



# NWC Research and Extension News

Issue 3

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## From research to commercial reality: new solutions for disease control and freight.

Papaya exporters currently lose about 10% of potential income due to post-harvest rots. This can be even greater in the very wet years or in times of natural disasters. Nature's Way Cooperative (NWC) through the ACIAR funded Fiji Papaya Project (FPP) has invested in three years of research into post-harvest disease control measures for Fiji papaya which have identified hot water dips as an effective treatment to reduce both disease incidence and severity from 10% to around 1%. Now thanks to a grant from New Zealand Aid, NWC will be turning this research into a commercial reality. The grant will provide for two mobile hot water units which each have the capacity to treat 400 kgs of papaya at a time in the existing treatment bins. Construction of the new hot water dipping units will begin in June 2014 followed by a series of in-depth trials to refine the treatment and establish the appropriate treatment charges for exporters. It is envisioned that the hot water treatment units will be commercially operational by the start of the Fiji's wet season in November 2014.

Another research outcome from the ACIAR FPP, is the package of practices for optimizing sea freight Fiji papaya. Successful sea freight trials have demonstrated that Fiji papaya can be sent via sea freight to New Zealand with no loss of quality and for a freight cost savings of up to 50% of current air freight costs. Despite the positive research findings, sea freight of Fiji papaya has not taken off due to availability of fruit and infrastructure constraints at NWC. Thanks to a partnership agreement with the Fiji government and NZ AID, NWC will now be investing in the required sea freight bay and loading trolley that will facilitate sea freight of Fiji papaya to New Zealand.

## Nature's Way Cooperative moves into bulk SMS for communication with members

NWC has been operating since 1996 and now has over 250 members. Until recently, NWC communicated with its members through the issuance of letters sent through the postal service which is expensive, time consuming and unreliable. NWC has recently launched an initiative to begin bulk text messaging (SMS) as one form of communication with its members. Using a simple excel database of mobile numbers, NWC works with a local communications company to send out a variety of information including: announcements about upcoming meetings (AGM etc), advice about new products available through NWC (seed, bait spray etc) and any other relevant information.





# Research Update

## Papaya consumer work set to take place in New Zealand

The Fiji Papaya Project (FPP) will be working with Australian partners on a range of studies to understand consumer preferences in New Zealand related to packaging, fruit size, appearance, taste, certification and branding. The goal of this work is to try and identify what a consumer is really looking for when they buy papaya. This work will start in June 2014 thanks to a consumer profiling project underway as part of the Pacific Agribusiness Research for Development Initiative (PARDI), funded by Australia's Centre for International Agricultural Research (ACIAR).

New Zealand is the main market for Fiji papaya, however this market has been significantly undersupplied over the past few years due to shortages of fruit and a re-directing of exporters focus to the Australian market. It is anticipated that this consumer analysis work will help focus marketing efforts and expand exports of Fiji papaya into New Zealand.

Consumer sensory preferences will also be studied as part of the project. This will be carried out by a specialist sensory analysis team from Queensland, Australia, who will survey Australian and New Zealand consumers and identify their tastes (in terms of flavour, texture and other sensory characteristics) and buying behaviour.



## Farmer group leads the way in organic papaya production

Building on research findings from the FPP, a group of young farmers from the Sabeto Valley in Nadi have formed a group to expand production of organic papaya. The Sabeto Organic Producers Association (SOPA) are using a local organic certification system called the Participatory Guarantee System (PGS). The PGS programme is an initiative driven by the Pacific Organic & Ethical Trade Community (POETCom) through funding from the International Fund for Agricultural Development (IFAD).

An initial market for the PGS certified organic papaya has been identified in New Zealand and it is anticipated that commercial exports will commence at the end of 2014. SOPA is also targeting the much larger US organic market once market access has been secured.



# Post-harvest rots continue to pose challenge for papaya industry—hope is around the corner

The Fiji Papaya Project has been working with exporters to monitor fruit quality of papaya exports through the 2013/2014 rainy season (Nov—April). Fruit quality assessments along with feedback from papaya importers have revealed post-harvest rots levels up to 30% of the consignment. These 2013/2014 disease levels are much higher than what has been recorded since 2009 (except immediately after natural disasters). The Fiji Papaya Project has been working with exporters and farmers to manage in-field sanitation, physical damage and temperature control which has resulted in some reduction of disease levels.

The way forward for achieving an acceptable rot level in the wet season is seen to lie with a commercial hot water treatment that has been developed through the Fiji Papaya Project and will be implemented by NWC through support from New Zealand Aid. Thanks to this new hot water treatment, it is expected that the 2014/2015 wet season will be much more profitable for papaya exporters.



## Nature's Way Cooperative continues to push for US market access for Fiji Papaya

In April 2014, NWC hired a market access specialist, Dr. Jack Armstrong to review the status of Fiji's market access submission to the US for papaya and make recommendations for next steps. Dr Armstrong was the USDA scientist who pioneered the developed the high temperature forced air (HTFA) treatment that is used by NWC.

Exporters have identified a ready market in the West Coast of the US, particularly for organically certified papaya. They have been waiting for more than a decade for the opportunity to capitalize on this market. Fiji through the Biosecurity Authority of Fiji (BAF) submitted a market access application to the US in 2005. However, a number of technical issues remain unresolved and access to this remunerative market is still not available.

Despite the presence of a dedicated regional project on Pacific market access, NWC has had to invest its own resources in the recent review study. The Armstrong Review has made practical recommendations to finally resolve the problem of US market access. However, the implementation of these recommendations will likely require significant external funding.

## Project Overview

The Fiji Papaya Project (FPP) is an applied research project aimed at improving the competitiveness of our industry for the benefit of its members and the broader community. The FPP began in July 2009 and has just been granted another 6 months of funding to continue research activities. Funding for the Fiji Papaya Project is provided through the Australian Centre for International Agricultural Research (ACIAR) in partnership with the Secretariat of the Pacific Community (SPC), NWC, KSF and the Fiji Ministry Of Agriculture (MOA).







# Research Update

## Private nurseries invest in breadfruit trees—farmers benefit

Fiji's developing breadfruit industry has received a boost as private sector nurseries begin investing in breadfruit trees. The Pacific Breadfruit Project (PBP) has over the past two years developed a breadfruit planting material supply system working with villages in the area of Natewa on Vanua Levu. This system involves the purchase of root suckers direct from the farmers or through a consolidator, shipment by boat to Viti Levu and then potting up in a nursery. Logistics of bringing material have been shortened to 3 days opposed to 7 days and the quality of the planting material has improved considerably as has the survival rate of the root suckers.

Private sector nurseries are now taking advantage of this system and have begun sourcing their own root suckers with the assistance of the PBP. To date, over 3000 root suckers have been sourced by private nurseries in Sigatoka, Nadi, Lautoka, Ba and Tavua. The average survival rate for these root suckers has been 60% and a total of over 300 trees have been sold direct to farmers and there are approximately 1600 available for purchase. The selling price for a potted breadfruit tree is determined by the nursery owner and ranges from \$10—\$25 per tree. Most of these private nurseries focus primarily on vegetable seedling production and this diversification provides them with a way of spreading their risks and accessing new clients.

This development now creates opportunities for farmers to source high quality breadfruit trees of preferred varieties from a nursery close to them. This development also creates an opportunity for the Fiji Ministry of Agriculture (MOA) or development projects to source breadfruit trees for commercial production or food security initiatives. The following nurseries currently have high quality Bale kana breadfruit trees available for sale:



A nursery worker stands beside the recently planted breadfruit root suckers at All Seasons nursery in Tavua.



Breadfruit trees ready for sale at Prakash Chandra's nursery on Johnson Rd, outside of Lautoka. Nurserymen like Prakash see diversification into fruit trees as a critical step in sustaining their small nursery business.

Nusery	Location	Phone contact
All Seasons Nursery	Tavua	9273826
Prakash Chandra	Lautoka	8663717
Bula Agro Nursery	Nadi	9963303
Yeshwant Kumar	Sigatoka	9305826
Jai Ram Khelawan	Ba	8614826

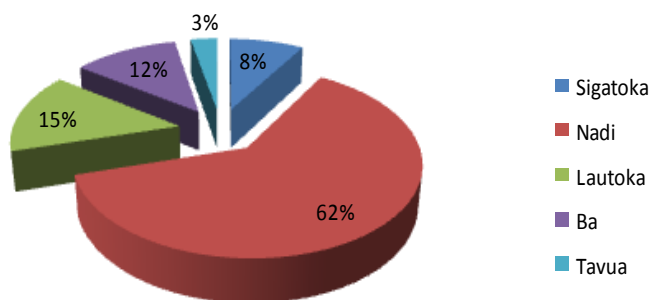
# Breadfruit diversity at MOA research stations gets recognition

The Fiji Ministry of Agriculture (MOA) has collected approximately 18 unique breadfruit varieties over the years and has established them at three research stations: Legalega (Nadi), Nacocolevu (Sigatoka) and Seaqaqa (Labasa). These breadfruit collections have been further expanded through tissue cultured breadfruit trees supplied to MOA by the Secretariat of the Pacific Community Centre for Pacific Crops and Trees (SPC Ce-PACT) through the Pacific Breadfruit Project.

This breadfruit diversity in different locations has the potential to provide researchers and farmers with a wealth of information and possibly stock material for propagation. The potential benefits of this diversity have not been realised due to a lack of proper variety characterisation, tagging and collection mapping. Through the PBP, MOA research division and project staff have been working to characterise all of the breadfruit trees in line with the “FAO-IPGRI multi-crop passport descriptors”. This characterisation work is complete and is currently being combined with accurate orchard maps for each of the research stations that will provide staff and visitors with a ready access guide to the breadfruit germplasm on each research station.

## Breadfruit orchards expand in Fiji’s western division as farmers invest in the future

**Commerical Breadfruit Orchards Distribution (acres)**



A total of 27 farmers have invested in breadfruit as a commercial crop. All of these farmers have planted at least 50 trees (one acre) and are following the recommended package of practices provided by the Pacific Breadfruit Project and NWC Extension team. A majority (62%) of the acreage is located in Nadi which is in close proximity to many exporters, NWC treatment facility and the international airport.

**Commercial breadfruit orchards established**

Area	# of farmers	# of trees	Acreage
Sigatoka	3	140	2.8
Nadi	14	1023	20.46
Lautoka	5	240	4.8
Ba	4	197	3.94
Tavua	1	50	1
Total	27	1650	33

## Project Overview

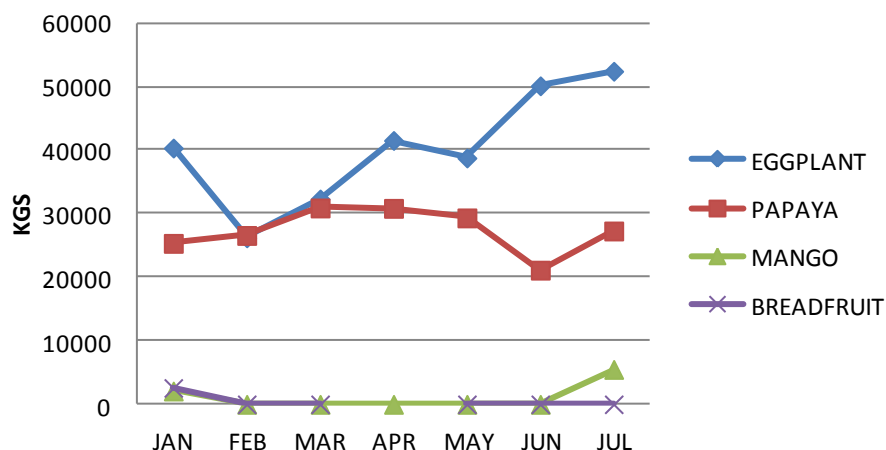
Established in May 2011, the four-year Pacific Agribusiness Research and Development Initiative (PARDI) project, “Developing commercial breadfruit production systems for the Pacific Islands”, aims to assist small-holder farmers to move to growing breadfruit as a commercial crop. The first stage of the project will deal with commercial orchard production and post-harvest handling for fresh exports. The second stage will deal with commercial processing of breadfruit. The project is funded by the Australian Centre for Agricultural Research (ACIAR).





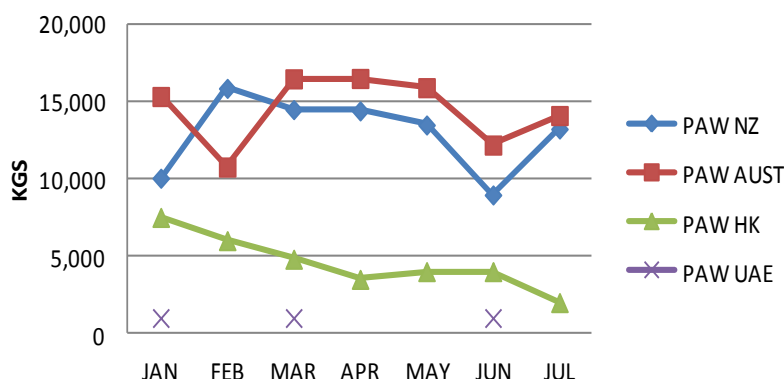
# Export Update

**NWC Exports (Jan - July 2014)**



Source: NWC

**Fiji papaya exports (Jan - July 2014)**



Source: NWC

**Fiji Papaya Exports (Jan—July 2014)**

	2014	JAN	FEB	MAR	APR	MAY	JUN	JUL
PAW NZ		10,028	15,830	14,459	14,375	13,465	8,948	13,200
PAW AUST		15,305	10,750	16,445	16,470	15,875	12,170	14,070
PAW HK		7,500	6,000	4,800	3,500	4,000	4,000	2,000
PAW UAE		1,000		1,000			1,000	
<b>TOTAL</b>		<b>78,841</b>	<b>58,784</b>	<b>69,022</b>	<b>75,872</b>	<b>72,110</b>	<b>76,247</b>	<b>87,200</b>

Source: NWC

## NWC Research and Extension Partnership Committee:

