POSTHARVEST HANDLING

Seed Processing

- Cut fruits lengthwise and scoop out the seeds together with the juice into a container.
- Allow 1–2 days of fermentation to readily remove mucilaginous coating from the seed.
- Rub fermented seeds gently on a screen under running water to remove mucilage coating from seeds.
- Put clean seeds in a pail of water and allow the white immature seeds to float on surface.
- Pour out the water together with the white, unfilled immature seeds and fleshy pulps, leaving the normal seeds at the bottom of pail. Repeat the procedure until seeds are clean.
- Pour the clean seeds on a net bag and air dry 2–3 days.
- Gradually sundry the seeds for 4–5 days to lower moisture content
- Seed yield: 100–300/ha

Packaging/Storage

- For home use, pack the seeds in a thick plastic or paper envelopes and place them in large aluminum cans or large-mouth jars lined at the bottom with charcoal, lime or silica gel.
- Seal the package well.
- Place the seeds in a cool, dry place.
- For large volume, pack the seeds in thick plastic or aluminum lined-packets and seal well. Keep them in a cool and dry place or storage area. The drier the stored seeds and the cooler the storage area, the longer the life of the seed.

COST AND RETURN ANALYSIS

	MD	Unit Cost[1]	Total Cost
A. Labor Cost			
1. Land preparation (mechanized)			
- Mowing		2,164	2,164
- Disking		1,640	1,640
- Harrowing (2x)		2,164	4,328
- Rotavation		3,001	3,001
- Furrowing		1,640	1,640
2. Planting/basal fertilization	5	210	1,050
3. Hilling-up		2,350	2,350
4. Field maintenance			
- Irrigation (Furrow-8x) 2 MD/irrigation	16	210	3,360
- Sidedressing	2	210	420
- Weeding (3x)		3,000	9,000
- Spraying (8x)	16	210	3,360
5. Trellising			
- Posting	10	210	2,100
- Wiring and netting	20	210	4,200
- Vine training (3x)	20	210	4,200
6. Roguing	2	210	420
7. Harvesting/hauling	30	210	6,300
8. Seed extraction/cleaning/drying	30	210	6,300
9. Seed treatment	1	210	210
		Subtotal	**56,043**
B. Supplies and Materials	**Quantity**		
1. Seeds	2 kg	1,800	3,600
2. Fertilizers			
- Complete	3 sacks	1900	5,700
- Urea		1780	14,240
- Muriate of Potash	3	2200	
3. Fungicide			1,500
4. Insecticide			5,000
5. Trellising materials			
- Ipil-ipil poles[2]	1200	7	4,200
- GI wire # 16[3]	600 kg	65	9,750
- Twisted synthetic rope	20 rolls	120/roll	2,400
- Jute sacks	30 pcs	12	360
- Net bag (12 in x 15 in)	40 pcs	10	400
		Subtotal	**47,150**
		Grand Total	**103,193**
C. Seed Store Economics			
1. Cost of production			129,733
2. Seed yield (kg/ha)	Low 100	Medium 200	High 300
3. Gross income (P2,500/kg)	250,000	500,000	750,000
4. Net Income	120,266.70	370,266.70	620,266.70
5. ROI (%)	92.70	285.40	478.11

Based on prevailing prices of labor and supplies as of July, 2008.

[2] Poles for trellis will be used for two seasons, hence cost is divided by two.

[3] Wires to be used for four seasons hence, cost divided by four.

Authors: Agripina O. Rasco, Laureano B. Lanosia Jr, Marilyn M. Beltran, Josefina O. Narciso

Illustration: Isidro R. Morales

Information Bulletin No. 284/2012

For more information, please contact:

Director
Crop Science Cluster-Institute of Plant Breeding
College of Agriculture, UP Los Baños
College, Laguna 4031
Tel. Nos.: (049) 536-5287; 576-0090
Fax Nos.: (049) 536-5287/3438

Executive Director
PCAARRD, Los Baños, Laguna
Tel. Nos.: (049) 536-0015 to 20
Fax Nos. (049) 536-0016/536-7922
Email: pcarrd@pcarrd.dost.gov.ph
Website: http://www. pcarrd.dost.gov.ph

DEPARTMENT OF TRADE & INDUSTRY
BUREAU OF MICRO, SMALL AND MEDIUM ENTERPRISE DEVELOPMENT (BMSMED)
5/F, Trade and Industry Building
361 Sen. Gil J. Puyat Ave. Makati City
Trunkline No.: 751.0384
Tel. Nos.: (02) 897.1693 / 897.7596 / 890.4968
Fax No.: (02) 896.7916 • Email: bmsmed@dti.gov.ph
www.dti.gov.ph

Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD)
Department of Science and Technology (DOST)

Institute of Plant Breeding (IPB)
Crop Science Cluster
College of Agriculture
University of the Philippines Los Baños (UPLB)

Seed Production of CUCUMBER

VARIETY DESCRIPTION

Pilmaria (UPL Cu-6)

- slicing type of cucumber, also good for making pickles and "achara"
- can be harvested 40 days from planting
- yield: 27.5 tons/hectare (t/ha) wet season (WS); 26.5 t/ha dry season (DS)
- more female flowers than male
- fruit is green with small white spines, cylindrical, with no bitter taste
- resistant to watermelon mosaic virus, downy mildew and fusarium wilt
- moderately resistant to leaffolder, aphid and beetle
- IPB-GRRO-released variety

Bituin (UPL Cu-11)

- slicing type of cucumber
- can be harvested 35–40 days from planting
- yield: 25–35 t/ha
- more female flowers than male
- fruit is green with small white spines, 15-18 cm long, and delicious
- moderately resistant to downy mildew, cucumber mosaic virus, and powdery mildew
- moderately resistant to aphid, leaffolder, and beetle
- IPB-GRRO-released variety

ENVIRONMENTAL REQUIREMENTS

- Cucumber is a typical vegetable of the warm temperate and cool tropical areas.
- Optimum temperature for good growth ranges 18^0C-24^0C
- It is short day plant and therefore long, cool nights favor development of more female flowers.
- Low temperature, high humidity and high N-fertilization also stimulate development of female flowers.
- It can be grown in a wide variety of soils, however it grows best on well-drained, fairly fertile sandy loam soil.
- For greater yield, it is best to plant when flowering coincide with the long, cool nights of November to January, and for harvesting to fall on the dry months of the year.

CULTURAL MANAGEMENT

Land Preparation

- Prepare land thoroughly by mechanical means or with the use of animal-drawn implements.
- Make sure to breakdown big clods.
- Space the furrows 75 cm apart.

Planting

- Cucumber is usually direct-seeded but can be transplanted and requires 2 kg seed/ha.
- In the field with 0.75 m furrow rows, plant the first two rows leaving the third row vacant and again on the next two rows, leaving the next row unplanted. This is to provide space to perform other field operations more efficiently within the trellis. Sow 2–3 seeds 30 cm between hills and cover them with a thin layer of soil.

Fertilization

- The rate of fertilization depends on soil analysis, but in its absence, apply about 15 g or 1.5 tbsp complete (14-14-14) per hill before planting and cover with soil. Add a handful of well decomposed manure per hill.
- At early vegetative stage or a month after sowing sidedress about 20 g of a mixture of 2 parts Urea (46-0-0) and 1 part Muriate of Potash (0-0-60).

Thinning

- 2–3 weeks after planting thin out weak seedlings leaving one healthy plant per hill.

Irrigation

- Irrigate immediately after planting to ensure uniform seed germination.
- During the dry months, furrow irrigate every 10 days. Irrigate only when necessary during the wet season. Construct drainage canals at the end of rows to avoid waterlogging.

Weeding

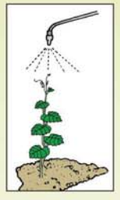
- Thoroughly hand-weed the planted rows.
- Underbrush or rotavate the large spacing in-between rows.

Trellising

- Lay-out 2.5 m long and 2–2.5 in diameter poles, 4–5 m apart along the planted rows.
- Draw the poles together in the two adjacent furrows to form a tepee or A-like structure.
- Connect the poles at the top along the rows with wire (#16) .and tie the top wire to a posted stake at the end of the row to make the poles stable. Connect the poles along the rows in the middle and lower portion of the poles with wire.
- Cut abaca twine or synthetic twisted twine and tie them vertically from the top to the bottom wires in every hill. Intertwine the vine in a counterclockwise manner to the vertical strings.

Insect Pest Management

- **Squash beetle** - yellow colored insect which is most destructive during the first month of the crop. They feed on newly germinated seedlings and tender leaves of the young plant. Spray recommended insecticides if infestation is high.



- **Thrips** - small-bodied insects found on the underside of the leaves, sucking plant sap. Leaves turn bronze in color and later dry up. Spray insecticides judiciously, preferably late in the afternoon.

Disease Management

- **Powdery mildew** - powdery or cottony appearance on the surface of the leaves. Remove diseased leaves to prevent the spread of the disease. Spray Mancozeb fungicide to control the disease.
- **Downy mildew** -the disease appears as yellow spots on the leaves with purplish yellow growth on the lower surface. The yellow spots turn to brown and leaves finally wither and die. Proper sanitation and good crop rotation help prevent the disease. It can also be prevented by Mancozeb fungicide application 10 days after germination. Weekly application of Metalaxyl-Mancozeb fungicide helps control the disease.
- **Anthracnose** - leaves and fruits become dotted with reddish-brown to black spots and ultimately fruits show scorched appearance and later rot. This disease is seed transmitted. Collect and burn all the decaying vines, and seeds from diseased fruits, so that fungus cannot infect further. Do not plant any cucurbit in the infected field for 2 years.
- **Mosaic virus** - exhibits stunting, shortening of internodes, loss of vigor, yellowing or chlorosis of the leaves. Young leaves are first affected, resulting to the stunting and mottling of the leaves. Rogue out infected plants from the field. Since beetles, white fly and aphids spread virus, spray the crop if the population of these insects is high.

Pollination/Isolation

- Introduce bee colony in planting area if bee population is low, or hand pollinate female flowers every early morning.
- Flowers open in the morning and remain receptive the whole day.
- Cucumber is cross-pollinated and requires an isolation distance of at least 500 m to maintain purity of variety.

Roguing/Field Inspection

- Remove off-types.
- Conduct field inspection at early vegetative stage, flowering stage, and fruiting stage.
- At vegetative stage, check the leaf size, shape, color, vigor, and vine trailing habit.
- At flowering and early fruit development, observe for shape and color of the ovaries, shape and color of fruits, and general appearance.
- Do the final roguing for fruit shape and color when fruits are maturing.

Harvesting

- Harvest as yellow streaks appear on the fruits.
- Store the fruits in a cool dry place
- Extract the seeds when fruits have turned full yellow.