Current status of bitter gourd production and marketing in Asia and market potential of bitter gourd as a functional vegetable

Ric M. Reyes
Product-Market Combination Manager
Real Farmer Story - India

• Planted Palee bittergourd in 4 acres
• Yield per acre= 21 tons
• Sold produce at average price of 8 rupee per kilo
• Gross income per acre = 168,000 rupees (US$2745)
• Cost of production =40,000 rupees or US$653 (includes labor, seeds, fertilizer, chemicals)
• Net Income per acre = 128,000 rupee (US$2,092)
• 4 acres net income = 512000 rupee (US$8,367)

Rama Murthy and son Rama Murthy Jr. of DB Phur, Bangalore. Bittergourd growing is main source of income.

1US$=61.19 rupee
Real Farmer Story - Myanmar

- Myanmar undeveloped market
- EWS introduced Palee F1 in 2009
- Farmers are impressed on good fruit setting, disease tolerance and fruit quality
- Farmer earned gross income of 900,000 kyat (roughly US$1007) per acre
- He spent 350,000 kyat (US$390) per acre
- Net income per acre = 550000 (US$615)

Farmer U Soe Oo of Hmawbi, Yangon Province, Myanmar and his Palee F1

1US$=894 kyat
Farmer Bamrun of Phatumthani, Thailand in his “Kiew Yok 16” (KY 16) bittergourd.

- Thai farmers like KY 16 prolificacy, early maturing ability and fruit quality
- Farmer Bamrun planted 2 cans seeds
- 10 times harvesting at time of visit
- Ave yield of 1200 kg per picking
- Sells produce at Talad Thai market at 12 bhat per kilo
- Equivalent to 14400 bhat per harvest (US$450)
Real Farmer Story – Sri Lanka

- Farmer H.B. Nickramsiga and wife Vivian – Ulpathagana, Sri Lanka
- Rice farmer, tried bittergourd in 500 sqm
- EWS provided technical assistance
- 1st 5 harvest yielded 2 tons sold at 50 rupee/kg
- Bittergourd is more profitable than rice

1US$=131.2 sri lankan rupee
Real Farmer Story - Philippines

- Fisherman turned vegetable grower
- Planted Mestisa F1 bittergourd last Nov 2013 in ¾ ha
- Mestiza is tolerant to NMK(polero virus), big uniform class A fruits
- To date made 23 pickings
- Yielded 32,500 kilos fruits
- Sold produce at an average price of Ps43 per kilo
- Gross Income =P1.2 mio (US$27,272)
- Production cost =Ps0.15Mio
- Net Income =PS1.0 Mio (US$22,727)

Dennis Pesigan of San Juan, Batangas. Bittergourd growing became a family affair, his wife takes charge of marketing produce in wet markets while he focus on production.
What does this tell us...

Bittergourds transforms lives...
Concentrated in ASIA
Annual Bittergourd Cultivation in ASIA

Total HAS = 340,000

Bulk of production

India 31%
China 22%
Pakistan 9%
Vietnam 6%
Philippines 4%
Indonesia 2%
Thailand 1%
Others 25%
Diversity of Cultivated Bittergourd Varieties
Indian Types

Grown in

- India
- Pakistan
- Bangladesh
- Sri Lanka
- Myanmar
- Nepal
- Saudi Arabia
Chinese Types

Grown in **China**, Taiwan, Malaysia, Mexico, Honduras, Dominican Republic, USA
Vietnam Types

- Shiny green, warty

Grown in Vietnam, Cambodia, Malaysia
Philippine Types

Long smooth cylindrical shape 30-35cm length, 5-6 cm diameter, 330 gm ave. fruit weight

Short smooth spindle shape 10cm length, 4cm diameter, 70 gm fruit weight
Thai Types

Grown in Thailand, Myanmar, Cambodia, Brunei

25-30 cm
Light green, ridge warty
BITTERGOURD GROWING PRACTICES
selected countries
• Key growing areas: Maharashtra, Gujarat, Karnataka, Andhra Pradesh, Bihar
• Disease problem: PM, DM, viruses
• Technology: F1, drip irrigation

Year Round planting
Mainly in Central Luzon, Southern Luzon, Cagayan Valley, Leyte, South Mindanao
NMK (polero virus) Problem
China

Main growing areas: Guangdong, Sichuan, Guangxi, Hainan, Yunnan
Disease problems: PM, FW, BW, viruses

Greenhouse bittergourd: Shandong, Sichuan, Yunnan (10k)
Indonesia
TRADING MARKETS - BITTERGOURD
• Early 80s mostly OPs, low yield, poor fruit quality
• High input – trellis, chemicals
• High priced crop, farmgate price = US$0.50 per kg
• Simon N. Groot came to Southeast Asia in 1981
• Saw the potential for hybrid development
• Established East-West Seed in the Philippines in 1982 and in Thailand in 1984
• Breeding started – disease tolerance (DM), fruit quality, yield
Early Milestones

• 1985 Jade Star F1 introduced in PH – first locally developed commercial vegetable hybrid in all of Southeast Asia

• 1987 Sae Yid 71 launched in TH – first locally developed commercial vegetable hybrid in Thailand

• 1999 – developed Hybrids 241, 242 became breakthrough products in Vietnam
F1 Hybrids impact

• **Yield Improvement**
  – Good plant vigor
  – Better disease tolerance
  – Better adaptation and fruit setting even in stressful conditions

• **Quality Improvement**
  – Quality fruits preferred by consumers
  – Greater fruit uniformity
  – Extended shelf life

• **Extended growing season**
  – Early maturity/harvest
  – Off-season adaptation
KEY TO SUCCESS

- Quality seeds
- Improved Farming technology
- Distribution and Marketing
  - Good distribution and direct interaction with growers (key to success)
  - Approx. Number of EW sales and promotion staff in SE and S Asia: 700
Marketing Promotion

Farmers Meetings

Field Demo

Personal Calls

Field Tours
Seed Availability and Accessibility
Namamarako (Polero virus in Philippines)

- In 2004, **40% reduction** in bittergourd production
- **NAMAMARAKO** - *Cucurbit aphid-borne yellows virus* (CABYV), a polerovirus in the *Luteoviridae*
BITTERGOURD – Functional Uses

Pills

Juice

Tea (fruits and leaves)
Bittergourd and Herbal Medicine

- WHO forecasted global market for herbal products will be worth US$ 5 trillion by year 2050
- Europe and the US are the 2 major herbal product markets in the world (41% and 20% market share)
- In the Philippines, ampalaya tea and tablet sales (domestic and export) reached Ps400Mio (US$9Mio) in 2013.
- Chamber of Herbal Industry of the Philippines CHIPI with 300 members/manufacturers sees sustained growth
Different functions must **work together** to create and maximize value.
East-West Seed is doing its share...

National Pinakbet Cooking Challenge

We would like to invite you for the 1st National Pinakbet Cooking Challenge on Dec 3, 2013, 9 AM – 12 NN at EWS Head office. See You!

Luzon

Visayas

Mindanao
THANK YOU!
Bitter Gourd Project is a not-for-profit project of AVRDC-The World Vegetable Center dedicated to improving the incomes and health of the poor in developing countries—particularly the quality of life of diabetics—through scientific research on bitter gourd (*Momordica charantia* L.).

**Our Mission**

Our mission is to provide innovative products and services that will help increase the income of vegetable farmers, and promote the growth and quality of the tropical vegetable industry.

**Our Vision**

Be the best tropical vegetable seed company in the world.