



DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY

EGGPLANT

PRODUCTION GUIDE



Eggplant
Solanum melongena L.



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The EGGPLANT Plant

Eggplant (*Solanum melongena* L.) originated from India and is generally grown as a vegetable throughout the tropical, sub-tropical and warm temperate areas of the world. It is an important vegetable in countries like India, China, Japan and Philippines. It is termed as aubergine and brinjal (English,) talong (Tagalog), tarong (Ilocano) or bringhinas (Bisaya). It is cultivated for the immature fruits which are roasted, fried or stuffed. Young fruits are also eaten as raw. It has much potential as raw material in pickle making and dehydration industries. It has also been reported to contain certain medicinal properties wherein white eggplants are good for diabetic patients; and can cure toothache. It has also been recommended as an excellent remedy for those suffering liver complaints.

Eggplant is grown in 20,907 hectares all over the country (Bureau of Agricultural Statistics, 2006). In 1999 to 2002, it is estimated that over 20,000 hectares of land in the Philippines are devoted to eggplant production with annual production of more than 1479,000 metric tons. Eggplant accounts for 28% of the country's total volume of vegetable production with major growing areas at low elevation areas of Cagayan Valley, Ilocos Region, Central Luzon, Southern Tagalog, Central Visayas and Western Visayas. The top producers are Ilocos, Central Luzon and Southern Tagalog

It was reported that on the average, the oblong-fruited eggplant cultivars are rich in total soluble sugar, whereas free-reducing sugars, anthocyanins, phenols, glycoalkaloids (such as solasodine), dry matter and amide proteins. High anthocyanin content and low glycoalkaloid contents are considered essential regardless of how the fruit is used.

For processing purposes, the fruits should have high dry matter content and low level of phenolics. Bitterness in eggplant is due to the presence of glycoalkaloids which are highly occurring in plants under *Solanaceae* family. The glycoalkaloid contents in the Indian commercial cultivars vary from 0.37 mg/100 g fresh weight to 4.83 mg. Generally, the high content of glycoalkaloids (20 mg/100 g fresh weight) produces a bitter taste and off-flavor. The discoloration in eggplant fruit is attributed to high polyphenol oxidase activity. The cultivars which are least susceptible to discoloration are considered for processing purposes.

Preferred types are the long purple with green calyx, but some regions also preferred the long or round green-colored varieties. Eggplant is generally cultivated as a mono crop year round which is considered a practice contributing to the escalating problem of insect pests.

Nutritional Value

Table1. Nutrient content of eggplant per 100 g edible portion

Properties	Amount	Properties	Amount
Water (g)	92.00	Sulphur (mg)	44.0
Protein (g)	1.60	Chlorine (mg)	52.0
Fat (g)	0.20	Vitamin A (I.U.)	124.0
Fiber (g)	1.00	Thiamine	0.04
Carbohydrates (g)	4.00	Riboflavin	0.11
Calcium (g)	22.00	B-carotene (ug)	0.7
Iron (mg)	0.90	Oxalic acid (mg)	18.0
Vitamin B1 (mg)	0.08	Magnesium (mg)	16.0
Vitamin B2 (mg)	0.07	Phosphorus (mg)	47.0
Niacin (mg)	0.7	Sodium (mg)	3.0
Vitamin C (mg)	6	Copper (mg)	0.17
Energy Value (kj)	100	Potassium	2.0
Calories	24		

Source: Siemonsma J.S. and Piluek, K. (Editors). 1994. PROSEA Handbook No. 8. Vegetables. Pudok, Wageningen. 1993/Prosea, Bogor and AVRDC

VARIETIES

Table 2. Eggplant varieties found in the PSIA Seed Catalogue.

OWNER	VARIETY	MATURITY (DAT)	FRUIT TYPE				FEATURES
			Shape	Length (cm)	Color	Weight (g)	
Pine Valley Corp.	Century Round Allgrow	70	Round	7 cm length, 9 cm diameter	Green	130-140	Plant height is 16 inches upright. Fruit is glossy with green calyx. Adaptable in lowland and in relatively cold areas.
Haveson	Hybrid chhaya	55-60	Half Long	20	Shining blackish purple	70-80	Cluster bearing (2-3), resistant to bacterial wilt.
Pine Valley Corp.	Hybrid Black Pride Allgrow	65	Cylindrical	23-25	Dark purple	75-80	With long shelf life. Abundant fruiting.
Pilipinas Kaneko	Hybrid Eggplant Zam	45	Semi-pointed			143	High yielding, light green fruits.
Allied Botanical	Japanese type early Bird	60	Elongated Oval	12	Glossy purple-black with purple calyx	90	A Japanese eggplant hybrid that bears numerous fruits. Has long productive life. Very attractive color and firm flesh. Ideal for tempura and frying.
Allied Botanical	Long purple ABC select	65	Straight, long, slightly curved	20	Purple	145	Moderately vigorous and uniform plants.
Pine Valley corp.	Long San Juan	70	Cylindrical	22	Purple	90	Good tolerance against bacterial wilt. Glossy fruit.
Keystone	Mayumi	60	Long slender 12 inches log			80	High yielding (Pakbet type) moderately resistant to bacterial wilt.
Keystone	Pepito	65	Semi-round			250	Fresh market, bacterial wilt resistant.
Allied Botanical	Spitfire 252	60-65	Long, cylindrical	20	Deep purple	145	Fruits are glossy with attractive bright green calyx. A premium quality hybrid.

CULTURE AND MANAGEMENT

A. Soil Requirement. Eggplant production can be successful on any good agricultural soil by using appropriate management methods. A deep, fertile and well drained sandy loam or silt loam soils with pH of 5.5 to 6.8 and a high organic content are desirable for eggplant growth and development. Studies have indicated that lower or higher pH results in low yields because pH is closely related to the availability of soil nutrient content. A sandy loam soil is ideal especially when early yield is desired.

Eggplant is susceptible to root rotting fungi, so saturated soil conditions and heavy clay loam soils should be avoided. Nematode problems are more likely to happen on very heavy soils.

- B. **Climatic Requirements.** Eggplant can be grown from low to mid elevations throughout the year. A relatively long growing season of about 120 days is required for successful production. Eggplant is a warm weather plant, and the optimum temperature for growth and fruit development are 21°C to 29°C. It is intolerant of frost, and the growth of young plants will be retarded when night temperatures are below 16°C. On flowering plants, both cool temperature and low light intensity can cause pollen viability and failures of fruit set. Eggplant, though more resistant in drought and excessive rainfall than tomato, has relatively slow growth under high temperature. When both temperature and relative humidity are high, eggplant becomes vegetative.
- C. **Seedling Production.** Eggplant is best grown when transplanted. Incorporate 1 kg of fully decomposed chicken manure and 300 g carbonized rice hull/m². The optimum temperature for seed germination is 24° to 29°C. At this temperature, seedlings should emerge in 6-8 days. Wet the seedbeds and make shallow lines 5 inches apart. Sow thinly 200-250 g of seeds and cover lightly with soil, rice hull or chopped rice straws can be used as mulch. Provide partial shade during the dry season and rain shelter during the wet season. Regular watering is necessary. Harden seedlings one week before transplanting by decreasing the frequency of watering and fully exposing to sunlight to minimize transplant shock. Transplant the seedlings four weeks after emergence. Seedlings grown in cells or containers are ideal because they allow field planting without disturbing the root system. Bare rooted seedlings could be successful if the field is irrigated and no drying of the young root system during the planting process. The most recent technique is the use of mechanical sowing. The seeds are mechanically dispersed into the cells or plugs of a PE tray by the seeder. The plug seedlings are raised under greenhouse condition. Fertilize the plug seedlings weekly after two weeks, preferably with a water soluble fertilizer solution. Plug seedlings will be ready to set in the field 4-5 weeks after sowing.
- D. **Land Preparation.** Prepare land by plowing and harrowing twice. Make furrows 1m apart. Spread fully decomposed chicken manure along rows at 1 kg/linear meter or 2 kg of vermicompost/m². Apply complete fertilizer (14-14-14) at 10-15 g/hill and cover tightly with soil.
- E. **Transplanting and Maintenance.** A total of 13,500-16,000 seedlings are needed for transplanting for an area of 1 hectare, depending on spacing distances. A cloudy, cool weather condition and moist but not wet soil are ideal for transplanting. During sunny days, transplanting is best done in the late afternoon to allow the seedlings to recover at night. However, seedlings that are adequately hardened with slightly damaged roots could recover well when transplanted in a well-irrigated field, even on a hot day.

About 6-9 days before transplanting, seedlings are hardened by slightly withholding water and exposing them to strong sunlight by removing the netting. This will decrease the transplanting shock. The seedlings are thoroughly watered 12-14 hours before transplanting to the field. The ideal seedlings to be transplanted have 3-4 true leaves, stocky and diseased free. Generally, seedlings are ready to set in the field 4-6 weeks after sowing. Eggplant seedlings are transplanted by hand into a hole deep enough to bury a plant. After transplanting, press the soil firmly around the root, and irrigate furrows immediately. Plant 1 seedling/hill at a distance of 0.5-1.0 m depending on the variety. Provide 1m long stake to prevent lodging. Irrigate by furrow every 7-14 days depending on season and soil type.

Side dress the seedlings with 46-0-0 at 10 g/hill every two weeks during the vegetative stage. Use equal parts of 46-0-0 and 0-0-60 at the start of fruiting. Weed two-three times during the growing season, or as necessary. Weeds are controlled either by physical/mechanical methods. Mulching with black polyethylene will effectively control weeds and greatly lessen labors. Natural organic mulches (rice straw, rice hull) not only help conserve moisture, but also add organic matter to the soil.

- F. **Organic Fertilizer:** Fertilizer should be bio-degradable materials of microbial, plant or animal origins produced on organic farms such as vermicompost and processed chicken manure. Basal applications of organic compost of 5-10 tons/ha are needed for vegetable crops. Supplementary application of

Fermented Plant Juice (FPJ) of Fermented Fruit Juice (FFJ) should also be applied twice a week up to flowering stage.


G. Pest and Disease Management. Timely protection of crops is essential. In the tropics, eggplant is attacked by several pests. Chemical sprays, botanical and biological pesticides are used to control pests. Insect infestation is one of the most limiting factors for accelerating yield potential of eggplant. The crop is prone to damage by various insects, although there is wide variability in the degree of infestation.






Several pests infest eggplants during its growth stages. Table 1 and Table 2 present pests that damage eggplant at different growth stages and their control, respectively.

Table 3. Insect pests of eggplant and growth stage of infestation

Growth Stages	Insects/Mites
0 Stage - Seeds	Ants
Seedling Stage - Leaves	Aphids Whiteflies
Vegetative Stage - Leaves - Stem	Aphids Colorado potato beetle Flea beetle Spider mites Stink bug Thrips Whiteflies Eggplant fruit and shoot borer
Reproductive /Flowering Stage - Flowers and foliage - Stem	Aphids Colorado potato beetle Flea beetle Spider mites Stink bug Thrips Whiteflies Eggplant fruit and shoot borer
Maturation /Fruiting Stage - Fruits and stems	Eggplant fruit and shoot borer

Table 4. Insect pests of eggplant and their control measures

Insect/Pest	Damage/Harm	Control Measures
Ants 	<ul style="list-style-type: none"> Ants tend to bring insect pests like aphids, scales, whiteflies, mealybugs, and other honeydew producing insects which results in missing hills, loss of plant stand, uneven growth distribution in the field, and an increased incidence of diseases caused by the mentioned insect pests. 	<ul style="list-style-type: none"> Increase seeding rate and thin the plants 3 weeks after sowing. Control aphids, whitefly and other insects that excrete honeydew Spray mixture of dishwashing soap, vegetable oil, table salt, vinegar and water Cultivate and flood the field Avoid using heavy doses of highly soluble nitrogen fertilizers

<p>Aphids (<i>Aphis gossypii</i>)</p> 	<ul style="list-style-type: none"> • Both the nymphs and the adults pierce the plant tissues to feed on plant sap. • Cause severely distorted leaves. • Defoliation and stunted growth of plant. 	<ul style="list-style-type: none"> • Place yellow sticky traps on planting area • Place yellow basin trap on the area • Use botanical pesticides such as ginger rhizome extract and custard apple leaf extract • Spray soap mixed with water (coconut-based soap) • Spray ammonia mixed with water
<p>Colorado Potato Beetle (<i>Leptinotarsa decemlineata</i>)</p> 	<ul style="list-style-type: none"> • Adults and larvae feed on leaves and often consume the entire leaves starting with the young and soft ones. 	<ul style="list-style-type: none"> • Crop rotation (garlic and beans as rotation crops and coriander, marigold, and tansy are good trap crops). • Remove weeds. • Plow-under crop residues after harvest. • Crush eggs and collect adults manually. Place collected beetles in a pail of soapy water. • Use row covers. • Mulching encourages beneficial insects, by giving them a habitat.
<p>Cutworm</p> 	<ul style="list-style-type: none"> • Young caterpillars eat the soft leaves of the plant. • Fully grown caterpillars are capable of eating the entire plant. • Newly hatched larvae feed from the base towards the tip of the leaf. • It causes leaf discoloration. • It causes yellowing of plant leaves. 	<ul style="list-style-type: none"> • Removal of weeds in and around fields (at least 2-3 weeks before planting). • Plow and harrow fields properly before planting. • Interplant main crops with onion, garlic, peppermint, coriander, or garlic every 10-20 rows. • Sunflowers and cosmos can also be planted as a trap crop in or around fields. • Place protective collars made of plastic or paper cups, plastic drink bottles with ripped-out bottom, sturdy cardboard, and milk cartons around the young plant and push into the soil to prevent the cutworm from attacking the stem. • Place sticky substances such as molasses, saw dust, or crushed eggshells around the base of each plant.
<p>Fruit and Shoot Borer (<i>Leucinodes orbonalis</i>)</p> 	<ul style="list-style-type: none"> • Wilted shoots are the initial feeding damage. • Damaged stem and fruit have small holes. • It bores into the young fruit and feeds inside which makes the fruit unmarketable. 	<ul style="list-style-type: none"> • Plow the field to expose larvae to predators and weather. • Plant resistant varieties. • Raise seedlings under row covers and/or nets to prevent the moths from directly laying eggs on them. • Practice crop rotation. • Proper field sanitation will also reduce the pest population. • Cut and/or prune immediately the larvae-infested shoots. • Do not drop the cut shoots in the field, burn or cut them into small pieces. • Uproot all old plants after harvest and burn them. • Use pheromone traps.
<p>Spider Mite</p> 	<ul style="list-style-type: none"> • Feeds on the undersides of leaves. • The upper leaf surface has a speckled or mottled appearance while the underneath 	<ul style="list-style-type: none"> • Spray botanical pesticides like Coriander seed extract.










	<p>appears tan or yellow and has a crusty texture.</p> <ul style="list-style-type: none"> • Infested leaves may turn yellow, dry up, and drop in a few weeks. • Heavy infestation will result in a fine cobweb by appearance on the leaves. • Plants die when infestation is severe. 	
<p>Stink bug</p> 	<ul style="list-style-type: none"> • Adults and nymphs suck plant sap from leaves, flowers, bolls, buds, fruits, and from the seeds of a wide array of crops. • Feeding on fruits causes scarring and dimpling known as cat-facing. • Feeding on the developing grains of rice at the milking stage causes shriveling and empty seeds with brown spots. • Feeding on cotton bolls prevents bolls to open or stains the lint or causes bolls to drop. 	<ul style="list-style-type: none"> • Remove and control weeds from fields and also in the adjacent fields. • Plant small flowering plants to attract native parasitic wasps and flies. • Plow-under all plant debris after the harvest to destroy all possible breeding sites. • Place parasitoids such as native parasitic wasps on the area.
<p>Thrips</p> 	<ul style="list-style-type: none"> • Sucking up the released plant fluid. • Cause tiny scars on leaves and fruit, called stippling, which can cause stunted growth. • Damaged leaves may become papery and distorted. • Infested terminals lose their color, rolls, and drop leaves prematurely. 	<ul style="list-style-type: none"> • Spray botanical pesticides such as garlic bulb extract.
<p>Whiteflies</p> 	<ul style="list-style-type: none"> • Both the larvae and adults pierce and suck the sap of the leaves. • Results to the weakening and early wilting of the plant which results to reduced plant growth. • Feeding may also cause yellowing, drying, premature dropping of leaves that result in plant death. • Whiteflies produce honeydews that serve as the substrates for the growth of black sooty molds on leaves and fruit. • Mold reduces photosynthesis causing the poor plant growth of the plant. 	<ul style="list-style-type: none"> • Spray botanical pesticides such as garlic oil extract, madre de cacao and neem extract, and neem oil extract. • Spray soap (coconut-based). • Spray potato flour mixed with water and drops of liquid soap.
<p>Caterpillar</p> 	<ul style="list-style-type: none"> • Caterpillar may feed on the foliage and/or fruit (depending on species), or they may feed on young stems near the soil line. • Fruit-feeding caterpillars like fruitworms are the greatest threat during the fruiting period. 	<ul style="list-style-type: none"> • Spray hot pepper extract mixed with coconut-based soap and water.

Table 5. Diseases of eggplant and their control measures

Disease	Symptoms	Control/Preventive Measures
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<p>Bacterial Wilt</p> 	<ul style="list-style-type: none"> • Wilting of the terminal leaves, which after 2 - 3 days becomes permanent when the whole plant wilts due to the active development of the disease • Sudden death of whole plant. • Plant stunts and produces large numbers of adventitious roots on the stem (slow development of disease). • Remove and destroy all infected plants immediately. • Pour hot water to infected soil after infected crops are removed (for disinfection) • Rotate crops other than solanaceous crops. Rice, corn, beans, cabbage, and sugarcane are found to be resistant to bacterial wilt. • Expose farm tools to heat before using them in another field.
<p>Damping-off</p> 	<ul style="list-style-type: none"> • Dark-brown to black water-soaked lesions that rapidly spread over the entire seedling causing the seedling to wilt and die (<i>Pythium spp.</i>). • Reddish-brown lesions on stem and death of growing tips. • Lesions are also found on roots and stem near the soil line that cause the seedlings to wilt and eventually die (<i>Rhizoctonia solani</i>) • Dark-brown lesions on the stem and dark-brown lesions on roots and stems at or near the crown, killing the seedlings. (<i>Fusarium species</i>). • Improve the drainage and regulate soil moisture to prevent soil saturation. • Seed treatment. • Crop rotation to cereal crops. • Soil fumigation or solarization may reduce damping-off in the field. • Use pasteurized soil mixes in nurseries.
<p>Verticillium Wilt</p> 	<ul style="list-style-type: none"> • Stunted and wilted plants. • Initial symptom is yellowing of the leaf margins which later turn brown and cause the plant to wilt. • Lengthwise cut of the infected stem shows dark-brown discoloration in the vascular tissue. • Use pasteurized soil mixes in nurseries. • Seed treatment. • Soil sterilization and soil fumigation. • Crop rotation with non-solanaceous crops are recommended • Grafting eggplants on suitable rootstocks also minimizes the disease infestation. • Use of verticillium wilt resistant varieties.
<p>Phytophthora Blight</p> 	<ul style="list-style-type: none"> • Damping-off of seedlings in seedbeds, spotting of leaves, and a collar rot of the main stem that often results in death of infected plants. • Dark-brown spots, water-soaked with a light-colored border which expand rapidly and can cover mature fruits in 3 to 4 days. • Good water management. • Avoid prolonged saturation of the soil or standing water around the base of trees or other susceptible plants • Provide good soil drainage. • Avoid movement of infested soil, water, and plant parts from an area where Phytophthora rot has developed. • Plant resistant variety. • Perform crop rotation.
<p>Phomopsis</p> 	<ul style="list-style-type: none"> • Circular brown spots with numerous black fruiting bodies of the fungus appear on the leaves • Fruit develops spots with pale sunken areas that gradually turn into a black mummy dry rot. • Destroy infected plant material to reduce initial inoculums • Plant pathogen-free seed and/or resistant varieties • Transplants should be <i>Phomopsis</i>-free • 3-4 year crop rotation is beneficial, since the fungus does not infect other crops • Weed control • Apply fungicides in combination with the above cultural practices.

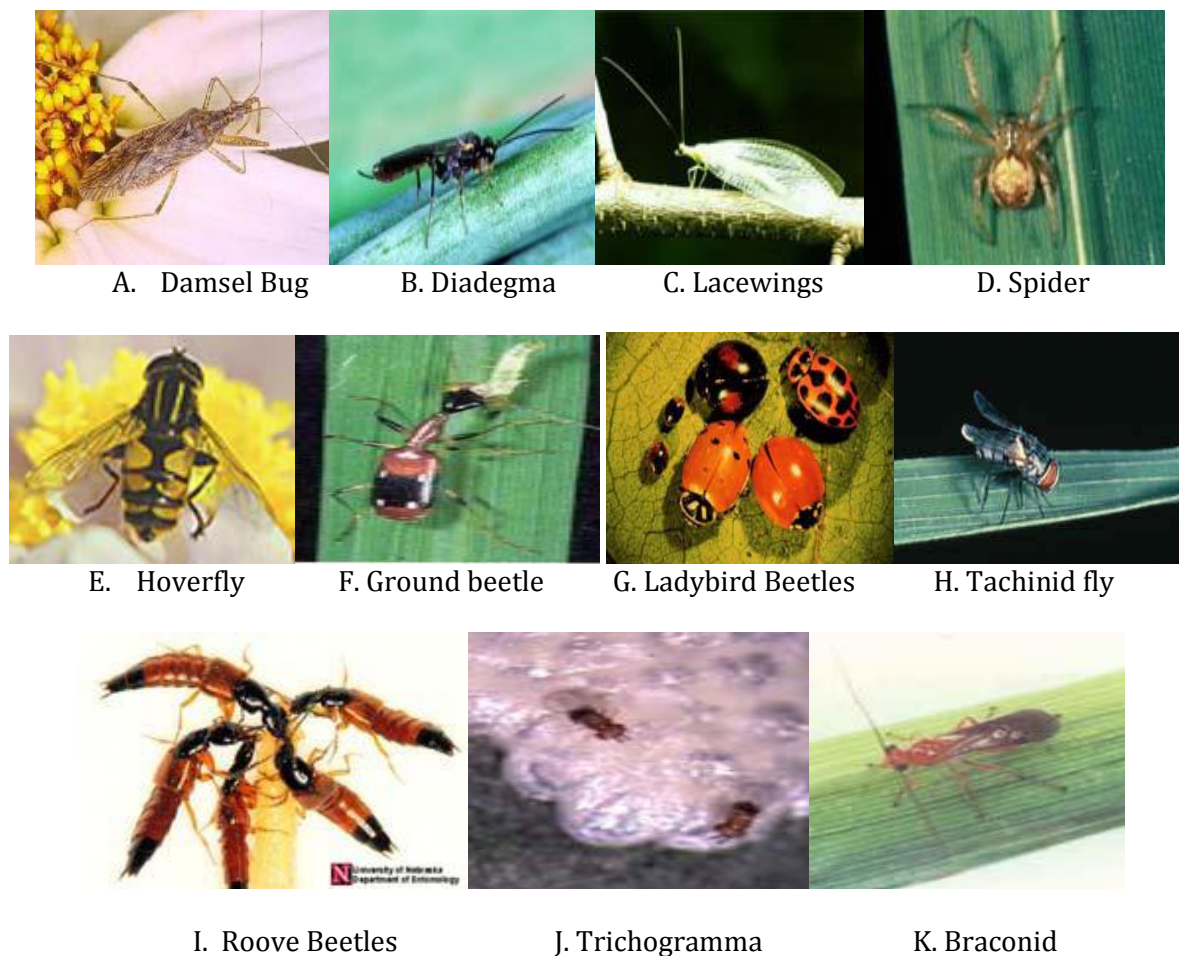


Figure 1. Beneficial insects which can be used to control pests in eggplant and other crops.

H. **Harvesting of Eggplant.** The fruit of the eggplant can be harvested anytime after they have reached sufficient size for your intended market. In any case, be sure to harvest fruit before their flesh becomes tough and their seeds begin to harden. Harvest at least once per week, although two harvests per week would ensure harvesting most fruit at the optimal stage of maturity.

Cut the fruit off with a knife or pruning shears, be sure to leave the calyx (cap end) attached to the fruit. Because the fruit bruises easily, eggplant is not run across a grading line. Fruits are generally sorted by size, color and field-packed into bushel baskets or cartons, depending on the market.

Table 6. Cost and Return Analysis per Hectare in Philippine Money (Peso)

Activities	Qty	Unit	Rate/Unit	Total Cost
Land preparation (mechanized)				
Mowing	4	hrs	1,500	750
Plowing	8	hrs	1500	1,500
Vermicompost Application	4	M/D	250	1,000
Harrowing (2x)	8	hrs	1500	1500
Rotavation	4	hrs	1500	750
Furrowing	1	MAD	250	250
Seedling Preparation				
Sowing	1	M/D	250	250
Land prep/potting	2	M/D	250	500
Pricking	10	M/D	250	2,500
Maintenance	5	M/D	250	1,250
Transplanting/Basal fertilization	20	M/D	250	5,000
Cultivation (Off- barring and Hilling-up)	4	M/D	250	1,000
Field Maintenance				
Irrigation (furrow-10x)- MD/Irrigation-2-workers operation	30	M/D	250	7,500
Side dressing (3x)	4	M/D	250	3,000
Weeding (3x)	12	M/D	250	3,000
Spraying	30	M/D	250	7,500
Harvesting/hauling,upgrading and packing)	60	M/D	250	15,000
			Sub-total	52,250
Supplies and Materials				
Seeds	250	gms	6,,000	1,500
Fertilizers				
Complete (14-14-14)	2	Bags	1,300	2,600
Urea (46-0-0)	4	bags	1,200	4,800
Muriate of Potash	1	Bags	2,000	4,000
Vermicompost	50	bags	250.00	12,500
Fungicide	1	box	500	500
Insecticide	2	li	600	1,200
Biological Pesticide	2	li	650	1,300
Coir Dust	1	sack	40	40
			Sub-Total	28,440.00
Cost of Production (P)		Php		80,690
		Low	Medium	High
		10	15	20
Gross Income (10,000/kg)		100,000	150,000	200,000
Net Income (P)		19,310	69,310	119,310
ROI (%)		24	86	148

Prevailing prices of labor and supplies as of 2012

References

- Bureau of Agricultural Statistics. Production area, production (mt.) and other data. 2010.
- Chopra. R. N., Nayar. S. L. and Chopra. I. C. Glossary of Indian Medicinal Plants. 27 November 2011.
- Chopra. R. N., Nayar. S. L. and Chopra. I. C. "[*Abelmoschus esculentus* - \(L.\) Moench.](#)", *Plants for a Future*, June 2004.
- Collins English Dictionary - Complete & Unabridged 10th Edition. 2009 © William Collins Sons & Co. Ltd. 1979, 1986 © HarperCollins (Publishers 1998, 2000, 2003, 2005, 2006, 2007, 2009).
- Cultural Directions for Philippine Agricultural Crops. Volume No. 11. Vegetables. Ed. 1974. Published by Public Affairs Office. Bureau of Plant Industry. San Andres St. Malate. Manila.
- McWhorter, John H. [*The Missing Spanish Creoles: Recovering the Birth of Plantation Contact Languages.*](#) University of California Press. p. 77. [ISBN 0-520-21999-6](#). (2000).
- National Research Council "[Okra](#)". [*Lost Crops of Africa: Volume II: Vegetables*](#). (2006-10-27). Lost Crops of Africa. 2. National Academies Press. [ISBN 978-0-309-10333-6](#). (Retrieved 2008-07-15.)
- Kochhar @physiology.wise.edu. October 26,2010
- [www.fruitsandveggiesmatter.gov/month/okra.html](#). "Fruits & Veggies Matter: Home: Eat a Colorful Variety of Fruits and Vegetables Every Day for Better Health | CDC".
- [www.seedtosupper.com/okra.html](#). A Gardener's Cookbook Series, What To Grow, How To Grow It, And What To Do With It Once It's Grown!
- [www.seedtosupper.com/okra.html](#). A Gardener's Cookbook Series, What To Grow, How To Grow It, And What To Do With It Once It's Grown!
- National Research Council "[Okra](#)". [*Lost Crops of Africa: Volume II: Vegetables*](#). (2006-10-27). Lost Crops of Africa. 2. National Academies Press. [ISBN 978-0-309-10333-6](#). Retrieved 2008-07-15.
- Fruit and Shoot Borer-Resistant Eggplant. Date Retrieved, September 25, 2012. http://www.infonet-biovision.org/default/ct/116/cropsttp://www.absp2.cornell.edu/resources/factsheets/documents/eggplant_factsheet_20051100.pdf
- Dr. Bissdorf Jewel, ed. 2010. Field Guide to Non-chemical Pest Management in Eggplant Production .Date retrieved, September 25,2012
- Phytophthora Root and Crown Rot in the Garden. Date Published, 08/06. Date retrieved, September 28, 2012. <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn74133.html>
- Dr. French Ronald. Phomopsis Fruit Rot and Blight on Eggplant December 18, 2009. Date Retrieved, September 28, 2012. <http://amarillo.tamu.edu/files/2010/11/PhomopsisEggplantOP.pdf>

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