

Introduction

Soybean (*Glycine max*) is a legume crop known in the Philippines as "utaw" which grows up to 1.5 meters tall, depending on variety. Its seed is rich in protein [35-40%] comparable to that of milk and egg, oil [25%], vitamins and minerals. It is used for the making of soy sauce, tofu, soymilk, tokwa and other food and wellness products. Likewise, it is a major protein ingredient in the formulation of livestock and poultry feeds. Soybean is an ideal intercrop, rotation and relay crop on a cereal based farming systems.

The BPI-La Granja NCRDPSC together with the IPB of UP Los Baños is working on the varietal improvement of soybean to produce high yielding varieties through the support of the Bureau of Agricultural Research.

Recommended Varieties for Organic Seed Production

Variety & Cultivar	Potential Yield/ha		Maturity (days after sowing)		Characteristics
	WS	DS	WS	DS	
PSB Sy 1	2.85	1.94	95	89	Resistant to soybean rust & bacterial pustule
PSB Sy3	2.42	2.04	98	85	Resistant to soybean rust and bacterial pustule
PSB Sy 8	2.68	1.97	91	83	Resistant to soybean rust and bacterial pustule
PSB Sy 6 (Tiwala)	2.19	2.08	100	92	Resistant to soybean rust and bacterial pustule
Lg Sy 9956	2.71	1.67	95	92	Resistant to Bacterial Pustule and Rust and moderately resistant to Cercospora Leaf Spot

Ecological Requirement

Soil. Soybean thrives on well-drained, fertile, loam to clay loam soil with pH of 5.8-6.5. Recommended planting should done on early May for best yield performance.

Climate. It grows in any part of the Philippines except on Type 2 climate with heavy rainfall.

Cultural Management

Land Preparation. Plow and harrow the field alternately at weekly interval to eradicate weeds and achieve good soil tilth. Set furrows at 60 cm apart and about 4-5 cm deep.

Planting. Seed requirement per hectare is 40-60 kg. Drill 18-20 seeds in furrows per linear meter and cover thinly with soil. If Rhizobium inoculant is available, inoculate the soybean seeds before planting.

Fertilization. Before planting, apply 2-5 t/ha of vermi-compost. Spray weekly fermented plant juice or vermi tea starting 15 days after planting until 30 days. Follow it up with weekly spraying of FFJ starting at 37 days up to maturity at the rate of 2 tbsp/li water.

Weeding and Cultivation. Pass a carabao drawn cultivator or plow to eradicate weeds. This can be done as early as 2 weeks. Handweed remaining growing weeds and hill-up thereafter.

Pest Control Strategies

Biological Control - Apply *Trichogramma chilonis* at rate of 200 strips/ha at weekly interval starting 20 DAP after germination up to flowering stage. Applying Assassin bug (1,000 nymphs or adult/ha) at the onset of flowering up to pod development. In addition, spraying of Oriental Herbal Nutrient (OHN), fermented langkawas and vermi tea can also be employed.



Common Insect Pests



Soybean pod borer
(*Etiella zinckenella* (Treitschke))



Green stink bug or green soldier bug
(*Nepa viridula* (L.))

Cultural Management



1. Soybean rust

Phakopsora pachyrhizi

Control Measures

- Plant resistant and early maturing varieties
- Spray OHN (Prevention) M5-plus (Control)
- Crop rotation and field sanitation must be practiced



2. Soybean Mosaic

Control Measures

- Plant resistant and early maturing varieties
- Weekly spraying of EM5 plus or fermented camantigue to control aphids (vector of soybean mosaic)
- Practice crop rotation and field sanitation

Harvesting, Drying and Threshing. Soybean is ready to harvest when 95% of its leaves have turned yellow or fallen. Cut plants at the base, then sun dry. Thresh using flails or a modified rice thresher. Clean and sun-dry soybean grains in 2 to 3 days or until moisture content is reduced to 12-13%.

Seed Selection. Discard infected and damaged soybean seeds including other seeds and varieties. **Seed Sampling and Analysis.** For seed production, soybean seeds must be submitted to BPI NSQCS for sampling and analysis. Visit its nearest Seed Laboratory in your area.

Storing. For planting purposes, place seeds in airtight containers and store in a dry, cool place or in an air-conditioned room. Submit your soybean seeds for sampling and analysis to the BPI NSQCS.

For commercial use, soybean grains can be placed in ordinary sacks and stored in dry place until they are sold or disposed.

COST AND RETURN ANALYSIS

Inputs	Unit	Qty	Unit Price [Php]	Total (Php)
A. MATERIALS				
Soybean Seeds	kg	50	90	4500
Organic Fertilizer	bag	40	300	12000
FPJ	li	2	300	600
FFJ	li	4	300	1200
OHN/vermi tea	li	3	100	300
Botanical Pesticide (EM5-plus)	li	4	300	1200
Plastic Twine	roll	2	60	120
Sacks	pc	150	8	1200
SUB TOTAL				21120
B. LABOR				
Land Preparation				
Plowing, 2x	MD	10	220	2,200
Harrowing, 2x	MD	8	220	1760
Furrowing	MD	5	220	1100
Organic Fertilizer Application	MD	4	220	~ 880
Planting	MD	8	220	1760
Off-baring	MD	2	220	440
Hand weeding	MD	10	220	2200
Hilling-up	MD	2	220	440
Spot weeding	MD	3	220	660
Spraying NFS	MD	12	220	2640
Harvesting, and Post-harvest Processing	MD	20	220	4400
SUB TOTAL				18,480

Contingency 10%)				3960
Total Cost of Production				43560
Gross Income Seed Yield- 1000 kg Php 70.00 per kg				70000
Net Income (P)				26440
ROI %				60.7

Legend:

MD=manday, kg= kilograms, li= liter, pc= piece

Credits

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692 San Andres St. Malate, Manila

Tel. (02) 525-7313

Email: bpi.da.organic@gmail.com

Website: www.bpi.da.gov.ph



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LA GRANJA NATIONAL CROP RESEARCH,
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ORGANIC SOYBEAN SEED PRODUCTION

