Fiji Experience with fresh breadfruit exports

NATURE'S WAY COOPERATIVE

Protocol for fresh exports to New Zealand - 2000

- Focus was on controlling fruit fly.
- Worked carried out by Koronivia Research Station, Quarantine and NWC.
- Commodity development framework

Market research (2000 – 2004)

Nature Way Cooperative (Fiji) Ltd.
2001 Strategic Plan 2002-2006.

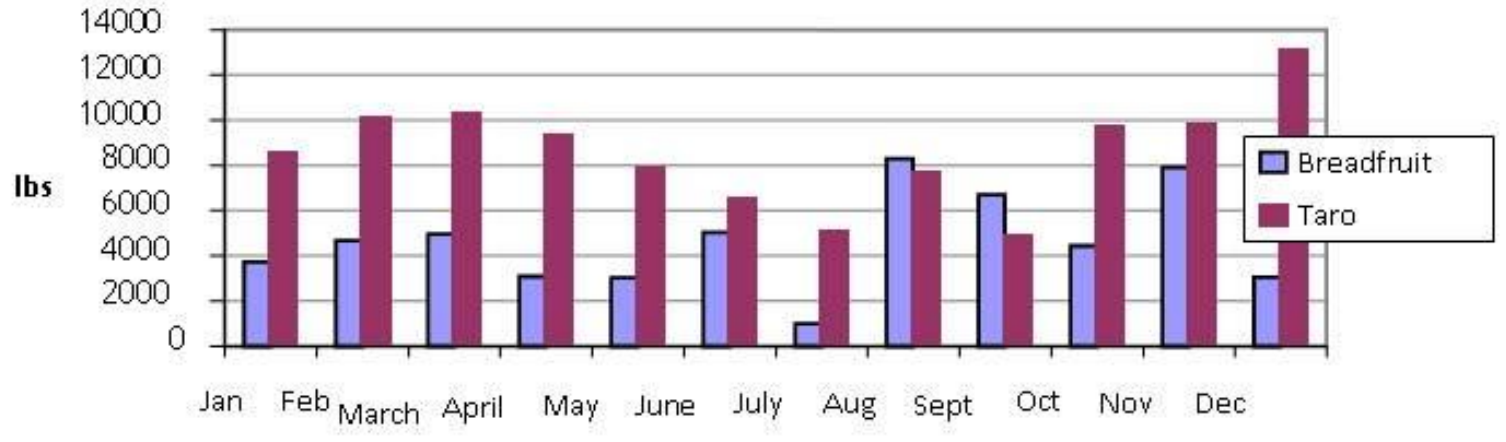
Grandison Gordon
2002 Report on Fresh Breadfruit Exports to New Zealand. South Pacific Trade Commission, New Zealand.

Grandison Gordon
2004 Market Potential for Fijian Breadfruit Exports to New Zealand. A report prepared for the Pacific Enterprise Development Facility/International Finance Corporation. Sydney.

Market research (2000 – 2004)

In 2001 breadfruit sales in Samoa were approximately 40% of taro sales. On this basis it could be concluded that the potential market for fresh breadfruit in New Zealand is around 40% of taro exports to that market.

Fig. 1: A comparison of breadfruit and taro sales at the Fugalei market (monthly average of Friday availability)



Refining the export supply chain (2003-2005)

Public, private partnership driven by NWC

Exporter, farmer involvement

Applied research

Farmer friendly training materials

Refining the export supply chain (2003-2005)

Refining the export supply chain (2003-2005)

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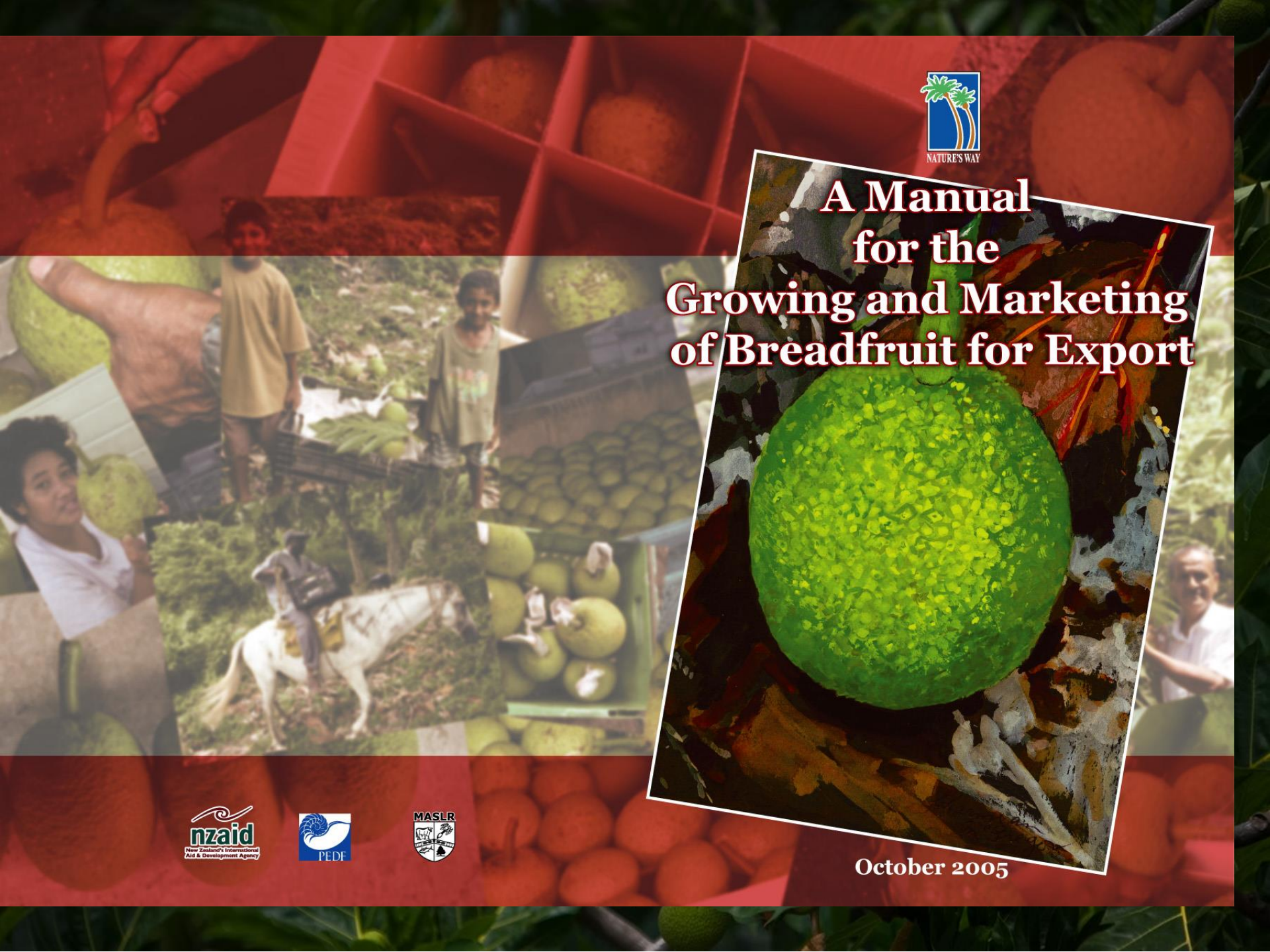
Refining the export supply chain (2003-2005)

National Breadfruit Conference at Legalega Research Station (2005)


NATURE'S WAY
A Manual
for the
Growing and Marketing
of Breadfruit for Export
nzaid
New Zealand's International Aid & Development Agency
PEDF
MASLR
October 2005

FIJI BREADFRUIT QUALITY GUIDELINES

FOR FRESH EXPORT


ROT


DEEP BRUISE


SUNBURN


SURFACE BRUISE

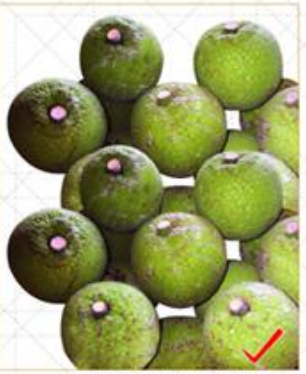
VARIETIES

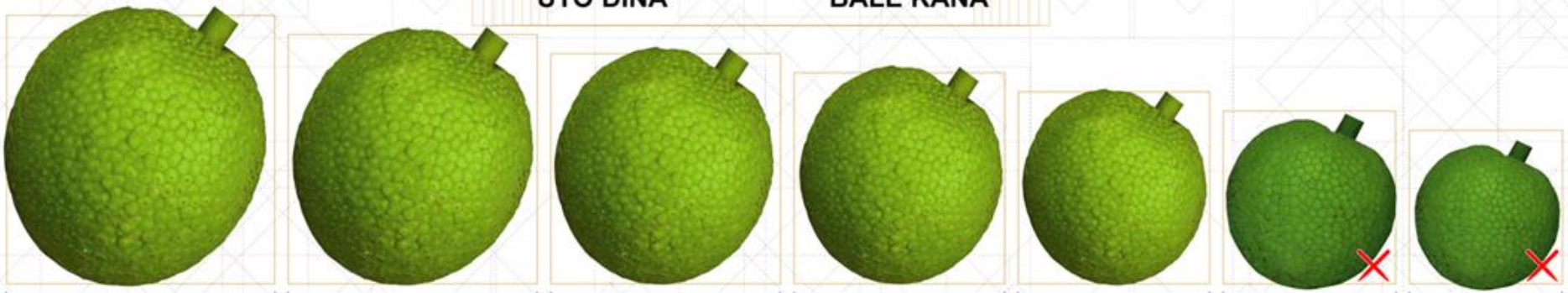

UTO DINA


BALE KANA


BROWN STEM


MEALY BUG


STEM LENGTH

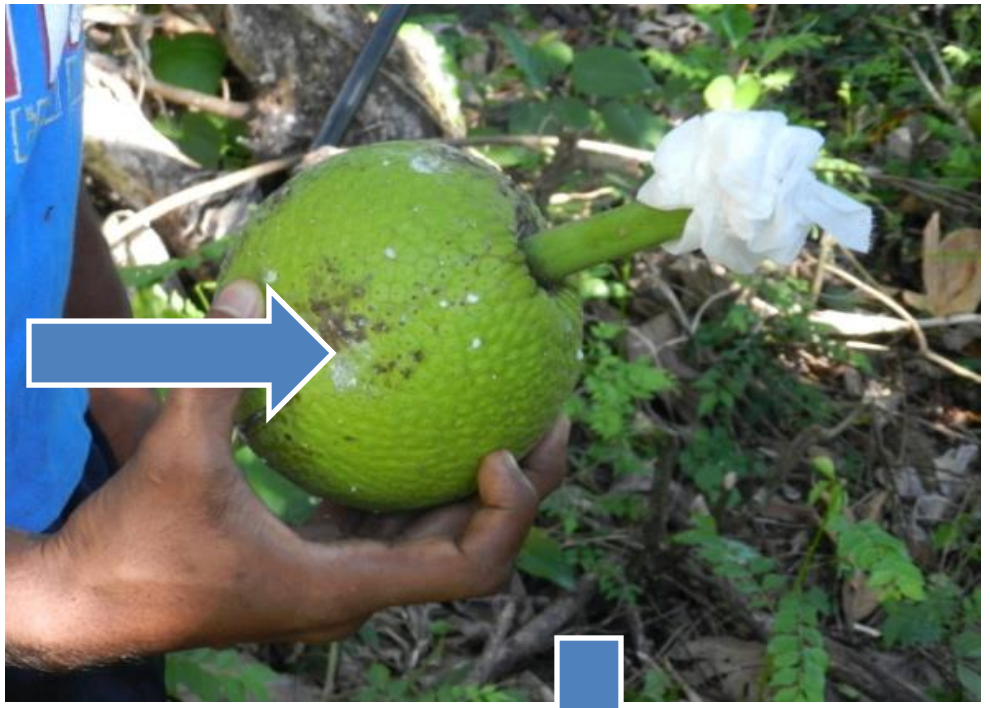



SAP STAIN


PACKAGING

Produced by Natures Way Cooperative (Fiji) Ltd in collaboration with the Secretariat of the Pacific Community and Fiji Ministry of Agriculture Sugar and Land Resettlement with funding assistance from New Zealand AID

Fiji Fresh Export Supply Research (2011 - 2015




Yale
Yale


7719 R7
BROADFRUIT
12KG

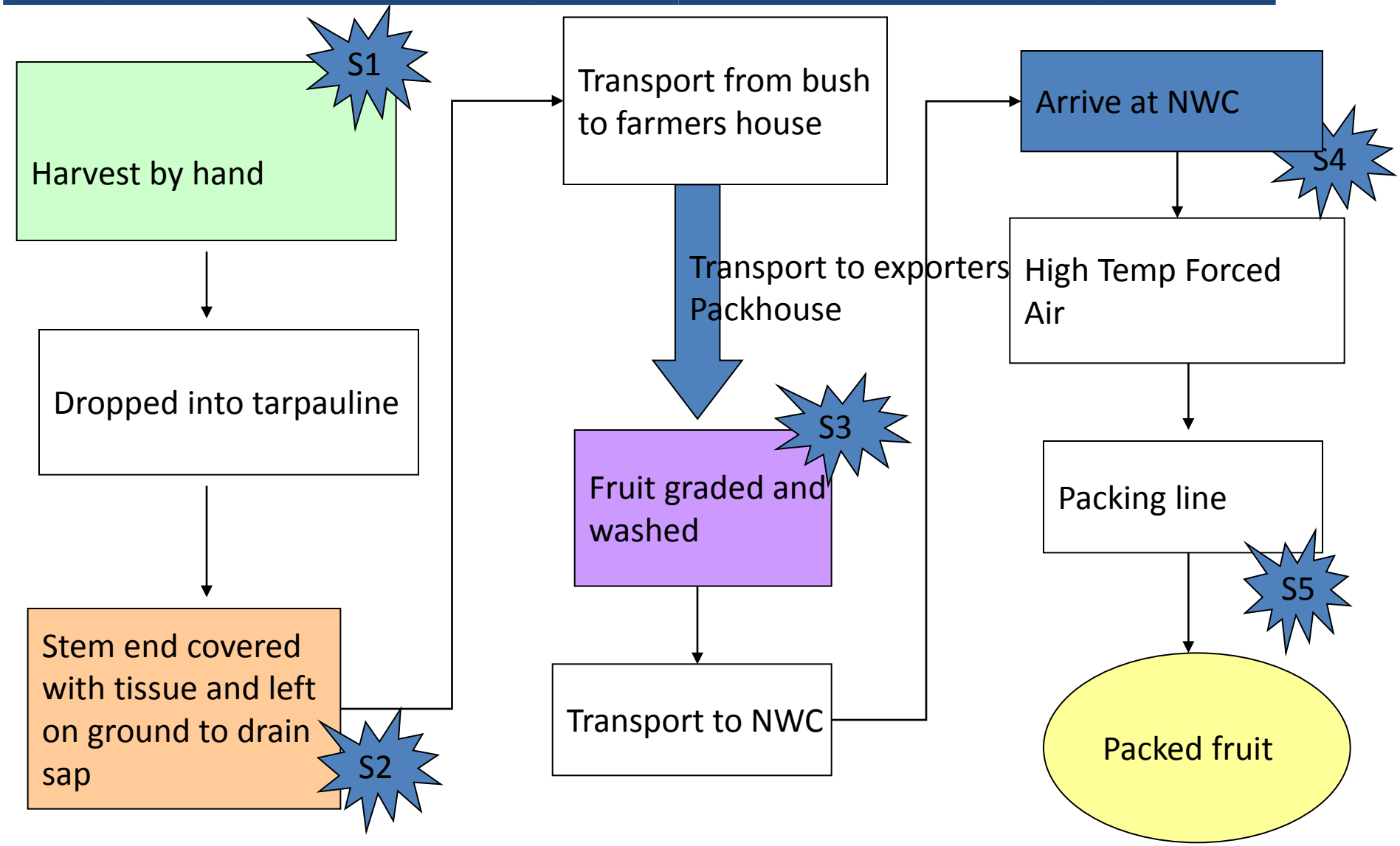
Issues with current chain

Physical damage and sap stains

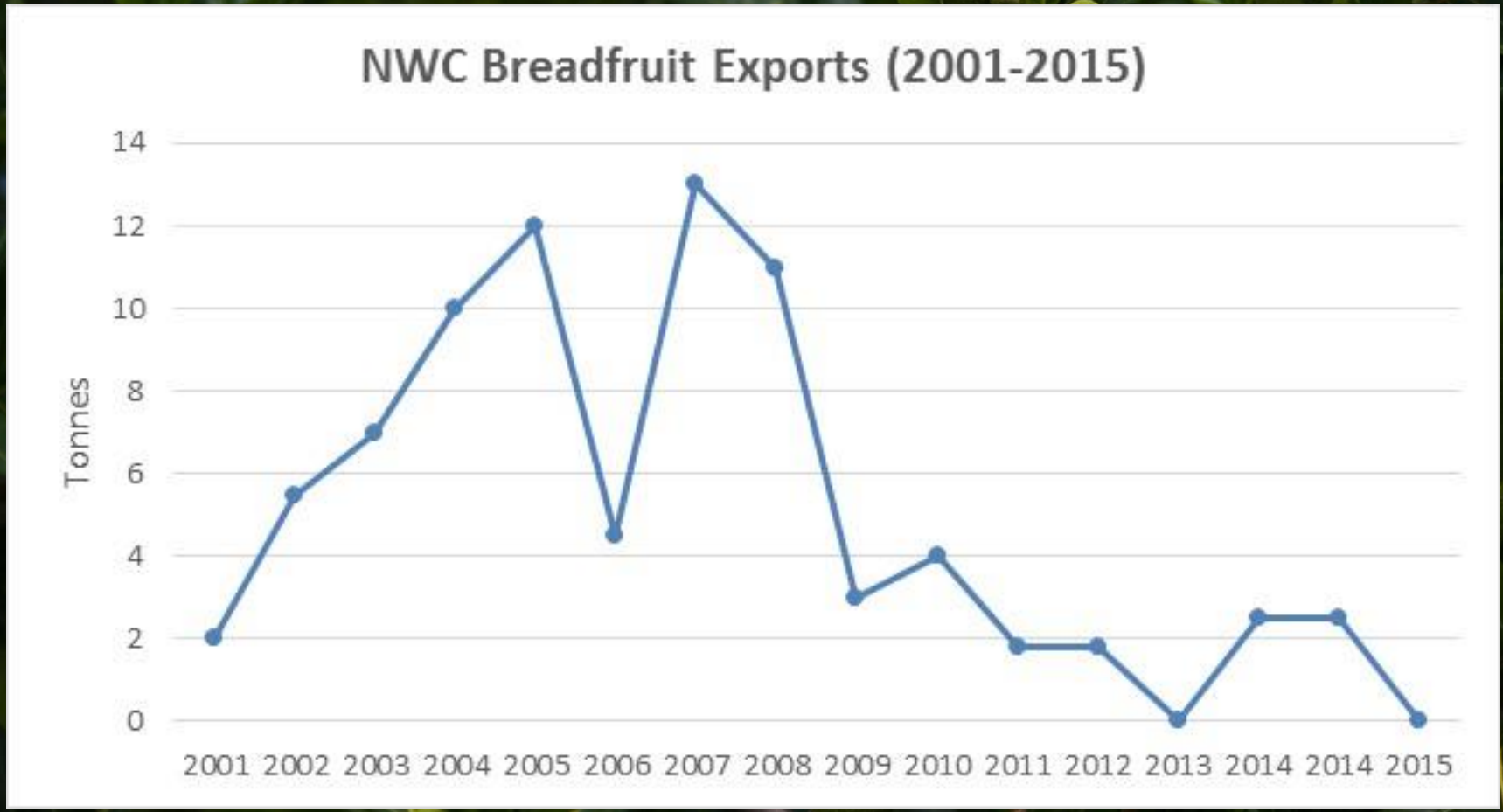
Research questions

1. Where is it occurring?
2. How big of a problem is it?

Supply chain assessment for causes of physical damage – National Exports



Despite all of this work – export performance has been very disappointing




Continuity of supply is the major constraint to commercial breadfruit industry development

Other constraints facing the fresh breadfruit exports in Fiji

- Seasonality of breadfruit
- The stringent quarantine requirements to carry out numerous sprays for fruit flies (compliance and quality issues)
- High cost and capacity constraints of airfreight (sea freight will be required)

Conclusions

- There is a large market for fresh breadfruit in New Zealand other accessible markets (Australia & US)
- Supply must come from commercial orchard production
- Quarantine issues such as bait spraying must be addressed
- Research on breadfruit varieties and extending season for the production and supply
- Obtaining market access for Australia and US


Vinaka
21.01.2012 04:58

Breadfruit Postharvest / Product Development Research

By the

Scientific Research Organisation of Samoa (SROS)

"Positive thinking achieves positive results"

Pacific Breadfruit Roundtable – Tonga September 2016

SROS Brief Background

• Established by an Act of Parliament in July 2006

• A Public Beneficiary Body – core funded by Government & reliant on external funding for technical & research projects

•Contribute to national economy and community livelihoods through R & D and value adding to local produce

•Four technical divisions

- •Food Science & Technology (product development)
- •Plant & Postharvest Technologies
- •Environment & Renewable Energy
- •Technical Services (IANZ accredited chemical and microbiological testing services- food safety and nutritional content etc)

Fruit Facts

- Seasonal, perishable fresh produce
- Climacteric- high respiration rates upon ripening
- Inverse relationship between respiration & postharvest-life
- Fruits abundant and under utilised
- Export by air not economical – low volumes & costly

SO WHAT WE NEED for postharvest research is..

- Preservation method to prolong fruit shelf life without affecting quality to allow exportation by sea

Postharvest Research

Manipulation & Controlling of atmosphere in direct contact with food

- -Concentrations of gases
  - -O2- lower levels slow respiration
  - -CO2, - higher levels slow respiration & prevents growth spoilage microoganisms
  - N- slow ripening
- -Temperature –controls respiration & other metabolic reactions
- -Humidity- controls transpiration

- -physical and chemical treatments (adjunct technology)

Method may involve manipulation of only one or combination of two or all three factors

Project Objective

- Objective
  - To prolong the keeping quality of breadfruit by controlling the atmosphere in which it was stored, to allow economical export by sea
- Aim
  - slow loss of quality or spoilage breadfruits
    - by determining the optimum storage conditions
      - Gas mix, temperature, packaging
      - harvesting conditions & pre-treatment before storage

Experiments focused on..

- The effect of temperature (25oC & 14oC) on the postharvest quality of Breadfruit
- To study the climacteric pattern of respiration
- The effect of precooling conditions – using water, ice and air
- The effect of shrink wrapping
- The effect of leaving or removing stem when harvested
- Varietal differences – Maafala and Puou

ACIAR Fruit Tree Project

- **Provide funding to continue and complete the initial postharvest studies for breadfruit**
  - **Do more replicate studies , multi-locational collection and cover both islands**
- **Also study the following:**

- Systematic studies on the effect on rot development at low temperatures in conjunction with fungicides that are currently acceptable in New Zealand and Australia.
- Determine the extent of sugar accumulation during low temperature storage and reduction. Conduct consumer testing with non-Polynesians to determine whether there is a different taste acceptability pattern.
- -Assess whether fruit are comparatively more prone to rotting when harvested during the wet season compared to the dry .

Target for Postharvest shelf life…

- Minimum shelf life needed -28 days
  - Harvesting based on shipping schedule
    - harvest, pack, -7 days max
    - Holding time at wharf –max 3 days
    - Shipping time – 10 days max
    - Clearance – 3 days max
    - Marketing -5 days

    - If not sold in time –all goes to waste!

Postharvest laboratory