

# UNCTAD GREEN TRADE PROJECT NATIONAL VANILA WORKSHOP Port Moresby

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- NATIONAL AGRICULTURAL RESEARCH INSTITUTE
- Presenter:

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NCD.





# National Agricultural Research Institute (NARI)

- One of NARI's functions is to provide analytical, diagnostic and advisory services in the discipline of agricultural chemistry from its Professor Kola Chemistry Laboratory, Kila Kila, NCD.
- The lab. test techniques have been accredited since 2015
- The lab is equipped with modern testing equipment such as Inductive Coupled Plasma-MS (ICPMS) for trace metals, & High Pressure Liquid Chromatography (HPLC) for vanillin, caffeine, aflatoxin, kavalactone..
- The lab has 9 technical personnel with an annual turnover of 10,000 analysis.



# Analytical & Diagnostic Services

- **Water & Environmental Testing** for water quality conformances, minerals/nutrients and trace/heavy metals for contaminations
- **Soils Testing** – assess soil fertility assessments
- **Plant Tissue Analysis**- to assess nutritional status
- **Food and Natural Products** – Proximate analysis on vanilla, pyrethrum, kava and other food, feed and natural product are carried out in addition to the routine soil and plant leaf sample analysis. assess quality attributes, chemical composition etc.



## Operational Support

- The laboratory services is client focused.
  - Private Sector
  - Public Sector/Govt Agencies
  - NGO
  - Farmers
- Operational cost of 60 - 70% laboratory fees.
  - Maintain full operational status of testing equipment
  - Consistent Supply of Consumables
  - Maintain consistency of work inflow –to sustain and balance the operational cost



# Quality Attributes of Vanilla

## Physically Qualities:

- Long & fleshy, free from scars & blemishes
- Dark brown to black colour,
- Glistering (oily) in appearance
- Strong aroma/flavor &
- Moisture contents 30 – 40 %

## Chemical Qualities:

- Approximately 85 % of volatiles (aroma / flavor) is Vanillin.
- 25 % sugar
- 15 % fats
- 15 – 30 % cellulose
- 6 % minerals



## Vanillin Contents

<u>Country</u>	<u>Vanillin (%)</u>
Caribbean	1.7
India	2.0
Indonesia	2.75
Madagascar	2.4
Mexico	1.75
PNG	1.8
Sri Lanka	1.5
Tahiti	1.7
Uganda	2.2



## What Tests Can be Done

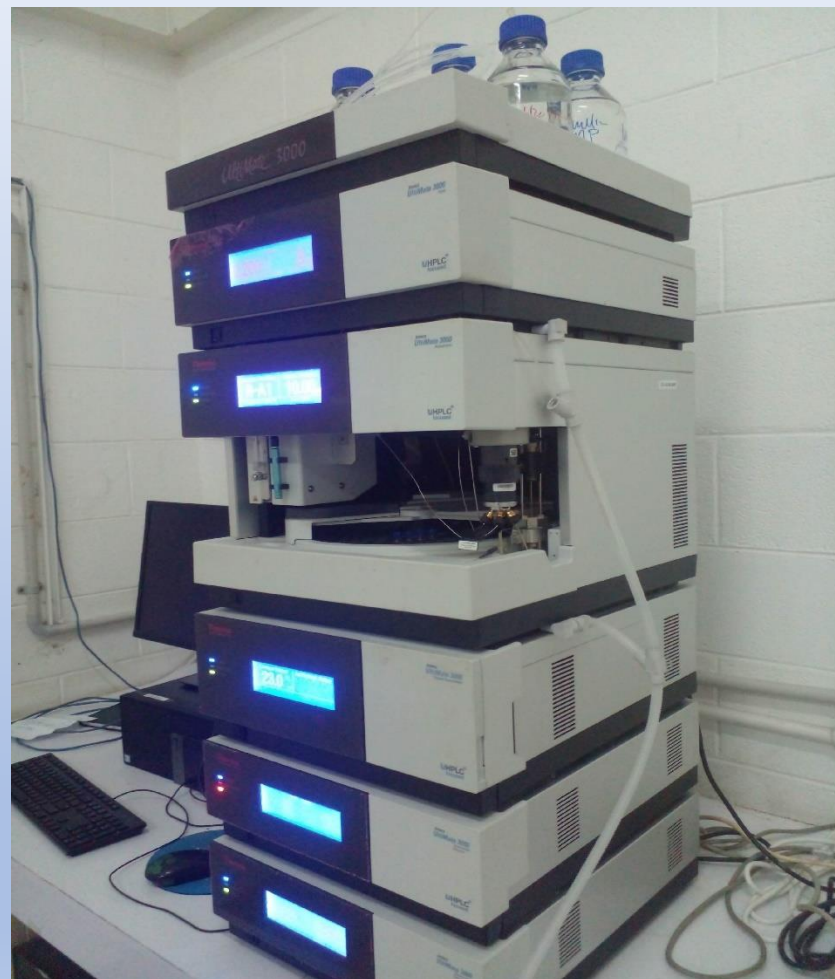
- Moisture Contents
- Vanillin
- Colour
- Fats & Oils
- Minerals & Metals
- Total Plate Count
- Capacity for other tests on demand



# Laboratory Capabilities

## Chemical nutrient compositions

- Amino Acids
- Vitamins
- Sugar, carbohydrate and organic acid analysis
- Aflatoxins in dried nuts
- Vanillin, Capsaicin, kavalactones, Cardamon, Carotein,



**High Pressure Liquid Chromatography (UHPLC)**





# Laboratory Capabilities

Inductive Coupled Plasma MS.(ICP MS)  
Measure minerals, trace metals



TEAM OF YOUNG CHEMIST TO SERVE



THANK YOU