



# Pacific Pest Info

Pest & Quarantine Information  
SPC Plant Protection Service

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### **1. Panama disease of banana spotted on Vava'u**

A joint SPC/Tonga MAFF plant disease survey in September 2002 found a cooking banana plant infected with a strain of the fungus *Fusarium oxysporum* f.sp. *cubense*, (Foc). The strain, VCG, is known to cause fusarium wilt (Panama disease) of banana. It is also known to cause disease in cooking bananas (ABB genotype) in Australia. The infected plant was found near the village of Tu'anekivale in Hahake district of the main Island of Vava'u.

PPS Virologist, Dr. Richard Davis and Tonga MAFF Plant Pathologist, Sela Tupouniua conducted a delimiting survey in September 2003 on the islands of Tongatapu, Lifuka and Foa in Ha'apai, and the main island of Vava'u, liaising with extension and research staff on each island group. Surveys were conducted by visually examining as many banana plants as possible from bitumen and dirt roads. When possible fusarium

wilt-like leaf symptoms are spotted, banana plants were cut down and examined for characteristic internal symptoms. When found, vascular strands were excised, air dried and forwarded to a laboratory in Australia for isolation of the fungus and determination of VCG. Thousands of bananas were observed from a distance and 36 were cut down.

The delimiting survey aimed to determine if other strains of the fungus were present in the country and also if this and/or other strains of Foc were more widespread in Tonga.

Dr. Davis and team found symptoms only in the part of Vava'u where the original disease outbreak was spotted one year ago. There is plenty of circumstantial evidence to suggest a recent isolated incursion (of a cooking banana specific strain only) from overseas.

Eradication is an unrealistic hope (mostly because spores of the fungus have been walked all around one village by people/pigs/dogs, etc for more than a year). However, the impact of this pathogen on Tongan cooking banana production can be greatly limited by applying a realistic and achievable response plan.

## **2. RPPO 15<sup>th</sup> Technical Consultation**

Pacific Island quarantine officials along with private sector producers and exporters are now better positioned to take advantage of opportunities presented to them as a result of regional and global trading agreements. These trading agreements, in particular their regulatory aspects, were the focussed of a series of meetings and workshops clustered around the 15<sup>th</sup> Technical Consultation among Regional Plant Protection Organisation (RPPO) in Nadi and Sigatoka, 29<sup>th</sup> September – 9<sup>th</sup> October 2003. SPC Plant Protection Service and the FAO-IPPC Secretariat jointly arranged the meetings and workshops.

The Technical Consultation focused on harmonisation of quarantine procedures while the meetings and workshops considered quarantine aspects of trade.

There were workshops on pre-shipment, high temperature treatments for commodities, and a separate meeting of the Pacific Plant Protection Organisation (PPPO). Phytosanitary matters, trade facilitation and capacity building are the main areas PPPO is helping Pacific island countries. Delegates from the Pacific and representatives from international Plant Protection Organisations from Canada, Uruguay, France, USA, Australia and New Zealand attended the meetings. In one of the workshops a proposal was made to develop a regional database for national pests to be shared amongst Pacific countries.

The meeting ended with a field trip to the Sigatoka Valley where participants visited farms registered to produce approved export commodities to New Zealand under the New Zealand-Fiji Bilateral Quarantine Agreement. This included registered pack houses involved in buying, grading, packaging and handling exports to New Zealand under the BQA arrangement.

## **3. Fiji Ag Show: Sigatoka Research Station**

*Luisa Korodrau – PPS Information Assistant, Library*

Communities living in the western Viti Levu took advantage of two-day Agricultural Show held at Sigatoka Research Station, 16 – 18 September, 2003 to learn about SPC Suva-based programmes. The SPC Display was organised by staff from the Plant Protection Service and included corporate information on the role of SPC in the Region, information on Agricultural Division programmes, Agroforestry, Marine Resources and Development of Sustainable Agriculture in the Pacific (DSAP). PPS displayed plant protection and quarantine brochures and leaflets.

A legibility publication request form produced by SPC Suva Library was road-tested at the Ag Show. The objective of the form is to allow for a more efficient and even distribution of SPC publications. The form proved useful providing background information on different sectors of the community putting out requests for agricultural information. It also avoided giving individual copies to students but rather to school administrators. Requests for information were broken down to appropriate technical level corresponding to primary, secondary and vocational school levels.

Eight MASLR agricultural stations in the Western Division were distributed extension packages prepared specifically to meet their information needs. The stations include Sigatoka Research (Nacocolevu), Sigatoka Agriculture Station (Lawaqa), Rakiraki Agriculture Station, Ba Agriculture Station, Legalega Research Station, Tavua Agriculture Station, Lautoka Agriculture Station and Yaqara Pastoral Company.

Many farmers expressed uncertainty as to places to go to find information and services such as where to find vegetable seeds. Local villagers requested information produced in Fijian and Hindi languages.

As a gesture of appreciation a Certificate of Appreciation was presented to SPC for the F\$8,000 donation to help with the 2003 Ag Show.

#### **4. Samoan farmers pick and choose favourable taro varieties**

*Emil Adams – PPS Information Officer*

Samoan taro farmers, who are members of the community-based taro breeding and assessment Taro Improvement Project (TIP), are now beginning to reap the benefits of cultivating a diversity of taro varieties. Since the incidence of Taro Leaf Blight (TLB) in Samoa in 1993 an active taro-breeding programme introduced many taro varieties. Farmers were involved in taste testing, recording yield and susceptibility to pests and diseases. Ten official TLB-tolerant varieties have since been released to taro farmers in Samoa. Farmer-assisted taro breeding and assessment is now in the third breeding cycle with many interesting cultivars being produced.

A minor drawback for the TIP breeding programme has come in the form of a 'disease', which seems to exclusively affect the popular Palau 10 or *polo voli*, a favourite amongst taro farmers. TIP members meeting in Alafua Campus in October expressed frustration at this new disease, which had taken on the name Pula meaning ripe. The 'disease' causes yellowing of taro leaves, which eventually kills the leaf. Compounding the problem is the susceptibility of Palau 10 to corm rot. Farmers were previously advised of the susceptibility of Palau taro to diseases.

However, on the upside, there are now close to 5,000 cultivars from the TaroGen breeding programme being field-tested at USP Alafua. Some of these cultivars have already made it to the market as farmers continue to pick and choose taro cultivars that are suitable for the table. Third generation cultivars observed in the field showed hybrid vigour and were much stronger and healthier compared to second-generation cultivars. The breeding programme will continue up to Cycle Five before reverting to Cycle One crossings. This method will ensure that the genes of traditional Samoan cultivars such as Niue, Manu'a and Pute Mu are embedded in the new cultivars and not lost to excessive out breeding.

In October SPC Regional Germplasm Centre staff Dr. Mary Taylor and Valerie S. Tu'ia donated a further 35 taro varieties to the USP managed Tissue Culture Unit. These varieties were from the TANSOL tissue culture collection comprising mainly of southeast Asian varieties. All these varieties have been indexed for taro viruses. The recently acquired molecular diagnostics facility at USP Suva has allowed for efficient virus indexing which has facilitated the movement of taro planting material from SPC. The USP Tissue Culture Unit was recently renovated with a new lab extension. This extension was funded by SPC.

SPC-RGC is compiling a TLB awareness package for the information of non-TLB countries. The package will include leaflets, an awareness video and CD-ROM. The TLB awareness video is a collaborative effort between Plant Protection Service, Regional Germplasm Centre and USP-IRETA.

## 5. Queensland Fruit Fly Eradicated on Rarotonga

The Queensland fruit fly, *Bactrocera tryoni*, has been successfully eradicated on Rarotonga. A news release from the Cook Islands Ministry of Agriculture pointed out the successful eradication based on data collected since the interception of the pest in November 2001, examination by PPS and an independent external expert. Re-printed below is the news release from Cook Island Ministry of Agriculture.

09/10/03

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AGRICULTURE

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Office of the Secretary



Ministry of Agriculture

28 August 2003

TO WHOM IT MAY CONCERN

### News Release: Eradication of the Queensland Fruit Fly

The Cook Islands Ministry of Agriculture (CIMO) wishes to announce that the Queensland fruit fly (*Bactrocera tryoni*) has been successfully eradicated on Rarotonga. This is based on data collected since the interception of the pest in November 2001, and its examination by the Plant Protection Service, Secretariat of the Pacific Community (SPC-PPS), and an independent external expert.

As soon as the foreign fruit fly was picked up by one of the Ministry's quarantine surveillance traps at the main wharf in town, the fruit fly emergency response plan (ERP) which SPC-PPS contributed to its development, was put into full implementation. ERP included the removal of a dump site at the wharf, extensive cue-lure pheromone trapping, destruction of fallen fruits by burying, protein bait trapping, fruit survey and laboratory rearing of fruit flies from samples, distribution of BactroMAT C-L bait stations, protein bait spraying and a public awareness program.

Since 11 February 2002 when the last of 9 flies were picked up by the cue-lure traps, no flies have again been recorded. This has demonstrated the effectiveness of the eradication process.

Acknowledgement is hereby extended to staff at SPC-PPS and CIMO for their untiring efforts in ensuring that the eradication program was closely followed through. Credit must also go to residents within the quarantined area for their support during the most critical time of the process. Financial and technical support was kindly provided by SPC-PPS and its donors; AusAid, NZAID and the European Union (EU).

The Ministry is extremely grateful for the inputs of everyone without which the pest would have had a good chance of establishing itself in the country and created havoc in the country's horticulture industry.

Anyone wishing to have access to the raw data obtained from the eradication exercise may contact the Ministry's Entomologist (Dr. Maja Poeschko, phone: 26720) directly, or through the Secretary of Agriculture.

Sincerely,

Nga Mataio  
Secretary

## **6. PPPO Executive Committee Reviews Prospect for a Regional PLD**

*Dick Vernon – Information and Extension Service*

The Executive Committee of the Pacific Plant Protection Organisation met on 1<sup>st</sup> October at Sigatoka, Fiji, chaired by Sione Foliaki. The afternoon was given over to reviewing the use of the Pest List Database for the Pacific (PLD) by Plant Protection and Quarantine Services, and to explore the prospects for sharing PLD information between countries. There were 29 delegates at the meeting, with 16 from Pacific Island countries & territories.

Dr Mick Lloyd introduced the Pest List Database, informing the meeting that after some failed attempts at such a system in earlier years this new case, the PLD, was proving very successful. Dick Vernon provided an overview and a demonstration of the system, which was now in use in seven countries: Samoa, Tonga, Cook Islands, French Polynesia, Fiji Islands, Vanuatu and New Caledonia. Implementation in the other major trading countries would be supported on request. The results of a pre-meeting questionnaire, which had been received back from all seven countries, were presented, and these gave valuable insight into the use of the PLD in each country.

Four options for a regional model were presented as follows:

- a. Countries send their PLD to SPC, say quarterly. Receive back a Regional PLD soon after
- b. As for (1) but Regional PLD made available on SPC Web site – in ‘read only’ format.
- c. Dial-Up: Countries maintain their own system. Regional model dials up and takes a copy of all new changed records.
- d. Interactive Internet PLD model: countries store their data directly on the Web model

There followed a discussion on the topic and the options. The PPPO Chairperson then called for each country’s representative to present their views on the options. These are recorded in the minutes of the meeting, which will shortly be published on the PPS Web site and available on request. The delegates from Cook Islands, Vanuatu, Solomon Islands, French Polynesia, Fiji Islands, FSM, New Caledonia, Wallis & Futuna, PNG and Samoa all agreed that a shared model should be developed. Several added cautions and conditions. Only three recommended particular model options with two voting for Option 2 and one for Option 3. SPC PPS will proceed with the development of a shared model in close consultation with member countries.

## **7. PNG Weed Biocontrol Training**

Improving the knowledge of PNG extension field workers in the Provinces on the principles of biocontrol and learning skills in handling, collecting and monitoring performance of insects used as biocontrol agents were the focus of a 3-day training, 19<sup>th</sup> to 21<sup>st</sup> August 2003, at Labu Research Station near Lae.

SPC Weed Officer, Mr. Warea Orapa, conducted the training assisted by local weed specialists. National Agricultural Research Institute (NARI) requested for the training to be conducted with funds provided under the ACIAR Project CS2/91/96 - Biological Control of *Chromolaena odorata* in Papua New Guinea. This Project is implemented by NARI.

Sixteen participants from government and private sector came from a broad spectrum of agricultural fields representing research and extension, quarantine, environment and mining rehabilitation.

SPC Plant Protection Service supported the participation of Mr. Daniel Wagatora of Solomon Islands Quarantine Service and Mr. Sylvério Bule of Vanuatu Quarantine and Inspection Service.

The training went through the SPC guidelines and FAO Protocols and Codes of conduct used in the screening of biocontrol agents before field releases. This exercise would help dispel fears about biocontrol agents of weeds becoming pests themselves and affecting non-target plants.

*Chromolaena (Chromolaena odorata)*, a weed which is quickly spreading throughout PNG and some countries in the north western Pacific, broomstick weed (*Sida acuta*), water hyacinth (*Eichhornia crassipes*) and giant sensitive plant (*Mimosa diplotricha*) were used to show participants the benefits of using very host-specific biocontrol agents to control troublesome weeds. The workshop activities included host testing to determine host-range of a biocontrol agent, rearing, collection and shipping of insects.

For field trips participants visited the PNG National Herbarium in Lae, the SPC Taro Beetle Management laboratory, farms in the Markham Valley to examine current biological control work on invasive weeds and a visit to Ramu Sugar Ltd in Ramu Valley, 150km west of Lae. Dr. Lastus Kuniata, Ramu Sugar Head of Agronomy gave two interesting presentations on bio-control of pasture weeds and IPM to control various sugarcane pests.

Work plans for 2004 will include similar exercises for PICT.

## **8. Biocontrol agent to control invasive vine on Saipan**

On Saipan, in the Commonwealth of the Northern Marianas, the Department of Lands and Natural Resources (DLNR), started releasing last March a weevil that feeds on ivy gourd (*Coccinia grandis*).

DLNR said it could take three to five years before the weedy vine is controlled in Saipan. The vines already cover about 50 percent of the island.

Ivy gourd grows indiscriminately and has also been found in patches on Rota, Tinian and even Sariguan. These weed kill trees, shrubs and other vegetation. They also cover stationary non-living objects like fences, telephone poles, houses and buildings, raising safety concerns.

DLNR Secretary Tom Pangelinan, has asked the community. "If you see the ivy gourd in your place, chop them off, cut them, burn them. A coconut tree, for example, that is covered by scarlet gourd can die because of suffocation."

DLNR said the public should not use brush cutters because they will only scatter the vines' vegetative parts that may grow into another plant.

Over 500 weevils were by released DLNR between March and July for the biological control of the ivy gourd vine. The weevils feed exclusively on ivy gourd.

Tim Thornburgh, DLNR grants writer, said the 500 weevils have already multiplied and are controlling the weed vines, especially in areas of greatest concentrations like San Jose, Kagman and Marpi. "In three to five years, you may not even see scarlet gourd anymore. It takes time for the weevils to control the weed," said Thornburgh, citing the example of Hawaii.

He said the rainy season is also a factor why the ivy gourds seem to be in abundance on the island.

DLNR believed that a farmer on Capitol Hill introduced the ivy gourd in the late 1980s. But it was only in 1996 that the local government found out that this plant was considered a pest in Hawaii. By 1997, it had already spread to almost all points on Saipan. (*Modified version of Haidee V. Eugenio's article in Marianas Variety, October 31, 2003*).

## **9. Yam disease threatens Pohnpei food staple**

Growers in all five municipalities of Pohnpei identified a very serious disease, which attacks the entire yam plant. Commonly referred to as Yam Dieback or Yam Anthracnose, growers in FSM call it *Soumwahu en kelp*. Plant pathologists attribute the disease to a fungus, *Colletotrichum gloeosporioides*. Growers found increasing severity of the disease from 1999 – 2001.

Yam plays a huge role in the culture of FSM people much like taro is to Polynesian societies.

Pohnpei growers were brought together in a farmer-based meeting and assisted by a multi-disciplinary panel comprising of Land Grant Program, College of Micronesia-FSM Research and Extension, Office of Economic Affairs – Division of Agriculture and staff from SPC Plant Protection Service.

Collaborators in the participatory extension exercise included the Land Grant Program, College of Micronesia-FSM lead by Assistant Director Mr. Jackson Phillips, Researcher Dr. Flordeliza B. Javier and Extension Agents, Mr. Alpenster Henry, Mr. Mark Kostka, Mr. Augustine Primo, Mr. Engly Ioanis and Mr. Maselino. Department of Economic Affairs, Division of Agriculture, was led by Chief Officer Mr. Adelino Lorens.

Yam growers suggested solutions to the yam-dieback problem highlighting those ones that are sustainable and environment friendly. Pohnpei is an atoll with a fragile environment. Yam is a very important crop

entwined in the social fabric of FSM culture thus growers will be consulted in pest management control activities now planned by the multi-disciplinary team.

Mr. Konrad Englberger, Coordinator for the SPC-Plant Protection Micronesia programme, helped secure funds for the activity. AusAID and NZAid, through the SPC Pest Management in the Pacific (PMP) programme, are two major donors to Plant Protection Micronesia programme.

PPS Extensionist Mr. Steve Hazelman was in Pohnpei to help with the participatory exercise together with Dr. Jacqui Wright, PPS Plant Pathologist, who was investigating the yam disease and conducted a forest survey.

## **10. SPC PPS Internet Site invites input from PICTs**

*Dick Vernon – Information and Extension Service*

There is a new look to the SPC Plant Protection Service Internet site (<http://www.spc.int/pps/>). The opening page displays a “Pest of the Month”. The idea is to help us all to acquire a basic knowledge of the regions’ most important pests.

Readers are invited to submit their own candidates for this feature. A number of plant protection and quarantine services have received fine digital cameras. Let us see what fine pest pictures you have been able to take with them.

The Pest of the Month feature aims to show for each pest the following: photo(s) to facilitate identification, the scientific and common names, how it is a problem, its origin and how it is distributed (important for biosecurity), and its geographical spread across the Pacific region. Do not worry if you do not have all this information - we can help you to get it together.

### ***Pest-related Stories***

We also invite you to write in with any cases of pest interceptions at borders, and pest-related stories such as successful control of an outbreak, that may be of interest to others and that can therefore be published on the PPS Internet site.

## **11. Completed PPS activities in PICTs**

<i>PPS Staff</i>	<i>Dates</i>	<i>Activity</i>
Luisa Korodrau Sada N Lal Nilesh Prasad	16-18 Sept	Fiji: Fiji Ag Show, Sigatoka Research Station
PPS	29 Sept – 3 Oct	Nadi/Sigatoka: PPPO Executive Meeting/RPPO 15 <sup>th</sup> Market Access Workshop/ RPPO 15 <sup>th</sup> Field Trip/ HTFA Treatment Workshop
Konrad Englberger	13 – 18 Oct 20 – 24 Oct	Kosrae: citrus canker survey with Dr. Tim Gottwald (SPC funded) Chuuk: Pest survey with Dr. Jacqui Wright and Dr. Muniapan
Sada N Lal	20-28 Oct	Tonga and Samoa: Harmonisation of Pesticide Law
Warea Orapa Richard Davis Naca Waqa Salend Kumar	30 Oct	Fiji: Yaqara Pastoral Company Open Day
Jacqui Wright	20 Oct – 6 Nov	Pohnpei: yam anthracnose disease and forestry survey
Steve Hazelman	26 Oct – 6 Nov	Pohnpei: PRA on yam anthracnose
PPS Information	5 – 11 Nov	Tradewinds Hotel, Fiji: Information display for CRGA and SPC conference
PPS Information	11 Nov	Holiday Inn, Fiji: Information display for HOPE (Helping Our Planet Earth) Fair

## 12. PPS Staff travel calendar

Dates	Country	Staff	Activity
20-28 Oct	Tonga and Samoa	Sada N Lal	Harmonisation of Pesticide Law
18 Oct – 5 Nov	PNG	Richard Davis	HLB delimiting survey
1 – 12 Nov	Palau, Guam and CNMI	Ema Vueti	Workshop on melon fly area wide programme
2 – 9 Nov	Vanuatu	Sada Lal Fereti Atu	TBM taro harvest
10 – 14 Nov	Tonga	Richard Vernon	Follow-up PLD Workshop
10 – 14 Nov	Samoa	Salend Kumar	IRETA Organic Farming Workshop
6 – 14 Nov	Guam and Palau	Konrad Englberger	Fruit fly sem inar and quarantine work
23-24 Nov	Fiji	Sada N Lal Fereti Atu	Nadi: TBM Meeting
24 – 28 Nov	Australia	Richard Vernon	UNESCAP Information Technology for Trade Meeting
22 – 29 Nov	New Caledonia	Warea Orapa	Invasive pasture weeds meeting
1 – 5 Dec	PNG	Ema Vueti	HTT and PAU Trial
5 – 11 Dec	Malaysia	Richard Vernon	Pest Lists for Asia Meeting