

## INTRODUCTION

Bittergourd or ampalaya (*Momordica charantia* L.) belongs to the family *Cucurbitaceae*. It is a climbing vine that can grow as long as 5 m. The fruit, young shoots and flowers are used as vegetable. It is high in vitamins and an excellent source of iron and calcium.

It is popularly known to cure infectious diseases and diabetes, good in blood purifier and treat to blood disorder such as blood boils and itching.

## RECOMMENDED VARIETIES

Sta. Rita, Sta. Luciana and Makiling are well performed ampalaya varieties under organic condition.

## SOIL & CLIMATIC REQUIREMENT

Bitter gourd can be planted in a well-drained sandy to sandy loam soils with pH range of 6.0–7.0 is considered optimum.

## CULTURAL MANAGEMENT



**A. Land Preparation.** Plow and harrow the field until pulverized. Make fur rows with distance of 0.60-0.75m and planting beds (0.75m - 0.75m wide). Place plastic mulch in planting beds and dig a hole with a distance of 30cm to 40cm apart where the seedlings will be placed.

**B. Seedling Preparation.** Prepare soil media in seedling trays composed of vermicompost, coir dust and soil (1V:1C:1S). Sow the seeds and after emergence, transfer seedlings in other seedling trays with 1 seedling/hole. Spray Tropical Herbal Nutrient (THN) and Fermented Plant Juice (FPJ) to seedlings once or twice a week.



**C. Transplanting.** Transplanting may be done three weeks after seedling emergence. It must be done early in the morning or late in the afternoon to prevent stress.



**D. Trellising.** Bittergourd grows best with A-type trellis (Figure 2) and table type with vertical trellis. Bamboo poles with 3m x 3m spacing are usually done. Spacing of 1.5 m between rows and 0.75 m between hills is employed.



## E. Trimming and Pruning.

Prune the shoots below the 2 m mark from the base of the main stem. Removal of some lateral shoots at the upper part and lower shoots can also be done to maintain bigger fruits.

## NUTRIENT MANAGEMENT

- Apply vermicompost at a rate of 0.5kg/m<sup>2</sup> - 1kg/m<sup>2</sup> at planting or at 3 days before transplanting. Side dress vermicompost at the start of flowering stage with a rate of 0.5kg/m<sup>2</sup>.
- Spray Fermented Plant Juice (FPJ) and Oriental Herbal Nutrient (OHN) diluted in water to tomato plants once or twice a week until fruiting stage.
- Seaweeds extract may also be applied once a week.
- Goat manure extract and vermicompost extract may also be sprayed to plants once a week from transplanting to flowering stage.



## CULTURAL MANAGEMENT

## COMMON PEST AND THEIR CONTROL

### 1. Fruit Flies.

*Control-* Spray citronella extract mixed with either crushed gumamela leaves, perla soap or okra to serve as sticker.

### 2. Aphids.

*Control-* Spray citronella extract or ginger-chives extract to plants regularly until population is controlled or minimized. Alagao leaves + citronella leaves extract.

### 3. Leafhopper.

*Control-* Regularly spray guyabano seed extract to infected crops. The extract may be mixed with either, perla soap, crushed gumamela flowers or okra to serve as sticker.

## STEPS IN SEED PROCESSING

**1. Seed Extraction & Fermentation-** To extract seeds, ampalaya fruits are sliced along its length and then seeds are scraped-off the fruit. Fruits and seeds are washed in water to separate seeds totally from fruits.



**2. Drying -** After extraction, place the seeds in screens or net bags then air dry it for at least 3 days before sun drying for up to 5 days.



**3. Seed Storage -** Dried seeds may be placed in polyethylene plastic bags, glass bottles/jars for storage. Storage area must have low temperature and low humidity to attain longer shelf life of seeds.



### COST AND RETURN ANALYSIS (for one hectare)

ITEMS	Qnt.	Unit	Rate	Amt. Php
<b>A. Labor</b>				
Land Preparation (Plowing, harrowing, rotavation and furrowing)	2	MD	2500	5,000
Seedling Preparation Sowing includes media mixing	1	MD	300	300
Pricking	2	MD	300	600
Maintenance (watering and foliar spray)	4	MD	300	1,200
Mulching/Basal compost	10	MD	300	3,000
Transplanting	10	MD	300	3,000
Trellising and Training	15	MD	300	4,500
Spot weeding/ pathways (grass cutter)	10	MD	300	3,000
Fertilizer Preparation (Manure & FPJ)	3	MD	300	900
Botanical Concoction Preparation	2	MD	300	600
Ameliorant Application	10	MD	300	3,000
Concoction Foliar Spray	10	MD	300	3,000
Irrigation	30	MD	300	9,000
Harvesting	20	MD	300	3,000
Seed Extraction (cleaning and drying)	20	MD	300	6,000
Seed sorting and packaging	5	MD	300	1,500
<b>Sub Total</b>				<b>47,600</b>

Legend:

MD = mandays, kg= kilogram, pcs=pieces, ltr= liter

ITEMS	Qnt.	Unit	Rate	Amt. Php
<b>B. Supplies and Materials</b>				
Seeds (OPV)	2	kg	5,000	15,000
Molasses	50	ltr.	11	550
Coir dust	3	sacks	50	150
Garden soil	3	sacks	50	150
Vermicast/ Organic compost	3	sacks	450	1,350
Seedling Tray	50	pcs	50	2,500
Netbags, crates & knives				5,000
G.I Wire	50	kg	60	3,000
Bamboo pole	300	pcs	10	3,000
<b>Sub Total</b>				<b>30,700</b>
<b>C. Contingencies (10%)</b>				<b>7,830</b>
<b>TOTAL COST</b>				<b>86,130</b>
<b>Gross Income</b>				
Seed Yield=100 kg Php3,000/kg				<b>300,000</b>
<b>Net Income (P)</b>				<b>213,870</b>
<b>ROI %</b>				<b>248%</b>

#### Credits

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## ORGANIC AMPALAYA SEED PRODUCTION

