BAMBOO SHOOTS AS FOOD SOURCES IN THE PHILIPPINES: STATUS AND CONSTRAINTS IN PRODUCTION AND UTILIZATION

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Outline

1. Introduction
2. Status of bamboo shoot
3. Bamboo species for bamboo shoot
4. As FOOD

The healthy food-source
a. As vegetable
b. Peeled bamboo shoots
c. Cyanide content
d. Nutritive value

5. Bamboo recipes
6. Challenges
7. Current Prospects
8. Recommendations
Popularly known before as the “poor man’s timber”, it is now hailed as the “climate change plant” and retaining its famous descriptive line “the tallest grass”.

Wonder Grass
Grass of Life
Shaman of an Ailing Land
Protector of Life

the plant for all seasons with thousand uses
This paper aims to:

1) assess the status and prospects of bamboo shoots as potential food source or as vegetable in the Philippines;

2) enumerate the problems in bamboo shoot R&D and constraints in production and utilization;

3) present some published/unpublished data and observations on shoot characteristics and plantation establishment of some local bamboo species; and

4) document the economic benefits of bamboo shoot farming based on previous studies and

5) Continue promoting the use of bamboo shoots as food source in the Philippines.
Status

- Bureau of Agricultural Statistics
- 2002-2007 - annual average of 7,722 ha of bamboo was harvested for bamboo shoots (BAS 2007).
- Supply of bamboo shoots in the local market in different provinces are mostly from fresh whole bamboo shoot, sliced fresh shoots and cooked sliced shoots.
- Canned bamboo shoots from China and Japan are available in the supermarkets and most food stores in the business district of Divisoria, Metro Manila.
- As of this writing, all bamboo shoots are manually processed and there is no available factory for bamboo shoot processing.
Problems in bamboo shoot R&D and constraints in production and utilization

- only few studies have been done for bamboo shoot research and development (R&D) under Philippine conditions

- Dwindling natural stands = underutilized food source

- Not popular to the new generation of Filipinos

- Most of the work focused on culm propagation, production, harvesting and marketing. As such, with the lack of basic information on shoot characteristics, it will be difficult to formulate a business venture on bamboo shoot production. The lack of funds for basic research on bamboo shoots is also a major reason for the lack of baseline information.
BAMBOO RESOURCES IN THE PHILIPPINES

SYMPODIAL.CLUMPING - TROPICS

MONOPODIAL RUNNING - TEMPERATE

Redrawn from Rojo et al. 2000
(Wong 1995/McClure 1941)
Kawayan Tinik  Bambusa blumeana
Bambusa merrilliana – Bayog
**Gigantochloa levis**

‘Bolo’/’Kawayan-Tsina (Tagalog); Kabolian (Bikol);

‘Patong’/’Botong’ (Bisaya)
Dendrocalamus latiflorus - Machiku
Kayali
Gigantochloa atter
Laak

*Bambusa philippinensis*
Dendrocalamus asper

Giant Bamboo
Bukawe (Tagalog)
Botong (Bisaya)
Patong (Cebuano)
BAMBOO SHOOT MORPHOLOGY

SYMPODIAL CLUMPING - TROPICS

MONOPODIAL RUNNING - TEMPERATE

Redrawn from Rojo et al. 2000 (Wong 1995/McClure 1941)
BAYOG

*Bambusa merrilliana*

LABONG

RABONG

DABONG

KAWAYAN TINIK

*Bambusa blumeana*

(Caasi-Lit et al 2010
*Philippine Journal of Crop Science* 35(2): 54-68.)
KILING

*Bambusa vulgaris*

LABONG

LAMBO

LAMBONG

PUWAG

CAMARINES SUR

LAAK

*Bambusa philippinensis*
Bamboo shoots are used as food sources in the past around the Philippines!!!
Gigantochloa  Dendrocalamus  Bambusa
YELLOW/GOLDEN BAMBOO – *Bambusa vulgaris cv vittata*
Kawayang tinik – *Bambusa blumeana*
Bayog (endemic in the Philippines) – *Bambusa merrilliana*
Gigantochloa atter
Kayali

Gigantochloa levis
Bolo

Thyrsustachys siamensis
Thailand bamboo
Laak (endemic) – *Bambusa philippinensis*

Kiling – *Bambusa vulgaris vulgaris*
Giant Bamboo – *Dendrocalamus asper*

Machiku – *Dendrocalamus latiflorus*
Always in the growing shoots

Bitter chemical is called hydrocyanic acid or cyanide (CN).

Cyanide occurs widely in nature and it is even present in human blood at low concentrations (Montgomery 1980).
However, high concentration of cyanide is lethal to humans.

Oral lethal dose for humans ranges from 0.5-3.5 mg/kg body weight (Bradbury and Holloway 1998).
Percent reduction (green bars) in cyanide content of fresh shoots after boiling for 15 minutes from Sta. Cruz Bamboo Plantation. Values for fresh and cooked shoots are cyanide contents in ppm (Caasi-Lit et al 2010 Philippine Journal of Crop Science 35(3): 9-18.)
Percent reduction in cyanide content of fresh shoots after boiling for 15 minutes from Davao Bamboo Plantation.

Values for fresh and cooked shoots are cyanide content in ppm.

Comparison of the cyanide content (pooled means from the two sites) of the three most common bamboo species in the Philippines used as edible shoots

(Caasi-Lit et al. 2010 Philippine Journal of Crop Science 35(3): 9-18.)
Bamboo shoot

Manual Processing (Household Backyard)
BAMBOO SHOOT RECIPES

Traditional food
Lumpiang labong, Dinengdeng na labong
Adobong labong, Bamboo shoot shrimp soup
Guinisang labong, Pickled labong and many more……


Innovative/Creative food products
native delicacies, viands, breads, pastries, desserts, pasta, snacks and beverages

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FilBamboo Initiatives

- Innovative/creative food products from bamboo shoots
Awards
*Grand Prize, Food Category
International Network for Bamboo And Rattan (INBAR) Product Ideas Competition, Shanghai World Expo 2010. One hundred twenty (120) entries from 27 countries participated in the said event.


FILBAMBOO EXPONENTS INC. was established and envisioned as a social enterprise devoted to promoting bamboo in the pursuit of health, wellness, and beauty to address each individual’s needs and care for the environment. The company aims to create sustainable livelihood for rural farming communities in the Philippines. FILBAMBOO manufactures and provides high quality bamboo products (food, beverages, health supplements) through an integrated and holistic approach to propagation, processing, production, sales, and marketing of these products via traditional and non-traditional channels.

ADVOCACIES:
Sustainable Livelihood & Development for Rural/Farming Communities, Alleviation of Hunger & Poverty, Environmental Protection, Health & Wellness.

BAMBOO TRAINING/SEMINARS with ECO-CULTURAL TOURS & COMMUNITY CRAFT WORKSHOPS:
Includes trekking & rafting, river tubing, swimming, videoke, arts & crafts workshops using indigenous materials, mineral make-up demo, massage therapy, healthy bamboo food & beverages, planting of bamboo seedlings, visit to historical sites, etc.
**BAMBU COFFEE & CHIPS**

**HYALURONIC ACID**

- **Bamboo Coffee**
  - 24 Pieces
  - Php 200.00

**BAMIPS**

- **Bamboo Chips**
  - 6 Pieces
  - Php 150.00

**MUDEF**

- **Bamboo Muffins**
  - 6 Pieces
  - Php 250.00

**PRIMEM**

- **Bamboo Puto**
  - 6 Pieces
  - Php 120.00

**Exquisite Bamboo Snacks**

- **Bamboo Banana Muffins**
  - 6 Pieces
  - Php 200.00

- **Bamboo Puto Muffins**
  - 6 Pieces
  - Php 200.00

- **Bambutido Muffins**
  - 6 Pieces
  - Php 200.00

**Rich in Fiber, Essential Vitamins and Minerals**

**For fast delivery order:**
by phone: +63.917.8525538, (632) 332.7685, 302.9568
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Human Nature PQ:
Unit 5F09 Santana Grove, 7022 Sorsogon Drive corner
Dr. A Santos Ave., (formerly Sucat), Paranaque City, Phil.
Tel No.: (632) 828.4572, 400.3665

**Pricelist of Food Products**

- **Bamboo Heart-Shaped Ensaymada**
  - Php 40.00

- **Bambu Pansesal Pack of 6s**
  - Php 24.00

- **Bambu Pan de Coco Pack of 6s**
  - Php 24.00

- **Bambu Puto Pack of 10pcs.**
  - Php 60.00

- **Bambu Seafood Pancit (1 Serving) with Bambu Puto**
  - Php 65.00

- **Bambu Chara (small bottle)**
  - Php 90.00

- **Bambu Puto Pack of 20s**
  - Php 120.00

- **Bambu Suman Pack of 10s**
  - Php 150.00

- **Bambu Banana Loaf**
  - Php 270.00

- **Bambu Suman Pack of 20s**
  - Php 300.00

- **Bambu Carrot Loaf**
  - Php 385.00

- **Bambutido**
  - Php 395.00

- **Bambu Fruitcake (500 gm)**
  - Php 400.00

- **Bambu Coffee 7 in 1 (250 gm per box)**
  - Php 300.00

- **Bambu Chips Party Packs (250 gm)**
  - Php 150.00

- **Bambu Crispy Pusitos**
  - Php 60.00

- **Bambu Pastillas (20 pcs)**
  - Php 150.00

**Gift Box of 6 pieces**

- **Bambu Banana Muffins**
  - Php 200.00

**Gift Box of 24**

- **Bambu Carrot Walnut Muffins**
  - Php 990.00

**Sampler Gift Pack A**

- **Bambu Carrot Walnut Muffin**
  - 40 php

- **Fruity Cup Cake**
  - 55 php

- **Bambua Muffin**
  - 30 php

- **Bambutido Muffin**
  - 45 php

**Sampler Gift Pack B**

- **Bambua Muffin**
  - Php 360.00
BAMSNACKS chips and candies garnered the Grand Prix in the Food Category of the INBAR Ideas Competition in the Shanghai World Expo 2010. Over 120 entries from 27 countries competed in the said event.
Innovative food products

- Bamchips and Bamcandy lines are just a few possibilities in making snacks and sweets using bamboo shoots.
BamSnacks was also featured among the TOP 10 winners in the BiD Challenge 2011 Book “Growing SMEs: Connect. Exchange. Invest.” (Published in October 2012)
Challenges in Bamboo Shoot R&D

- Lack of basic local knowledge and information on bamboo shoots, including identification, shelf life, cyanide content, nutritional properties, etc.

- Lack of information on other local bamboo species with potential shoot quality because shoot production techniques are very specific and species-specific.

- Difficulty in propagating the species which produce quality shoots *Dendrocalamus* spp and *Gigantochloa* spp.

- Limited knowledge and information on site preparation, cultural management practices, suitable bamboo species for food, propagation techniques; harvesting and product development, socio-economics of utilization and marketing.
Challenges in Bamboo Shoot R&D

- Insect pests and diseases of bamboo shoots should be continuously studied especially yield loss assessment.
- Lesser appreciation on the potential of bamboo shoots as a viable small scale industry for rural farmers or even larger business ventures.
- Rampant pilferage of young shoots during the conduct of studies and research implementation.
- Only few researchers are working on R&D of bamboo shoot production which need careful study and a lot of expertise, practice and experience.
- Lack of funding for basic research on bamboo shoots and low priority by funding agency.
Current Prospects in Bamboo Shoot Initiatives

- Growing movement towards innovative, healthy, nutritious and affordable food enriched with bamboo shoots such as native delicacies, viands, breads, pastries, desserts, pasta, snacks and beverages.

- Like-minded individuals, environmental advocates, academe, cooperatives, private organizations, NGOs and public institutions actively take part in sustainable livelihood and inclusive growth for poor & marginalized communities through bamboo agri-ecotourism and training of communities in social entrepreneurship, propagation, plantation management, food safety and quality, good manufacturing processes, fair trade, processing, production, packaging, marketing and development of food products made from bamboo combined with indigenous materials.
Current Prospects in Bamboo Shoot Initiatives

These endeavors are featured online and via multimedia (TV/radio/print), cooking demos, local & international expos/trade fairs/conferences, arts and cultural events, educational scholarships, feeding programs, medical missions, healthcare, peacebuilding initiatives, disaster relief/reduction/risk management and rehabilitation programs.

- Some financial institutions have opened credit facilities for community based-micro and small bamboo enterprises.
- Draft Philippine Bamboo Industry Roadmap has been submitted and stakeholders’ roundtable discussions/consultations are ongoing.
- There is also a huge potential for global Halal certified bamboo shoot food & beverages.
Recommendations

Priorities:

- Continue survey of more species with bamboo shoot potential and evaluation of their cyanide content and nutritive properties, postharvest processes,

- Research and development on off-season bamboo shoot production to cater the supply of bamboo shoots during the dry season

- More funding and investments for bamboo shoot R&D and capacity building of community based- bamboo agri-social enterprises in various aspects of the value chain

- Include bamboo shoot as vegetable crop in agricultural system and disseminate its importance as food and as a climate change crop.

- Approval of the upgraded Philippine Bamboo Industry Roadmap.
“We need to PROMOTE BAMBOO SHOOTS in the context of environmental protection, a holistic approach to GREENER FOOD, A TRULY GREEN ECONOMY BAMBOO FOR A BETTER FUTURE!”

CAASI BAMBOO FARM 2009, TAGUM CITY
Started planting bamboo in mid 1970’s .... AFTER ALMOST 40 YEARS
Only when the last tree has died and the last river been poisoned and the last fish been caught will we realise we cannot eat money.

_Cree Indian saying_
Thank you

BAMBOOLLY YOURS