



AUTOMATED HOT WATER TREATMENT for Improved Quality and Shelf Life of Mangoes

PCIEERD-DOST 4TH ANNIVERSARY

“Juana Invest? Reaping the Returns from R&D”

EDSA Shangrila Hotel, Ortigas Center

27 June 2014

**Developers: Tom Ubiña, Willen Manzanas, Ric Ascaño,
Samuel Franco, Glicería Pascua, & Ma. Luisa Gabriel**

MMSU-COE | AHWT Project



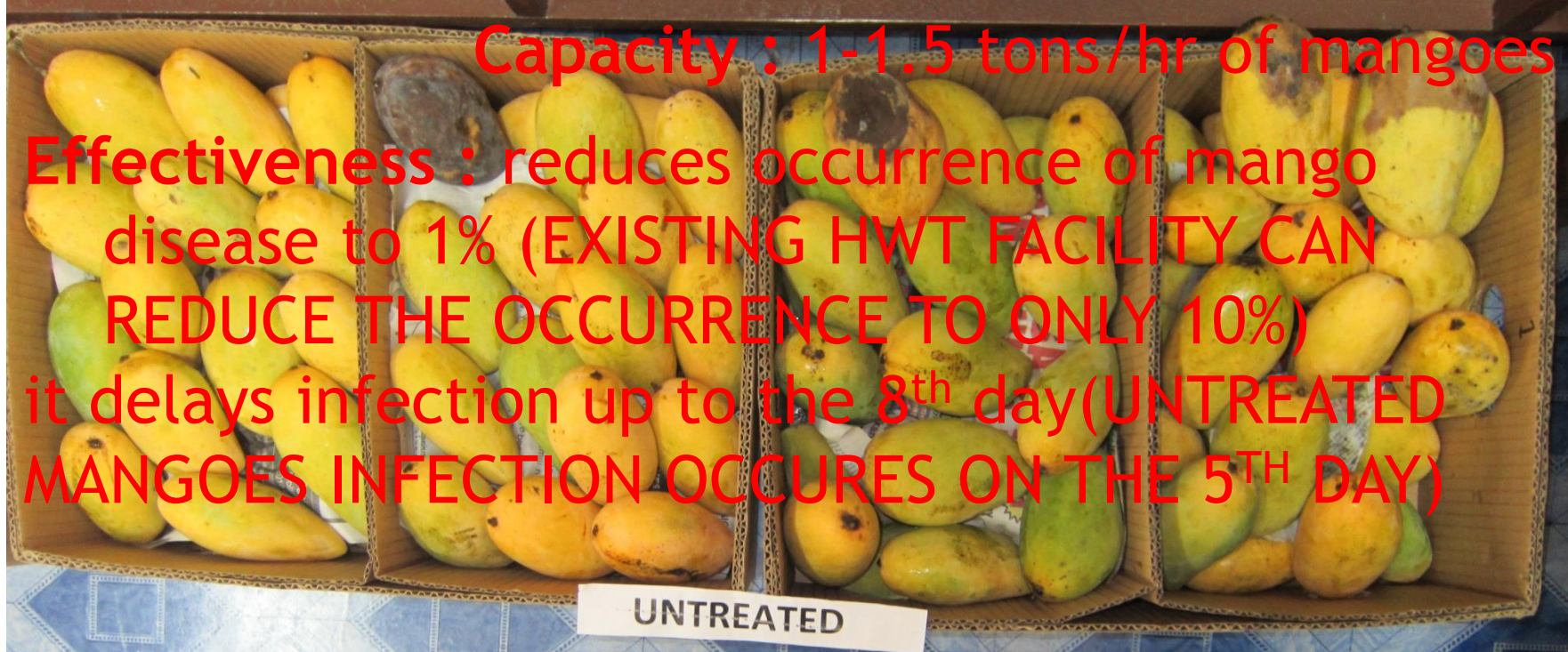


The AHWT

The AHWT is a continuous-type machine developed to ensure uniform treatment of mangoes and facilitate easy operation.



It employs a simple fuzzy logic control (FLC) to ensure constant temperature and precise duration of immersion with the least amount of energy to be used.

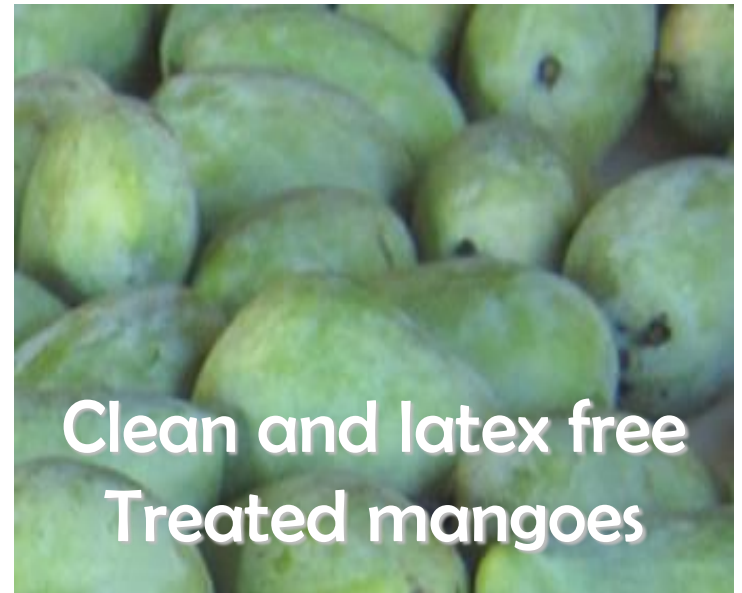




Immature mangoes FLOAT during treatment



**Unclean and latex laden
Untreated mangoes**



**Clean and latex free
Treated mangoes**



**THE AHWT IS BEING
USED BY ILOCOS
NORTE MANGO
STAKEHOLDERS
ASSOCIATION FOR
TWO YEARS ALREADY**

THE AHWT HAD BEEN PRESENTED IN SEVERAL FOR A

- MEDIA FORUM (PANGGASINAN & ILOCOS NORTE)**
- SEVERAL TECHNOLOGY FORUM (NORTHERN & CENTRAL LUZON, ZAMBALES, PALAWAN)**
- WON 1ST PLACE DURING ILARRDEC SYMPOSIUM, 2012)**
- WON 2ND PLACE DURING NSAARRD, 2013**
- FEATURED IN SEVERAL LOCAL PRINT AUDIO, VISUAL MEDIA & ONLINE NEWS**

**DOST-TAPI WILLING TO FINANCE A
PRE-COMMERCIALIZATION STUDY**



balita

Linking Filipinos with news since 1994

[HOME](#)[ABOUT](#)[ARCHIVES](#)[FOREX RATES](#)[PRIVACY](#)[COPYRIGHT](#)[CONTACT](#)[National](#)[Provincial](#)[Foreign](#)[Features](#)[Agri-Business](#)[Business/Economy](#)[Sports/Entertainment](#)

ZALORA
PHILIPPINES

▶ SEE MORE



ESPADRILLES

Mango treatment gadget developed for producers, exporters

April 17, 2013 4:21 am

DAGUPAN CITY, April 16 — An inventor-developer has showcased his invention, an Automatic Hot Water Treatment (AHWT) for mangoes, which can save a lot of mangoes from being rotten and consequently preserve their freshness for many days.

Thomas Ubiña, an engineering professor at the Mariano Marcos State University (MMSU) in Batac, Ilocos Norte, said the mechanical gadget is now being initially used by a private mango cooperator in Ilocos Norte

UPDATES

- The Philippines may soon ship to the United States fresh mangoes from others parts of the country other than Guimaras Island, according to Agriculture Secretary Proceso Alcala (The Philippine Star)
- Bright prospects for export of Philippine Mangoes to Europe according to European Chambers of Commerce in the Philippines (The Philippine Daily Inquirer)

AHWT need to be
COMERCIALIZED
NOW!!!

Thank you!!!

Thomas D. Ubiña

Chief, MMSU Center for
Innovative Materials in
Emerging Applications

tndconcepts@yahoo.com