-long control from a single application at 80% cap-fall. Because hormones are specific to insect orders, Prodigy is selective and has no effect on non-target species such as the beneficial insects mentioned above.

made for optimum control; one prior to or during flowering and one approximately 3-4 weeks after flowering. If using Proclaim, be sure to add a suitable surfactant to the tank. If using a low water rate, Du-Wett is the product of choice, greatly increasing spread of applied sprays in this scenario.



Leafroller feeding damage

PIPFRUIT



Reminders for December:

- ✓ If wet and warm conditions are experienced this month, maintain protective fungicide for both **black spot** and **summer rots**.
- ✓ **Powdery mildew** control over this period of extension growth is important.
- ✓ Monitor **codling moth** and **leafroller** pheromone traps. If thresholds are exceeded, apply an appropriate insecticide.
- ✓ If post-harvest monitoring showed a threshold breach for **mealybug** or **scale insect**, apply an appropriate insecticide.
- ✓ Monitor for apple **leaf curling midge** and **woolly apple aphid**. Apply diazinon if justified and your intended markets allow its use.
- ✓ With rapid fruitlet development during this period, it is important to continue regular calcium applications with a plant-safe **calcium** formulation such as Stopit.

KIWIFRUIT



Reminders for December:

- ✓ The recent identification of *Pseudomonas syringae pv actinidiae* (Psa) in New Zealand kiwifruit orchards has resulted in rapid development of protocols to limit risk of spread of this pathogen. While it is currently unknown how this pathogen may affect kiwifruit production going forward, we are actively seeking suitable compounds globally that may be useful for controlling Psa. With the recent appointment of a technical research assistant in the Bay of Plenty area, we also have the resources available to research the effectiveness of these compounds under New Zealand conditions.
- ✓ Following flowering, an application of **DC Tron Plus** is recommended during the period from fruit-set to 14 days later (Hayward) or from fruit-set to 21 days later (Hort 16A). This application is extremely important in Hort 16A as oils cannot currently be safely used mid or late-season. A second application window exists prior to monitoring starting in Hayward, between 35 and 56 days after fruit-set (from 56 days after fruit-set, any applications in Hayward must be justified from monitoring results). While this early application timing is relatively safe, please follow label directions and best practice guidelines and contact your Fruitfed Supplies representative for further details.
- ✓ **Sclerotinia** is likely to be an issue if conditions are warm and wet through flowering/post-flowering periods. Apply Rovral prior to these wet periods to provide optimum Sclerotinia control and maintain fruit yield and quality.
- ✓ Specially formulated seaweed fertilisers such as **SM6** or **Calibra** should be considered prior to, during and after flowering, to promote healthy leaf and fruit growth. The last few seasons have also seen increased use of **Pentaflo** after fruit-set to increase fruit calcium and assist with fruit quality and development.

The period immediately following fruit-set to January is the most critical period for control of **leafroller** (see photo). Prodigy should be applied prior to flowering to provide early control and protect developing fruitlets. After fruit-set, consider Success Naturalyte (90 day PHI at the low label rate of 20ml/100l) or Proclaim (42 day PHI). Two leafroller applications should be

Late November to early December is a key period to monitor for **European red mite**, particularly in blocks with history of flare-ups. This period coincides with first generation egg hatch. If thresholds are exceeded, apply a suitable miticide, such as Mit é mec® which is very effective at this time due to its activity on both adults and eggs. This compound is not systemic, but has translaminar action and forms a reservoir within the leaf tissue. Studies demonstrate spray applied to the upper surface of the leaf provide miticidal activity on the untreated lower surface. This translaminar action also provides excellent rainfastness and surface residues dissipate quickly after application. This feature allows for greater beneficial safety and is compatible with IPM programmes using the predator mite *Typhlodromas pyri*. Mit é mec has a 28 day PHI.

Altacor® provides very effective control of **codling moth** and **leafroller** during early/mid part of the season. Its new mode of action binds the active ingredient to larvae's ryanodine receptors, which play a critical role in muscle function, resulting in a rapid cessation of feeding. Altacor's resistance to photo-degradation, coupled with its translaminar movement into leaves, provides good residual protection and resistance to rainfall events. Trials by the Fruitfed Supplies Technical team at both our North and South Island research sites over the last five years confirm excellent leafroller and codling moth control in apples as well as safety to beneficial insects.

SUMMERFRUIT



Reminders for December:

- ✓ Apply protectant fungicides for **brown rot** control prior to any infection period leading into harvest.
- ✓ Continue to monitor for **aphids** and **mites**. Apply an appropriate insecticide if required.

Fungicides applied pre-harvest are vital to achieving good control of **brown rot** and **Botrytis** at harvest. Best practice indicates thorough coverage applications of sprays in anticipation of an infection event, i.e. warm and wet weather. The DMI fungicide Folicur® has been registered in New Zealand for a number of years and has developed a proven track record for excellent late-season brown rot control. Fruitfed Supplies Technical team has carried out a number of research trials with Folicur where it consistently demonstrated a very high level of disease control, superior to other industry standards. NB. If three applications of Folicur have already been made (during flowering, for instance), then non-DMI chemistry should be used pre-harvest instead, e.g. Rovral. Always check PHIs with your exporter prior to application.

Du-Wett improves spray coverage at low water rates with new sprayer

Richard Holdaway, from Alfa Lea Vineyard in Blenheim's lower Wairau valley, talks about the Du-Wett® super-spreader range.

Richard Holdaway has been involved in the design, build and testing of a new sprayer in Marlborough over the last few seasons. Richard has also been successfully using the Du-Wett super-spreader range with fungicide applications in his family vineyard for many years.

In February 2010 Richard decided to try the prototype sprayer in combination with Du-Wett, aiming to perfect the combination for the bunch closure fungicide applications. He trialled many parameters of water and Du-Wett rates by using the spray indicator, Surround®, which leaves a visible white deposit after the spray dries. This clearly shows the coverage on leaves and bunches.

The best sprayer calibration that Richard found for complete bunch coverage utilised a water rate of 200 l/ha and a Du-Wett rate of 200 ml/ha. He noted: "The use of Du-Wett gave a superior bunch deposition compared with conventional higher water rates without Du-Wett."

Etec Crop Solutions, Du-Wett's local distributor, endorses this low water

rate. Etec regional manager Pete de Jong says: "Our vineyard trials show that 200 l/ha is the best water rate to use with Du-Wett. This provides the best deposition and spread of crop protection products. However Etec trials with Quantam Mist and other vineyard sprayers show that higher rates of Du-Wett are normally required to get the best spread and deposition with the spray indicator Surround, especially with its high use rate of 10 kg/ha. We now have a Du-Wett promotional pen which shows the recommended rates for product use per hectare."

Richard says he'll continue to use Du-Wett this season to apply *Botrytis* fungicides at key times. "I plan to do further coverage spray tests this season over the flowering period to check the best combination of water and possible Du-Wett rates per hectare."

For further information on Du-Wett, contact your Fruitfed Supplies representative. ⇨



Former Fruitfed Supplies representative Jonathan McMillan and Richard Holdaway, from Alfa Lea Vineyard, inspect the Surround coverage during Du-Wett test applications

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ManKocide a mainstay protectant

A blend of 15% mancozeb and 30% copper hydroxide, i.e. DuPont™ Kocide® fungicide, ManKocide® is a valuable fungicide for Hawke's Bay tomato and squash growers.

Respected Fruitfed Supplies field representative Vaughan Redshaw says ManKocide's broad spectrum effect on bacterial speck and blights make it a mainstay of the process tomato protection programme in Hawke's Bay.

"Over the years ManKocide has worked very well and continues to be used by tomato growers as part of their weekly crop protection programme," comments Vaughan. "There's a synergy in this particular blend which, in my experience, means the blended product is more effective than the individual products. ManKocide's method of manufacture creates a dry flowable formulation which is very easy to use, conveniently in one bag."

ManKocide is also used extensively in squash crops pre-flower. "It's

Process tomato planting at Apatu Farms in Hawke's Bay



very effective against angular leaf spot at that time. After flowering, it's not possible to use mancozeb, so growers revert to Kocide Opti as their mainstay," Vaughan says. "Please talk with your local Fruitfed Supplies representative about ManKocide's place in your crop protection programme."

ManKocide handles and pours like a liquid, wets instantly, remains in suspension easily and has excellent compatibility with most other fungicides, insecticides and foliar fertilisers. ⇨

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