



Factsheet

February 2018

Phone App Identifies Pacific Crop Pests and Diseases

Purpose:

To explain and promote a new, free phone application (app) for use by agriculture extension officers and farmers which enables them to quickly diagnose and get treatment advice for pest and disease threats to horticulture in Pacific Island countries and territories (PICTs).

Containing 350 factsheets, the app is particularly helpful in providing information to people in remote locations.

Key Message:

Extension officers face many challenges delivering effective services to large volumes of farmers in rural and remote communities. The Pacific Pests and Pathogens app is a practical example of how Information Communication Technology (ICTs) can help extension have a broader and more impactful reach, even to locations without internet or mobile phone coverage. The voluntary and significant uptake by extension officers demonstrates a need, desire and capacity among extension officers for more ICT solutions.

Agriculture extension officers are helping farmers to identify diseases and fight pests with the help of a handy mobile phone app.

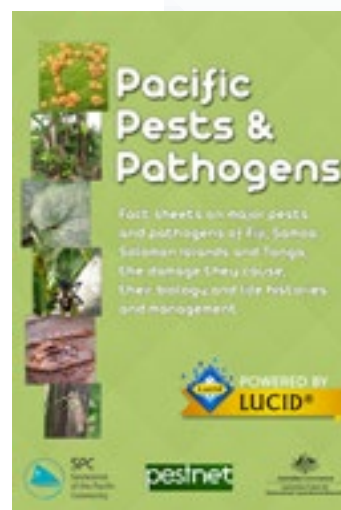
To download the app to a mobile device, use the internet to access the Apple or Google online stores then search for, and download, Pacific Pests and Pathogens. Once the app (only about 90MB in size) is on a mobile device, officers can use the stored information - even offline in remote locations without internet - to instantly identify and diagnose hundreds of pests and diseases.

Funding Support to Continue

The development of the Plant Health Clinic (PHC) concept and its supporting resource, the Pacific Pests and Pathogens app, is part of the Strengthening Integrated Crop Management Research in the Pacific Islands in Support of Sustainable Intensification of High-Value Crop Production project.

The five-year AUD\$3.4 million project, focusing on integrated crop management (ICM) and identifying plant health management strategies, has been funded by the Australian Centre for International Agricultural Research (ACIAR). The project is led by the University of Queensland in collaboration with the Pacific Community (SPC).

From 2018 the project is evolving to focus on responding to emerging pest and disease threats to horticulture in the Pacific Islands, while continuing to support PHCs and the app. Apart from focussing on existing pests in Fiji, Papua New Guinea, Samoa, Solomon Islands and Tonga, it will also alert extension and biosecurity staff to emerging problems already in the region, and those on the horizon.



App Evolves from Plant Health Clinics



Farmers benefit from a Plant Health Clinic conducted in Fiji.

The app evolved as an offshoot of the work being done at Plant Health Clinics.

Plant Health Clinics are temporary clinics held in marketplaces and other rural locations, staffed by agriculture extension officers who have been formally trained as Plant Health Doctors.

Farmers from the local area come to the market to sell their crops, and at the same time can visit the clinic bringing samples of plants from their farm infected by disease or infested with pests, for diagnosis and ideas for management.

Plant Health Doctors using the app have proven to make significantly easier and faster diagnosis.

“The phone app has equipped field officers, so they can go and face the farmers and provide answers or solutions to their problems instantly,” said Fereti Atu, SPC Integrated Pest Management Officer, adding “they are very excited.”

Online Factsheets

The Plant Health Clinics - and the workshops that train agriculture officers to become certified Plant Health Doctors - rely on the PHC factsheet series, with each factsheet detailing a pest or disease and its symptoms, host plants, options for control, and other details.

The new ‘Version 6’ of the app launched in November 2017. The first version of the app was introduced in 2014, just two years after the first PHC training began in the Solomon Islands.

“There are many ways the app helps officers during a Plant Health Clinic,” according to Mani Mua, SPC Plant Health Field Consultant and trained Plant Doctor, based at Sigatoka Research Station, Fiji.

“The app has crops arranged in alphabetical order; there is a search engine so you just hit key words and a list will be provided, and pictures that help officers and farmers identify the symptom and select the correct pest or disease problem,” Mr Mua said.

“There are also factsheets and mini-factsheets giving a summary for officers to read quickly and respond to farmers, rather than reading through the full factsheet, which can be time consuming,” Mr Mua said.



An example of a Mini Factsheet, about Banana Streak Disease, that can be found on the phone app and also stored on Pestnet (www.pestnet.org).

Using Technology to Improve Cost and Time Efficiencies

The app has so far been a vast improvement on the previous system of hardcopy factsheets, which were more expensive, more difficult to use and far less convenient.

Dr Grahame Jackson, the lead scientist pioneering the expansion of the Plant Health Clinics and introduction of the app, explained how using the app is easier and more efficient for extension officers: “It’s not just more compact, and lighter than a bulky hard copy, it’s easy to update with new information, photos, and to make corrections.”

“These are important considerations, especially as taxonomists constantly reclassify organisms, pest distributions change, and pesticides become outmoded and new ones enter the market.”

“Budget savings are significant given the cost of colour-printing a full set of 350 hardcopy factsheets may reach more than US\$600 in many Pacific Island countries – more than a quality smartphone or tablet.”

But there is one disadvantage, Jackson continued: “Not everyone has a smartphone or tablet. So we have put the fact sheets on the Internet on the PestNet website (www.pestnet.org).”

Initially, a key concern was the assumption that extension officers would not have smartphones to use the app or, if they did, whether they would download each version. But before training sessions were even held to address this problem, the extension officers were already voluntarily using their own personal phones to download, share and update the app – it has significant uptake.

“We realised this was something that extension officers could see the worth in – now extension officers literally have information at their fingertips.”

Expanding the Application

Adding to the app’s capacity to provide instant assistance to farmers is the addition of a new “WhatsApp” social media group in late 2017.

Using WhatsApp, owned by Facebook, an extension officer – or farmer – can instantly send a text message or photo seeking assistance from the group’s growing number of experts.

“We heard about farmers using WhatsApp in Africa to great success, to share experiences, so a WhatsApp group was formed in Fiji and opened to people in Samoa, Solomon Islands and Tonga to see its relevance,” Dr Jackson said, adding “it was an instant success.”

In addition to using WhatsApp during routine visits to farms, it has also been used at PHCs to send “real time” messages to experts to get immediate pest and disease identifications, to report pest and disease outbreaks and for management options.

“It has become an essential part of extension officers’ toolkit,” according to Dr Jackson, and will be further explored in future as part of Phase 2 of the project.

“The future of providing farmers with plant protection information has never been brighter.”

“

It’s worth the considerable cost and time involved in developing and maintaining the app - the cost is not huge when you consider the benefits,

Fereti Atu

SPC Integrated Pest Management Officer

”



The app is used by extension officers in the field, including at Plant Health Clinics, to assist farmers.

FIELD STORY

Farmer Connects with Quick Response

A Fijian farmer who travelled more than 40km from her farm to a Plant Health Clinic was impressed with the speed and quality of the advice she received, thanks to a Plant Health Doctor and a useful phone app.



Mani Mua, Plant Health - Pacific Community (SPC) and trained Plant Health Doctor, and trained Plant Health Doctor, used the app at a Plant Health Clinic in Sigatoka Marketplace to assist farmer Lusiana Leitabu.

“I find it fantastic to connect with the proper people [to get advice], because otherwise I would stay with my old way of doing things and make no progress,” said farmer Mrs Lusiana Leitabu, who carried two diseased chilli and vudi (banana) plants more than 40km from her farm to the Sigatoka Markets where a trial Plant Health Clinic was being held.

Plant Health Doctor at the clinic, Mani Mua, used his mobile phone app to provide specific prevention strategies for the currently untreatable chilli disease, and also informed Mrs Leitabu about a disease resistant chilli variety that is being propagated. For the vudi the Plant Doctor’s successful advice was to shift to a new plot after two years.

“I was thrilled to be there and find out about different diseases affecting different farmers, and I was talking with other farmers and some were very happy with the results,” Mrs Leitabu said.

Mr Manu explained that “The benefits work both ways. The farmers are happy with our quick response using the app, so they make a positive connection with extension and then start to call us anytime, so that means I don’t have to travel so far to see so many farmers in remote locations,” Mr Mua said.

“In other words, using the app and WhatsApp, we extension and research officers or Plant Health Doctors can be in many places at one time and more useful to farmers than ever before.”

Just two weeks after the clinic, Mrs Leitabu phoned Plant Health for advice about insecticides, and she is now in regular contact with extension officers whenever she has a question.

“This is an opportunity for us farmers, we hardly have people to give us advice, so I tell other farmers if you have the opportunity jump at it as that is the best way we can be helped,” Mrs Leitabu said, adding that she hopes in future the clinics will expand to more rural locations.



This factsheet has been developed by the Pacific Islands Rural Advisory Services (PIRAS) network with support from the European Union-supported Intra-ACP Agriculture Policy Programme (APP), implemented by the Pacific Community (SPC). For details: www.pestnet.org

© Copyright 2018 Pacific Community (SPC)

Published by SPC on behalf of PIRAS and the Intra-ACP Agriculture Policy Programme (APP).
SPC Land Resources Division Private Mail Bag, Suva, Fiji Email: Irdhelpdesk@spc.int Website: www.spc.int