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Insects attacking new homes in Niue no cause for alarm

SPC Entomologist Mr Sada N Lal visited Niue in early March at the request of the Director of Agriculture, Fisheries and Forests, Mr Brendan Pasisi, to look into a concern about insect damage noticed on the floors and ceilings of the new houses built as part of the Cyclone Heta relief aid package. Government authorities were concerned about the possibility of new pest introduction from overseas timber and logs.

Inspection of several houses found numerous insect holes on newly painted boards and floor planks. Black and brown beetles were found near the insect holes, and a black wasp. Live and dead plants around the houses were also examined for insect infestation. Insect specimens collected from the survey sites were brought to SPC for identification.

The most common insect found causing damage was the large false powder post beetle, *Xylothrips religiosus*. The beetle, which is widespread in the hot and humid tropics and subtropical countries, feeds on sapwood of both hardwood and softwood timber. The insect is usually common during hot and humid weather. The damage to the houses in Niue was typical of that caused by this beetle. Another false powder post beetle, *Sinoxylon conigerum*, smaller than *X. religiosus*, was also found in the houses but in smaller numbers. *S. conigerum* is also common in the tropics, especially in Asian countries.

The nature of the insects, the damage caused and spread of the beetles suggest that they have been in Niue for many years. The insects were probably able to infest the new houses because the timber used was untreated or ineffectively treated.

Another insect collected in the survey was the predatory beetle *Cylidrus cyaneus* of the beetle family Cleridae. This beetle has been recorded in Fiji and found to be predatory on false powder post beetle larvae. The predatory adult beetles were found frequenting the insect holes in the houses in Niue. A black wasp, probably of the potter group of wasps, was also found frequenting the insect holes.

These observations suggest that the insect pests causing damage to the houses have their natural enemies present in Niue. Normally the natural enemies would have kept the populations of the insect pest species under control. It can be concluded that the recent cyclone, Heta, affected the population of the natural enemies, upsetting the natural equilibrium. It is expected that, in time, the natural enemies will regain pre-cyclone population levels and equilibrium will be restored between pest and natural enemy.

It is not recommended that an insecticide be freely used for the control of the insects in the houses, but where possible Perigen 500 (permethrin) may be used for remedial purposes.

Following the label instructions very closely, the insecticide solution may be coarsely sprayed or brushed onto all exposed surfaces.

Plant health status for Tonga

Plant parasitic nematodes

Takaniko Ruabete, SPC Plant Pathology Technician, conducted a plant parasitic nematode survey for Tonga in February. Nematodes were last surveyed in the 1980s, thus the need to update nematode records.

Root-knot nematodes, *Meloidogne* spp., were not found to have a major presence in Tonga relative to other Pacific countries. In areas planted with tomatoes, there was very little presence of root-knot nematode. This is attributed to hybrid tomato varieties resistant to root-knot nematode being presently grown in Tonga. However, other crops observed with obvious symptoms of root-knot nematodes included carrot, *bele*, *hiapo* and banana.

Vaini Research Station staff identify nematodes as the main cause of poor growth of Japanese taro (*Colocasia antiquorum*) grown at Matatua in Tongatapu. Symptoms observed suggest some nematode activity. Extracted nematodes have been sent to CABI for proper identification. The survey of bananas for nematode activity canvassed all of Tongatapu including the remote islands in the Vava'u group. All banana plants were found heavily infected with nematodes. Severe symptoms of nematode damage were found in pineapple through out the Tongan islands. Typical of other Pacific island farming systems, pineapple in Tonga is grown alongside bananas and other root crops that are good hosts of plant parasitic nematodes, and the crops share the same parasitic nematodes.

Vanilla is an important crop and symptoms of burrowing nematode observed in other Pacific islands were also observed in vanilla plants here. Proper identification and confirmation of the burrowing nematode is pending from CABI.

Plant diseases

Jacqui Wright, SPC Plant Pathologist, completed a plant health survey of the 'top 10' crops identified for export:

1. Bananas: well-covered in past surveys, with newest disease thoroughly investigated by SPC Plant Virologist Dr Richard Davis.
2. Squash: out of season and covered under the ACIAR Tonga Squash Management Project.
3. Pineapple: surveyed in all areas.
4. Beans: not much available, inspected what was found.
5. Sweet corn/baby corn: surveyed what was available.
6. Rock melon: as for squash.
7. Bele: surveyed, new records expected.
8. Peas: out of season.
9. Lime: no lime orchard in Tonga, inspected what was found.
10. Cucumber: as for squash.

Over 230 specimens were collected in the survey, with some of them expected to be new records. Some interesting survey results include a dieback and root/crown rot of *bele* (*Abelmoschus manihot*) and a dieback of *hiapo* (*Broussonetia papyrifera*) and other plants. A leaf spot on pandanus was causing concern to the ladies making fine mats on Ha'apai. When infection levels get too high the ladies resort to burning the plants. It was suggested that this would make an ideal participatory extension project for developing control mechanisms. This survey will complement the Tonga official pest list for a number of crops.

Plant health status for Niue: a survey of virus and virus-like diseases

Richard Davis, SPC Plant Virologist, carried out a survey to determine the state of virus and virus-like diseases in Niue. Quarantine Officer Brandon Tauasi helped out in the survey.

The small island nation of Niue plans to expand production of two of its major crops, vanilla (*Vanilla tahitiensis*) and nonu (*Morinda citrifolia*), to join with tourism and fisheries as the four main pillars for the island economy.

The Department of Agriculture, Forestry and Fisheries (DAFF) aims to establish the vanilla industry based on 60,000 vanilla plants, planted at a rate of 20,000 per year over three years. There is a shortage of planting material, so it is likely that propagation sources will be plants presently on the island. It is therefore essential to know the likely virus disease status of these plants.

True virus-like symptoms were very uncommon in the vanilla examined and leaf samples were taken from all new and old vanilla plots. Other crops examined included tomato, watermelon, cucumber, chinese cabbage, kava, maize, taro, a plot of peanut and many banana stands. Some virus-like disease symptoms were found on some crops and samples were collected. Typical phytoplasma-like symptoms (witches broom and flowering abnormalities) were found on roadside weeds. In a large government owned, recently planted nonu plantation, two small trees had chlorotic blotching/mosaic-like symptoms.

Vanilla and cucurbit samples will be ELISA-tested at the SPC LRD plant virology laboratory and others will be forwarded to several different laboratories for specific diagnostic tests.

Quarantine training for Micronesia

Fourteen quarantine officers from CNMI, Guam, Palau and FSM attended quarantine training held at the University of Guam, 21-25 March 2005. The capacity-building training covered basics of entomology, plant pathology and botany, exotic animal diseases, brown tree snake and exotic frogs, quarantine services, import risk assessment, inspection of aircraft, ships and yachts garbage handling, import requirements, WTO agreements and field visits to observe betel nut bud rot disease and control.

SPC Plant Protection Micronesia (PPM) collaborated and jointly conducted the training with the following agencies: the United States Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS), University of Guam (UOG), US Fish and Wildlife, Guam Department of Agriculture Plant Inspection Station and Guam Customs and Quarantine Services.

Pre- and post-test surveys gauged the level of knowledge gained in learning and understanding the training topics. Although the post-test was slightly more difficult for the participants, they showed a 30% increase in knowledge gain.

FSM prepared for possible invasion by betel nut bud rot disease

Dr George Wall, Plant Pathologist, University of Guam, on a recent visit to Saipan noticed devastation of large numbers of betel nut trees caused by the betel nut bud rot disease, and informed SPC's Coordinator, Plant Protection Micronesia (CPPM), Mr Konrad Englberger. Dr Wall agreed with Konrad that FSM should introduce a shoe dip with Chlorox solution for travellers who had visited Saipan or who travel from southern Guam, and to have chemicals (Fosphite) for bud rot disease control and applicators available for the control of the disease if it gets to FSM. The CPPM is ordering applicators and chemical for an emergency stock.

The CPPM also discussed bud rot control activities with Phil Santos, who is responsible for control work in Guam. Mr Santos informed the CPPM that they are applying chemicals in affected areas, but not all farmers in Guam are cooperating in the control programme.

Samoa and Cook Islands ratify IPPC

Samoa and Cook Islands have now joined Australia, New Zealand, Papua New Guinea and Solomon Islands as Contracting Parties to the new revised text (1997) of the International Plant Protection Convention (IPPC).

IPPC is a multilateral treaty deposited with the Director-General of FAO. The purpose of the convention is 'international cooperation in controlling pests of plants and plant products and in preventing their international spread, and especially their introduction into endangered areas' (Preamble). The revision has been made primarily to reflect the complementary relationship of the IPPC to the Agreement on the Application of Sanitary and Phytosanitary Measures of WTO (SPS Agreement). The SPS Agreement identifies the IPPC as the organisation providing international standards to help ensure that measures implemented by governments to protect plant health (phytosanitary measures) are harmonised and not used as unjustified barriers to trade.

The PPPO Secretariat wishes to encourage other PPPO Member Countries who have yet to deposit their instruments of ratification to take steps towards ratifying the IPPC. PICTs can only stand to benefit from benefits forthcoming as Contracting Parties to the IPPC.

Samoa Training Centre receives funding for organic project

The Ulimasao Marist Centre for Special Learning in the big island of Savaii has received a grant of \$12,000 from SPC to assist with further development of its Organic Garden and Plantation Project.

The Centre caters for around 140 young people offering them a chance to begin, continue or complete their education. The Centre accepts teenagers between 14 and 18 years of age into a 2-year course tailored to their individual needs, and older students, up to about 25 years, into a 1-year course that is vocational oriented. Strong among these courses is horticulture.

The objectives of the project are to: develop an organic plantation with a variety of crops, including some suitable for niche markets overseas; provide a regular income for the Centre from the sale of organic produce; foster traditional farming methods and develop native crops and plants; and implement new methods of farming as proposed by the Samoan Marketing Authority.

Stephen Hazelman of SPC's Plant Protection Service visited the Centre for the occasion of handing over of funds, accompanied by Ms Emele Meleisea-Ainu'u, Head of Extension of the Samoa Ministry of Agriculture and Fisheries.

Biocontrol of Weeds in Vanuatu

Warea Orapa, SPC Weed Extension Officer, travelled to the Republic of Vanuatu to follow up on the progress of the biological control programme on weed management, supported by the EU-Plant Protection in the Pacific Project (EU-PPP).

In this trip the Co-ordinator trained national counterpart Mr Sylverio Bule of Vanuatu Quarantine and Inspection Service (VQIS) on biocontrol management, including rearing, collection and releasing of biocontrol agents, field data monitoring and work programme planning.

Two biocontrol agents, the weevil *Neochetina eichhorniae* and the leaf beetle *Calligrapha pantherina*, have been imported from Fiji to control, respectively, water hyacinth (*Eichhornia crassipes*) and two *Sida* species. Both bioagents are now confirmed established on the two weeds.

Mass-rearing of the two bioagents takes place at the VQIS insectary. During rearing it was observed that *C. pantherina* also fed on a less common *Sida*, *S. retusa*, in addition to the two troublesome species *S. acuta* and *S. rhombifolia*.

In a day trip around Efate, *C. pantherina* beetles were released on *Sida* at 8 locations. Mr Bule had already made first releases of *C. pantherina* on Tanna Island.

Field sampling will be carried out to collect baseline data. Regular data collection every three months on water hyacinth and *Sida* weeds will gauge the performance and impact of the bioagents in controlling the targeted weeds.

Biosecurity Information Facility (BIF) workshop

Selected key technical experts from Pacific ACP member countries attended a workshop at SPC Suva, 21–23 March 2005, to develop the framework for an electronic biosecurity information operations manual. The 1-week workshop considered both scope and content of BIF, a complementary activity to the biosecurity law harmonisation activity currently being undertaken by the biosecurity and trade support component of SPC's Land Resources Division. The workshop was part of the EU-funded Pacific Regional Economic Integration Programme (PACREIP).

Staff Travel

Dates	Place of travel	Staff	Activity
27 Mar – 8 Apr	PNG	Makelesi K Gonelevu Sarah Pene	PLD Refresher workshops
5-9 Apr	Samoa	Jacqui Wright	USP student project
4-8 Apr 25-29 Apr	Rome	Sidney Suma	ICPM Meeting IPPC Meeting
24 Apr – 1 May	Hawaii	Naca Waqa	Area Wide IPM
18 – 22 Apr	Taveuni, Fiji	Richard Davis	ELISA training Kava Dieback Farmer workshop
19 Apr – 10 May	Sol Islands	Warea Orapa	Weed management

Events Calendar

Dates	Place	Event
19-22 April	Nadi	Regional Biosecurity Border Management Workshop

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