DEPARTMENT OF AGRICULTURE
Regional Field Office No. 02
Tuguegarao City, Cagayan

PATOLA

PRODUCTION GUIDE

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This Publication is a project of the **Department of Agriculture, Regional Field Office No. 02, High Value Crops Development Program.** It contains the most recently available and locally adaptable technical information on **Patola Production** in Region 02.

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INTRODUCTION

Patola is a tropical member of the *Cucurbitaceae* family. It is an annual vine with tendrils and large, cylindrical fruits that are edible when young.

The matured, dried fruit consists of a hard shell surrounding a stiff, dense network of cellulose fibers. The cellulose fiber is called luffa or loofah sponge which is being commercially manufactured as body scrub.

Patola contains nutrients such as dietary fiber, Vitamin C, ribloflavin, zinc, thiamine, iron and magnesium. The juice is a natural remedy for jaundice. The leaves are applauding locally in splenitis, hemorrhoids and leprosy. The juice of the leaves is also used as an external application to sores and bites of venomous animals.

ADAPTATION

Soil and Climatic Requirements

Patola can be grown throughout the year in rainfed and irrigated farms with soil that are well-drained and high in organic matter.

This crop is usually planted in the months of June to September during the wet season and February to May during the dry season.

Varietal Selection

There are two types of patola: the angular or ridged type *(Luffa acutangula)* known as local patola and smooth type (*Luffa cylindrical*) called as patolang kastila or banglo.

For better yield, select varieties of patola that are adaptable in the local condition and with market preference. Varieties of patola and their desirable characteristics are listed in Table 1.

Table 1. Recommended Varieties of Patola Adapted in Region 02

Variety	Maturity (DAP)	Yield / MT/ ha.	Features
Hermosa F1	25-40	20-25	Highly fruit bearing and better tasting fruit.
Hercules	40		Excellent fruit quality and very good field performance, resistant to diseases and adverse condition.
Tagalog Native			

CULTURAL MANAGEMENT PRACTICES

Land Preparation

Prepare the field thoroughly to obtain good crop stand and optimum yield. Plow the field at a depth of 15-20 cm 2 - 3 times at one week interval to prevent growth of weeds. Harrow every after plowing to pulverize and level the field. A well-pulverized soil promotes good soil aeration and enhances root formation. Make furrows after the last harrowing at a distance of 2.5 – 3.0 meters.

Planting

Patola can either be direct-seeded or transplanted. For hybrids, transplanting is recommended to save on seeds and ensure seedling survival. A one (1) hectare farm requires 1-2 kg of seeds. To facilitate germination, soak the seeds overnight with clean water

before planting. Wrap the seeds with moist cloth and place in dark and cool place until the seed coat breaks or the radicals have emerged.

Plant 1-2 pre-germinated seeds per hill at a distance of 1.0 m. Cover seeds with thin layer of soil. Plant patola in ridges or raised beds during the wet season to prevent rotting of seeds or seedlings due to flooding.

To grow seedlings for transplanting, prepare soil media composed of one part compost or organic fertilizer, one part garden soil and one part carbonized rice hull (CRH). A ready mixed commercial soil media for seedling production can also be used. Fill the seedling trays with the prepared media. Water the potting media before sowing. Sow one pre-germinated seed per hole at least 1-2 cm deep and cover with fine soil. Place the seedling trays under a temporary shade. Water the seedlings regularly.

One week before transplanting, harden the seedlings by gradually reducing the frequency of watering and exposing them to direct sunlight. Seedlings are ready for transplanting 10-15 days after emergence (DAE) or when true leaves have developed. Transplant one seedling per hill at a distance of 1 m between hills. To prevent transplanting shock, transplant in the afternoon or during cloudy days. Replant missing hills within 5-7 days after transplanting (DAT).

Fertilizer Application

The kind and amount of fertilizer to apply depends on soil fertility and soil type. Submit soil samples for analysis at the Cagayan Valley Integrated Agricultural Laboratory (CVIAL), Department of Agriculture, RFO 02, Carig Sur, Tuguegarao City, Cagayan or at Ilagan Soils Laboratory, San Felipe, Ilagan City, Isabela to determine the right nutrient requirement of your farm.

In the absence of soil analysis, apply fertilizers at the time and amount specified in Table 2.

Table 2. Fertilizer requirement and time of application for patola

Method of Application	Kind of fertilizer	Amount of fertilizer	Time of Application
Basal	Complete (14-14-14) Organic (fully decomposed animal manure or commercial organic fertilizer)	1 tbsp or 10 g per hill 3,000 bags per ha	Before planting
Side-dress	Urea (46-0-0) Complete (14-14-14)	1 tbsp or 10 g per hill 1 tbsp or 10 g per hill	28 DAE
	Urea (46-0-0) Complete (14-14-14)	4tbsp or 40 g per hill 4 tbsp or 40 g per hill ha	56, 70 and 85 DAE

Trellising

Provide the plants with trellis to produce good quality fruits. Trellis is usually essential especially during the wet season to keep the fruit from the ground and eventually minimize fruit rotting and malformation.

Construct overhead trellises at a distance of 2-3 m wide and 2 m high using ipil-ipil or bamboo poles. Provide strong roof trellis by intertwining tie wire or nylon twine crosswise and lengthwise on top of the trellis. Provide a ladder-like trellis or vertical pole for each patola plant to facilitate the vines to climb.

Train the vines to climb the trellis by tying the stem lightly on the vertical pole or ladder-like trellis until it reaches the overhead trellis.

Pruning

Pruning is usually practiced in patola production to promote branching and fruiting. Remove all the lateral branches and female buds that appear on the climbing part of the main stem below the overhead trellis. Remove also the tip of the main vine when it reaches the top of the overhead trellis and the lower lateral branches to facilitate fruit setting.

Irrigation

Sound water management is necessary to maintain good crop stand and attain optimum harvest. Irrigate the crop two (2) weeks after emergence. Repeat irrigation at seven (7) days interval throughout the growing season. Furrow irrigation is generally recommended during dry season.

Weeding

Weed the area at 14 days after emergence (DAE). Cut the weeds close to the ground every 14 days or as needed. Do not uproot the weeds or cultivate in between the rows to prevent root injury. Disturbed roots affect the growth of vines and result to low yield. Practice regular weeding until the crop has attained considerable vegetative size to cover the trellis. When the trellis is completely covered with the vines it controls the sunlight that promotes the growth of newly germinating weeds thus, suppressing weed growth.

Pests Management

Crop protection strategy is based on the population and degree of damage of pests attacking the plants. Patola is very resistant to most insect pests except fruit fly. The most common disease that infect patola is downy mildew.

To prevent the attack of insect pests and diseases, practice the following:

1. Plant resistant varieties
2. Practice crop rotation
3. Field sanitation

Harvesting

Generally, the best stage to harvest patola for food consumption is when the fruits are still immature. This usually occurs five (5) days after fruit setting. Cut the peduncle using a sharp knife. To maintain the freshness of the harvest pack the fruits using polyethylene bags. Harvest in the morning to avoid the damaging effect of sunlight.

COST AND RETURN ANALYSIS FOR ONE HECTARE PATOLA PRODUCTION

A . Labor Cost

PARTICULARS	NUMBER 1/		VALUE IN PESO (P)
	Man-days	Man-Animal days	
1. Land Preparation			
a. 1st Plowing	7	7	2,100.00
b. 1st Harrowing	4	4	1,200.00
c. 2nd Plowing	5	5	1,500.00
d. 2nd Harrowing	3	3	900.00
e. Furrowing	4		600.00
2. Trellising	15		2,250.00
3. Basal Fertilization	4		600.00
4. Planting	10		
5. Care of the plants			
a. Watering (3x a week up to flowering)	18		2,700.00
b. Weeding and cultivation (4x)	16		2,400.00
c. Side dressing of fertilizer	4		600.00
d. Hilling-up		4	1,200.00
e. Control of pests and diseases	2		300.00
6. Harvesting , packing and hauling	50		7,500.00
Sub-Total			**23,850.00**

B. Material Inputs

Materials	Quantity	Unit Cost (P) 2/	Amount (P)
1. Seeds (OPV)	2 kg	600.00	1,200.00
2. Fertilizer			
- Complete (14-14-14)	4 bags	1,900.00	7,600.00
- Organic fertilizer	20 bags	200.00	4,000.00
3. Insecticides	4 liters	850.00	3,400.00
4. Fuel	40 liters	50.00	2,000.00
5. Polyethylene	100 pieces	5.00	500.00
6. Bamboo (P60/pc)	300 pieces	60.00	18,000.00
7. Tie wire		75.00	600.00
8. Miscellaneous (straw, nails, needles, etc.)			1,500.00
Sub-Total			38,800.00
Sub-Total (A&B)			62,650.00
C. Contingency (15% of A & B)			**9,397.50**
GRAND TOTAL			72,047.50
Yield /ha (kg)	15,000	3/	
Gross Income		15.00/kg	150,000
Net Income			77,952.50
Return on Investment (ROI)			108.20

1/ Man-days = P250
MAD = P400
2/ Cost of items as of December 2015
3/ Farm gate Price

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