

# Monthly Crop

Pukekohe Growers Supplies Ltd

September 2011

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Supplies Ltd

## NEW APPROVED PSYLLID CONTROL WITH KARATE ZEON & AVID

“Syngenta was approached by the Potato Industry last year and asked to register Avid on Potatoes for Psyllid control” quoted John Yates from Syngenta Crop Protection, “we agreed to do this, it’s a good example of a grower group working with a chemical proprietor.”

Avid and Karate Zeon are now fully approved for the control of potato Psyllid (in potatoes). Avid was already being used by many potato growers for Psyllid control, but some growers were unwilling to use it because it was ‘off-label,’ having no potato registration,” explains John.

In the case of Karate Zeon, the product was already registered for potato tuber moth in potatoes, but Syngenta trials showed the 40ml/ha rate for tuber moth was too low for optimum Psyllid control. The higher label rate of 100ml/ha rate for Psyllid required additional residue data, which Syngenta was able to provide to support the 14 day PHI in potatoes.

Both products target the nymph and adult growth stage and should be applied at the first sign of Psyllid. The addition of a crop oil (i.e. DC Tron Plus) to Avid may provide some ovicidal activity and increased activity on nymphs. Growers should seek advice when adding a crop oil, as temperature can affect crop safety.

To get the best results in both Avid and Karate Zeon, Syngenta stresses the importance of close spraying intervals (ie 7 days) at peak timings. Good coverage is also essential with both products, so high water rates and a suitable adjuvant are required.

Avid is compatible with IPM programs, so it recommended earlier in the season, as it allows predator numbers to build up. The use rate of Avid is 600ml/ha plus an adjuvant.

***The approval of Avid and Karate Zeon give potato growers two good registered options in the fight against potato psyllid***



ACVM no for Avid: P4648. ACVM no for Karate Zeon is P3495



# Spud growers reveal Psyllid cost mounting

Tim Fulton—The NZ Farmers Weekly

The cost of the Psyllid to the nation's potato growers, processors and seed merchants has been put at \$25m a year—four times the previous estimate.

"This is a bloody important problem for us," Potatoes New Zealand business manager Ron Gall has told growers, adding that while most producers would be well aware of this "maybe we haven't been saying it enough".

The Psyllid, which also affects tomatoes, carries and spreads a bacteria-like organism called liberibacter which finds its way into the vascular system of host plants.

In potatoes, the Psyllid infestation and liberibacter infection can cause zebra chip syndrome in tubers. It's not until these harvested tubers are cooked for french fries or crisps that the unsightly damage to the tuber can be seen.

Plant and Food Research is one of the Psyllid-liberibacter combination, discovered in the Auckland region in 2006.

Potatoes NZ has surveyed 42 growers, five processors and three seed merchants on Psyllid impact, finding that previous assumption of \$7m annual loss from the Psyllid was well off the mark.

Gall said the Psyllid had a destabilising effect in raising production costs and the risk of crop failure although he also ventured that it had generated more co-operation within the industry, which growers admit is particularly insular.

"It's actually increased cohesion," he ventured at the sector's group's annual meeting in Rotorua.

"People have actually talked to each other because we're all in the shit together."

Concerted efforts to slow and eventually stop the spread of the Psyllid might create greater political recognition of the potato sector's contribution to farming, Gall suggested.

As The Farmers Weekly reported on April 11, potato and tomato growers are disappointed the government won't directly contribute to control and eradication measures for the Psyllid.

For its part, Potatoes NZ had put about \$1.3m to a response since 2008 while the government's contribution has been by way of several Sustainable Farming Fund (SFF) grants and the efforts of Plant and Food Research, in particular.

Potato growers haven't failed to notice the government found \$25m to help kiwifruit growers and marketers fight Psa disease. It's that sort of standing—a consequence of income-generating capacity—that potato growers have been asked to set their sights on.

Potatoes NZ has come up with an ambitious revenue target of a \$1B industry by 2020, achieved in part by bringing processor and retailer groups into the organisation to increase funding for research and development and marketing.

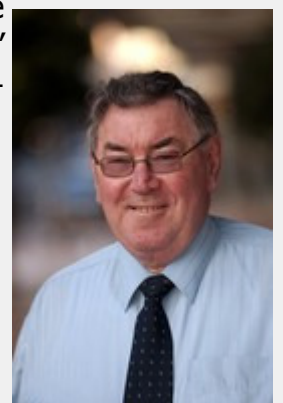
According to the group, in the year to March 2011 the country's 200-plus growers were paid \$143m. The total retail and export value, including what householders and restaurants buy, what is bought by local processors and what is exported, is estimated at just over \$382m a year.

Close to 11,000ha of NZ's arable farmland is used to grow potatoes, an area which is larger than any other vegetable crop.

***"This is a bloody important problem for us.....maybe we haven't been saying enough"***

Potatoes NZ says production over the past 10 years has "increased markedly" even though the hectares under production have remained fairly static.

Ron Gall—Potatoes NZ business Manager



# Focus on residue management in lettuce

Pesticide residues have been an increasingly important issue for growers over the past decade. Reliable information on the decline of residues from treatment to harvest is required for growers to take a practical approach to residue management and meet the food supply chain's requirements.

To address this need Bayer CropScience launched the Minimizer project five years ago. It involves monitoring residue levels on produce following the final application of fungicide or insecticide programmes. To commercial crops.

The idea began with us discussing pesticide residues with representatives of the food industry including retailers and their fresh produce suppliers," recalls Dr Stephen Humphreys, Bayer's Food Industry Manager. "We found that there was a lot of interest in residues and their reduction among all parties.

"We decided to initiate a programme that would proactively look at residues in order to meet the desires and needs of the food chain," he explains. "We wanted to move beyond the data generated from product regulatory studies designed for setting MRLs according to Good Agricultural Practice."

Instead the project determines the amount of residue produced by programmes applied in response to pest or disease threats to commercial crops. The residues indicate the rate of degradation of the active ingredients concerned.

So far the project has looked at pest control on apples with Calypso (thiacloprid) and Runner (methoxyfenozide), disease control with Nativo 75WG (trifloxystrobin + tebuconazole) and Rudis (prothioconazole) on brassicas and aphid control with the new insecticide Movento (spirotetramat) in brassicas and lettuce. The company already has plans in place for 2012 and beyond with a number of new products anticipated from Bayer's development pipeline.

Dr Humphreys believes that the results generated by the project give growers peace of mind about the company's products from year to year under varying weather conditions and pest and disease pressures.

With the launch of Movento in 2010 this product was an obvious choice for assessment of its degradation when used on brassicas and lettuce. Last year's lettuce trial, which is being repeated this summer, was carried out on iceberg and romaine grown by Gs in the Ely, Cambridgeshire area. Gs is the UK's largest lettuce producer with over 1,000ha under cultivation.

The company's Farm Technical Director Liz Johnson says, "we have always been in close contact with Bayer and when they



Dr Stephen Humphreys, Bayer CropScience Food Industry Manager

introduced the Minimizer project we said that we would be very interested in getting involved in it".

She adds: "This very important initiative is enabling us to find out how actives actually behave and what their residue decline curves are under a range of conditions. This sort of information is valuable for growers trying to minimise pesticide residues."



Current lettuce aphid

Liz Johnson regards Movento as a valuable addition to the insecticide armoury as it has unique two-way systemicity, moving both up and down in the plant. This enables it to target normally inaccessible pests such as the blackcurrant lettuce and lettuce root aphids. The product is a tetramic acid derivative that inhibits lipid synthesis in the pest. It is approved for use on a wide range of vegetable and salad crops and has good activity against aphids and whitefly.

In 2010 iceberg and romaine lettuce, planted in mid-July, received one or two applications of Movento at the full label rate of 0.5l/ha; the first application was four weeks after planting and the second, where used, seven days later.

Crop samples were taken weekly following the final application and the decline of Movento's active ingredient spirotetramat determined by SAL, a Cambridge based analytical laboratory. "With the iceberg lettuce there were no detectable residues in the samples taken a week after a single application of Movento or in samples taken 20 days after the second of two applications," recalls Dr Humphreys.



Current-lettuce aphid (*Nasonovia ribisnigri*) infestation on iceberg lettuce

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“In the romaine crop a residue just above the detectable level or limit of determination (LoD) was detected 13 days after a single Movento application. The level detected was substantially below the product’s MRL of 7.0mg/kg.” This year the project will also assess residues from two-spray programmes on romaine.

“It’s not surprising that the romaine, being a more open lettuce than iceberg, showed a small residue. Its architecture allows greater opportunity for spray interception,” he explains. “These initial results demonstrate the potential for a practical approach to residue management in lettuce crops with Movento’s novel chemistry.”

Liz Johnson says that as aphid infestation pressure in Gs lettuce was very low last year she cannot comment on Movento’s efficacy. However, the indications are that pest numbers might be significantly higher this summer and if so she will use the product commercially as well as repeating the 2010 trial.

G’s agronomist David Norman who monitors pest levels in their corps by trapping and inspection says that his initial prediction was for a late start to infestation due to low temperatures in November, December and January. But the picture became ‘confusing’ because February, March and April were warmer than average. “We began finding peach-potato aphid in early May which is relatively early,” he asserts, “but it’s still difficult to say how bad the season is going to be for aphids.”

Dr Humphreys affirms that in 2011 Bayer intends to build on last year’s encouraging data and again look at the behaviour of Movento in the lettuce crop. “With sustainable crop production high on both political and re-

tailer agendas it’s important that we reduce waste not only in the home but also in the field. These are areas where crop protection has an important role to play,” he emphasises.

“While strict quality controls and ever improving analytical sensitivity make zero residues impractical from a grower and sustainability perspective, projects like Minimizer can demonstrate that residue minimisation is a more realistic approach,” he claims.

He says that Bayer is very pleased with the project’s progress and the enthusiastic response it has had from those in the fresh produce supply chain.



A clean iceberg lettuce

**LIKELY EC LEAF NTIRATE LEVELS - The Vegetable Farmer Aug 2011**  
 The table below shows the final leaf nitrate levels likely to be accepted by the EC. Please note that these levels have still to be ratified. There will be no derogations when the new limits come into force.

ANNEX Secion1: Nitrate			
	Foodstuffs	Maximum levels (mg NO3/kg)	
1.1	Fresh spinach ( <i>Spinacia oleracea</i> )		3500
1.2	Preserved, deep-frozen or frozen spinach		2000
1.3	Fresh lettuce ( <i>Latuca sativa</i> L.) (protected and open-grown lettuce) excluding lettuce listed in point 1.4	<b>Harvested 1 October to 31 March:</b> Lettuce grown under cover 5000 Lettuce grown in the open air 4000 <b>Harvested 1 April to 30 September:</b> Lettuce grown under cover 4000 Lettuce grown in the open air 3000	
1.4	“Iceberg” type lettuce	Lettuce grown under cover 2500 Lettuce grown in the open air 2000	
1.5	Rucola ( <i>Eruca sativa</i> , <i>Diplotaxis</i> sp, <i>Brassica tenuifolia</i> , <i>Sisymbrium tenuifolium</i> )	<b>Harvested 1 October to 31 March:</b> 7000 <b>Harvested 1 April to 30 September:</b> 6000	
1.6	Processed cereal-based foods and baby food for infants and young children		200

## Growers urged to be frank about chemicals

Hugh Stringleman—The NZ Farmers Weekly

Growers have been urged to come forward with information on their use of “high risk” agricultural chemicals or they will lose the use of those chemicals without a fight.

That was the plea from Nikki Johnson, a partner in Market Access Solutionz, to the Horticulture New Zealand conference in Rotorua, attended by about 300 growers.

Johnson is leading the survey and submissions process for small horticultural industry groups faced with the loss of widely used and effective insecticides.

The Environmental Risk Management Authority, recently incorporated in the new Environmental Protection Authority (EPA), has four chemical families under review - dichlorvos, acephate and methamidophos and diazinon.

These are among 17 high-risk chemicals, including organophosphates and synthetic pyrethroids.

Johnson said these chemicals are likely to have been reassessed in other countries, being removed from sale for commercial reasons or NZ growers have been “caught” using them wrongly.

Such non-compliance may have resulted in residue detections and therefore pose a threat to human health. She found at the conference that some large users of agrichemicals, in the Pukekohe-based fresh vegetable industry, for instance, were reluctant to fill in survey forms or answer questions.

“A lot of growers are scared to provide information,” said Keith Vallahb, chairman of the fresh vegetable product group.

Johnson said her approach was to determine which chemicals would give growers the greatest problems if they were withdrawn.

“We then look at the priority pests which you would be struggling to control without that chemical and where alternatives are not available yet,” she said.

“We make a technical, non-emotive submission to the EPA and the decision is made by independent, appointed, non-EPA people,” she said.

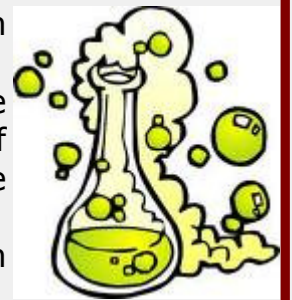
The official stance on dichlorvos is that it should be banned for outdoor use, so Market Access Solutionz has protested.

With acephate and methamidophos, the EPA wants to revoke all uses with a short phase-out period. That, too, has been protested. With diazinon, the preliminary recommendation is a phase-out between six months and three years.

Growers say that is way too soon, as diazinon is widely used to control pests and that alternatives are not readily available.

Johnson expects that EPA will schedule a combined hearing on these four chemicals in October, and that it will issue another position paper in August.

“The industry involvement in this reassessment process has changed the outcome,” she reassured growers. “However, these compounds do have high risks and their long-term use is unlikely to continue.”



## Tools for nitrogen management in potato crops

Belgian researchers (HortTechnology) based a decision support system (DSS) on the splitting of total nitrogen fertilizer application combined with in-season assessments of crop N requirements, aimed to matching a field scale, potato total crop N requirements and mineral N supply from soil and fertilizers.

After the pre-planting establishment of the total N requirement based on the predictive balance-sheet method, 70% of the recommended amount was applied to the crop at planting. Subsequently, at 20-50 days after emergence the need for supplemental N was assessed through non-invasive measurements of leaf chlorophyll concentration directly in the field. A simple conditional relationship was established to support potato grower's decisions on the usefulness of applying the remaining 30% N. This required a crop N status assessment in the fertilized field and within a small, untreated area (zero-N for reference).

The strategy developed is economically feasible, easy to operate, and validated for several potato varieties. It gives the grower the possibility of improving N use efficiency. Several tools to assess CNS have been investigated, for integration into this strategy. The use of a chlorophyll meter has been developed in the DSS. Research is continuing to investigate the potential of crop light reflectance as an indicator of crop nitrogen status, ground-based radiometers for near remote sensing and satellite multispectral imagery for spatial remote sensing. The Vegetable Farmer—Aug 2011

## New generation of hot mustards proving beneficial

*With the decreasing availability of crop protection products, coupled with the draconian restrictions on the use of animal manure before planting salad and vegetables crops, growers have shown an increasing enthusiasm for green manuring.*

Green manuring is, of course, not new but has rather fallen out of favour with many as although it has benefits as a soil conditioner, it seems to provide little else. Indeed, some would argue, that it actually encouraged pests like slugs to establish in the decaying trash.

This was, no doubt, because little was understood about the importance of incorporation of the mustards in respect of their biofumigant properties.

The new generation of hot mustards—caliente mustards—have changed all this. Several growers who have turned to this crop in order to improve their soil structure, have found other significant benefits resulting from their use. One of these growers is the Surrey-based company, Herbfresh.

Herbfresh grow 200 hectares of coriander, spinach, dill and parsley at Southwood Manor Farm, Hersham, near Walton on Thames, in the Thames Valley. Their farm manager, Hugh Bullock, believes the use of Caliente Brand Mustards has contributed to a considerable improvement in the plant health of the crops the farm grows in and around Hersham.

Hugh maintains that there is a considerable difference in the emergence and vigour of the crops following the use of these mustards than where they have not been used. He cites spinach as a prime example, where the difference between where the mustard has been grown and incorporated prior to drilling the crop, and where it has not been grown, is 'as clear as day and night.'

Hugh tends to drill Caliente Brand Mustard around the middle of August and he incorporates the crop during the middle of October. He finds that if he leaves sowing much later, he does not get the required growth and the crop frequently becomes attacked by pigeons. As a consequence, it does not achieve a satisfactory plant stand. He believes that one of the most noticeable differences where the mustards have been used is the lack of pythium affecting the germinating spinach crop sown the following spring.

The land at Southwood Manor Farm consists of a sandy loam. Because of the type of crops grown on this free-draining soil, a considerable amount of overhead irrigation is required and this can have an undesirable effect on soil structure. Using Caliente Brand Mustards helps to improve the water-holding capacity of the soil, consequently minimizing any damage done to the erosion of the soil which might occur as a result of irrigation and heavy rainfall. Hugh believes that improving the organic matter in the soil not only contributes to improving soil structure but it also encourages a build-up of beneficial insects.

Alec Roberts of Plant Solutions, a wholly-owned subsidiary of Tozer Seeds, has become something of a specialist in advising growers on how to get the best from these new mustards. He is very quick to point out that the fumigant effect achieved by incorporating the mustards must not be compared with total sterilants such as methyl bromide. Some sterilants can have a devastating effect on the soil fauna which is not a property associated with the more environmentally-friendly Caliente Brand Mustards. They have been bred to have a high glucosinolate content which assists the bio-fumigation process rather than having a detrimental effect on the soil fauna.

In common with other cruciferous plants, Caliente Brand Mustards release isothiocyanates. "It is important to remember," says Alex, "that immediate incorporation of the crop after it has been flailed, is absolutely essential to maximize the fumigant effect." If the weather is very dry, Alec believes that irrigation on the incorporated crop will improve the final result. He is also keen to emphasize that the mustard must be treated as a crop, rather than just sowing the seed and hoping for the best. Irrigation in dry periods is absolutely essential to ensure quick and even establishment. The crop will also require fertilizer and the guideline is that the crop requires between 120-140kg of nitrogen per hectare. This, of course, will depend on soil type and previous cropping. The rapid incorporation of the crop and the resulting biofumigation helps in controlling soil-borne pathogens such as pythium and rhizoctonia. The effect of reducing rhizoctonia has been particularly noticeable on potatoes. The aim should be to chop the crop—preferably with a flail mower with hammer blades—a couple of weeks after the first blooms have appeared. Caliente Brand Mustards have also shown considerable promise in suppressing some free-living nematodes. Trials are currently underway to examine the effects the mustards have on reducing potato cyst nematode numbers.

Caliente Brand Mustards have considerable environmental benefits, especially in intensive cropping situations where long term rotations are quite difficult to achieve. They help with soil structure by improving the organic content of the soil and the effect they have by reducing disease, pest and weeds can offer the grower considerable benefits. The Vegetable Farmer

### Saturday opening.....

**Spring is near, our store in Pukekohe will resume Saturday morning openings from mid September**

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## Pukekohe Growers Supplies

Mike Gordon	021 962 462	Pukekohe Ph	09 2370430
Gary Graham	021 992 829	Fax	09 2384226
Stuart Wood	021 717 924	Free Ph	0800 100 747
Dean McMiken	021 717 934		
Mark Abernathy (Store)	021 581101	Waharoa Store	07 8887342
Jerome Benefield (Waharoa)	021 778 073	Fax	07 8809142
Fred Smith (Waharoa)	021 790 181		

