

PATOLA
(*Luffa cylindrica*)

Patola belongs to the cucurbit family, they are vines producing fruits and consider as most popular among vegetables. Ridged gourd or Angled gourd (*Luffa acutangula*) and smooth gourd (*Luffa cylindrical*) are commonly called patola among the Tagalogs and locally known as kabatiti among the Ilocanos and Ibanags. Patola plant is an annual vine with tendrils and large cylindrical fruits that are edible when young. Most patola varieties are monoecious. Male flowers develop in a cluster, whereas female flowers develop singly or in association with male flowers. The lower nodes of patola usually bear only male flowers, followed by nodes having both male and female flowers, which are followed by solitary female flowers at the uppermost nodes. Analysis of fruit of patola shows that it is an excellent source of phosphorous, iron and a fair source of calcium.

Patola is closely related to cucumber and modified cultural practices for trellised cucumber production can be used. The luffa is a tropical plant which requires a long growing season and warm temperature.

USES

Patola is commonly eaten when cooked with other vegetables or alone with shrimp and pork. Young fruits of sweet cultivars maybe eaten raw like cucumbers and small fruits are sometimes pickled. Mature fruits of patola can be dried and used as bath and dishes sponge. This is also use in the manufacture of potholders, table mats, door and bath mats sandals and gloves.

It has been reported that the leaves are use for the treatment of hemorrhoids and leprosy, and the juice of the fresh leaves for treating the eyes of children against granular conjunctivitis, and also prevent the the lids from adhering at night on account of excessive secretion and as an external application to sores and bites of venomous animals. The oil of the seeds is used I skin complaints and the infused seeds are given as a purgative and an emetic. The pulp of the fruit is administered internally to cause vomiting and purging. The dried fruit is powdered and made into a snuff for those suffering from jaundice.

NUTRITIONAL PROFILE OF THE CROP

Edible portion contain	Edible portion of immature fruit per 100 g	Edible portion of young leaves per 100g
Water	93 g	89 g
Protein	0.6-1.2 g	5.1 g
Fat	0.2 g	
Carbohydrates	4-4.9 g	4.0 g
Calcium	16-20 mg	56.0 mg
Fe	0.4-0.6 mg	11.50 mg
Phosphorous	24-32 mg	140 mg

Vitamin A	45-410 IU	
Vitamin B1	0.04-0.05 mg	
Vitamin B2	0.02-0.06 mg	
Niacin	0.3-0.4 mg	
Vitamin C	7-12 mg	
Energy value	85 kJ/ 100 g	
Beta carotene	9.2 mg	
Vitamin C	95 mg	
Fiber	1.5 mg	

VARIETIES

There are two species of patola

1. Angular patola (*Luffa acutangula*) – or ridge gourd, in (Tagalog) patola, (Ilocano) kabatiti and in (Bisaya) buyo-buyo.
2. Sponge gourd or Smooth loofah (*Luffa cylindrica*)

CULTURE AND MANAGEMENT

Land preparation

Prepare the land thoroughly using plow or tractor. The soil should be pulverized and leveled. During rainy season, raised beds are recommended to avoid waterlogging. Application of lime one month before sowing at the rate of 3 tons per hectare is recommended.

Planting

The seeds are planted direct in the prepared furrows. Two to three seeds per hill and drill 2cm. deep at a spacing of 2mX2m between rows. One week after planting thinning will be done to avoid overcrowding of plants. The recommended spacing will give 2,500 plants per hectare.

Trellising

Trellising should be done as soon as the plant starts to crawl. Madre de cacao/ipil-ipil post can be used as trellis to facilitate the growth of vines. G.I. wire and nylon twine can also be used. Provide the plants with trellis to produce fruits of good visual quality. Trellising is also essential during the wet season to minimized fruit rotting and malformation.

Fertilization

Fertilizer application should be based on soil analysis. To achieve optimum yield have your soil analyzed at the Soil Laboratory nearest you to determine the right nutrient requirement of the soil. In the absence of soil analysis, apply the following fertilizers at the time and amount specified.

Time of Application	Kind of fertilizer	Amount of fertilizer	Stage of the crop
Basal	Complete (14-14-14)	1 tbsp or 10 g per hill	Before planting or at 2 to 3 true leaf stage.
	Organic (fully decomposed animal manure or commercial organic fertilizer)	3,000 bags per hectare	At sowing time
Sidedress	Urea (46-0-0)	1 tbsp or 10 g per hill	28 days after emergence
	Complete (14-14-14)	1 tbsp or 10 g per hill	
	Urea (46-0-0)	4 tbsp or 40 g per hill	56, 70 and 84 days after emergence same amount
	Complete (14-14-14)	4 tbsp or 40 g per hill	

Training of vines

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 to facilitate good growth.

Irrigation

Irrigate the crop by flooding the area two weeks after emergence. Repeat irrigating at (7) days interval throughout the growing season.

Cultivation and Weeding

Cultivation is necessary to loosen the soil around the stems and to cover the exposed portion of the roots. Weeding must also be done simultaneously with cultivation to have healthy and robust plants. When the plants are big enough, cultivation is done enough to kill the weeds between the rows and to cover the low portion of the furrows untouched by a cultivator.

PEST AND DISEASES MANAGEMENT

Pests

1. Fruitfly

Adult fruit fly lay eggs on the young fruits. The eggs hatch into small larvae then start eating the fruits.

Cut and burn the infected parts. After removal of the infected fruits, spray insecticide recommended by the authorize dealer.

2. Thrips

It is a very small crawling insect on the lower side of the leaves. Spraying at night was found to be effective in controlling thrips. During daytime, insects hide and cannot be controlled by contact insecticides.

In case of of severe cases, spray for two consecutive nights using different chemicals at a time.

3. Caterpillar

Larva eating shoot tips and leaves. Spray with insecticides.

Diseases

1. Downey Mildew

Spots that are irregular in shape usually appear in the surface of the leaves. The spots increase rapidly in size until the whole leaf dies.

Control Measures:

1. Plant resistant varieties
2. Restrain nitrogen fertilization and irrigation
3. Fungicide application if symptom is becoming severe
4. Do clean cultural management practices
5. Practice crop rotation

HARVESTING

For use as vegetables, 12-15 days after fruit setting, harvest immature fruits using a sharp knife to cut the peduncle when they are about half the size of a mature fruit. Older fruits become bitter and fibrous and are inedible. Harvesting is done by hand with the use of sharp knife.

For use as sponge, fruits of the smooth loofah are harvested when they are fully mature, which is indicated by yellowing of the base and apex about 4 -5 months after

planting. When cut, part of the stalk is usually left on the fruit for convenience in handling.

POSTHARVEST

Immature fruits of loofah are easily damaged. Careful wrapping and packaging is needed to enable long distance transport. Storage life of young fruits is 2-3 weeks at 12-16 degrees centigrade.

The best sponges are from mature fruits but still green fruits of smooth loofah. They are processed by immersing in running water until the rind disintegrates. When the rind has disappeared, the pulp and seeds are washed out. The sponges are then bleached with hydrogen peroxide and dried in the sun.

REFERENCES

1. A Guide to Lowland Vegetable Production (ATI, DA-RFU 2 and HVCC Program)
2. Cultural Directions for Philippine Agricultural Crops. Volume II – Vegetable
3. Package of Technology of Different Vegetable Crops. DA-BAR
4. PROSEA – Plant Resources of South East Asia Vegetable