

This production guide is made for the purpose of providing information for those who wish to engage in the production of peanut (*Arachis hypogaeal* L.) seeds using techniques adhering to organic agriculture.

VARIETY SELECTION

NSIC Pn 13 has been tried under organic culture. It yielded 800 to 1,000 kg pods per hectare.

ECOLOGICAL REQUIREMENT

It is recommended to establish your seed farm in upland plain or slightly rolling areas with good drainage. Water sources and roads should be easily accessible. A temperature between 26°C to 34°C is necessary for optimum growth. Peanut grows best in light soils like sandy loam, silty loam or silty clay loam with soil pH of 5.8 to 6.5 and high organic matter. Ensure that the site is free from contaminants by choosing land that has not been previously applied with synthetic fertilizers or pesticides. You may also use an area that has not been cultivated before (i.e. virgin land).

CULTURAL MANAGEMENT

Land Preparation - Peanut requires a thoroughly prepared field to provide favorable conditions for good crop establishment as well as conditions necessary for effective weed control and proper pod development. Plow and harrow the field 2 to 3 times at weekly interval to allow weed seeds to germinate, and achieve good soil tilth or soil condition. Set furrows 50 - 60 centimeters apart to allow relative ease of weeding, cultivation and spraying without disturbing the growing peanut crop. If possible, rows should run from east to west direction to allow better light interception of the crop. Furrow when the soil has the right moisture for planting or when soil does not stick to the plow during the operation.

Liming - Peanut production is not profitable in areas with soil pH below 5.8. This can be corrected by adjusting soil pH through application of lime.

Fertilization - As a general recommendation, apply 1-2 tons of organic fertilizer or vermicast drilled in furrows before planting. In order to have specific organic fertilizer recommendation in your area, soil sampling and analysis should be done before crop establishment.

Planting - About 150 kilograms unshelled peanut or 90 to 100 kilograms of shelled peanut seeds are needed per hectare. Sow 1 to 2 peanut seeds per hill and cover with fine soil of about 2 to 3

Application of Naturally Fermented Solution (NFS) - Naturally fermented solutions are sprayed 15 days after planting (DAP) until 30 DAP. Do weekly spraying of fermented plant juice (FPJ) at 2 tablespoons per liter of water.

Application of Calcium Nutrient - Starting 37 days up to 75 days after planting, spray weekly Calcium Nutrient at 2 tablespoon per liter of water.

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Roguing - Remove off-types and diseased plants.

COMMON WEEDS AND THEIR CONTROL

Weeds could significantly reduce yield and often harbor insect pests and diseases. Weed control is more critical in peanut production than in other crops because peanut grows slowly and do not compete well with weeds. Hence, weeds should be controlled during the first 4 - 8 weeks after planting.

Rottboellia cochinchinensis (Lour.) locally called itchgras or bugang in Ilonggo, agingay in Tagalog, bukal in Cebuano, gaho in Bicolano, and marapagay in Ilocano, is the most troublesome weed associated with peanut. It produces approximately 5,000 viable seeds per plant per year. It remains viable for a year or longer, resulting in flushes of germination. Other weed species that can suppress peanut growth are the grasses *Eleusine indica* L. (palagtiki, sabung-sabungan, dog's tail), the sedge *Cyperus rotundus* L. (Boto-botones, sur-sur or sud-sud, and malapandang), and broadleaf *Ipomea tribola* L. ('kamote-kamotehan' and baging')

The following cultural practices could help control weeds:

1. Practice thorough land preparation by alternate plowing and harrowing at weekly interval.
2. Off-bar by passing a cultivator or a carabao drawn plow in between rows of peanut 20 to 25 days after planting to eradicate the germinating and growing weeds.
3. Follow up off-barring by handweeding to remove remaining weeds especially those near the base of the peanut plants. After handweeding, hill-up by passing acarabao drawn plow between the rows of peanut to cover the developing pods and improve crop anchorage.

4. In addition, it may be necessary to do spot weeding from time to time during the growth and development period of the peanut crop particularly when weed population is still high. However, caution must be observed not to disturb the developing pods.

COMMON PESTS OF PEANUT AND THEIR CONTROL

Pod borers, aphids, cutworms, termites are the common pests of peanut. For pest control, spray oriental herbal nutrient (OHN), fermented camantigue, and fermented langkawas at the rate of 2



POD BORER

figure 1



APHIDS

figure 2



TERMITE

figure 3



CUTWORM

figure 4

tablespoons per liter of water.
You can also spray EM5 plus at the rate of 1 teaspoon per liter of water.

COMMON DISEASES AND THEIR CONTROL

Cercospora leaf spot, rust, stem rot, and bud necrosis are among the common diseases of peanut. For their control, spray agrobacterial concoction (ABC), OHN, and vermitea at the rate of 2 tablespoons per liter of water. EM5 plus can also be used at the rate of 1 teaspoon per liter of water.

HARVESTING AND POST HARVEST HANDLING

Harvesting - Peanut should be harvested at the right stage of maturity. Harvesting is normally done by passing a carabao drawn plow between furrows beforehand pulling or uprooting the plants. It requires 6 to 23 man-days to harvest a hectare.



Figure 1. (A) *Cercospora* leafspot (B) Rust (C) Stem Rot (D) Bud necrosis

The maturity of peanut can be determined by the following indications: (a) gradual withering and yellowing of the leaves; (b) expected maturity date of variety (90-110 days); (c) physiological maturity is also indicated by hardness of most of the pods, 70 - 80% of pods have prominent veins, inner portion of the shell turns dark; vascular strands on the shell becomes more distinct; seed coat has the color of the genotype; and seed kernels are plump and full grown. NSIC Pn 13 can yield 800 to 1,000 kilograms of dry pods (for seed purposes) per hectare.

POSTHARVEST HANDLING

Pod Picking

Peanut pods are picked right after harvesting. Pods are immediately sun dried to prevent deterioration. Picking is done in such a way that the peduncle (stem attached to the pod) does not go with the pod.

Sundrying of Pods.

Dry the newly picked pods until 8 to 10 percent moisture content is achieved. This is done by sun drying pods for 4 to 5 days. Spread selected pods uniformly into the drying floor, turning them from time to time. Care should be observed not to damage the peanut pods.

Pod Selection

For seed purposes, only sound, mature, clean and well-filled peanut pods must be selected.

LABELING, PACKAGING AND STORAGE

For labels include lot code, name of crop, variety, pod weight in kilograms and date harvested. For seed purposes, peanuts are stored unshelled maintaining seed viability for about six months. After the last sundrying, allow the dried peanuts to cool for about 6 to 12 hours. Store the dried pods in a tightly closed storage container (if available) to prevent entry of air and moisture. Place storage containers inside a dry and rain protected sttttstructure. Before use, open the seed storage container 3 to 5 days before planting

In the absence of tight containers, dried peanut pods are placed in sacks and stored in a well-ventilated room or inside a cold storage. Sundry the seeds for a few hours a day prior to planting as moisture content may have increased in the peanut seeds during storage.

COST AND RETURN ANALYSIS

INPUTS	UNIT	QTY	UNIT COST (Php)	COST PER /HA (Php)
A. MATERIALS				
Seeds (Unshelled)	kg	125	125	8,750.00
Commercial organic Fertilizer	bag	40	40	12,000.00
Fermented Plant Juice	L	2	2	600.00
Fermented Fruit Juice	L	4	4	1,200

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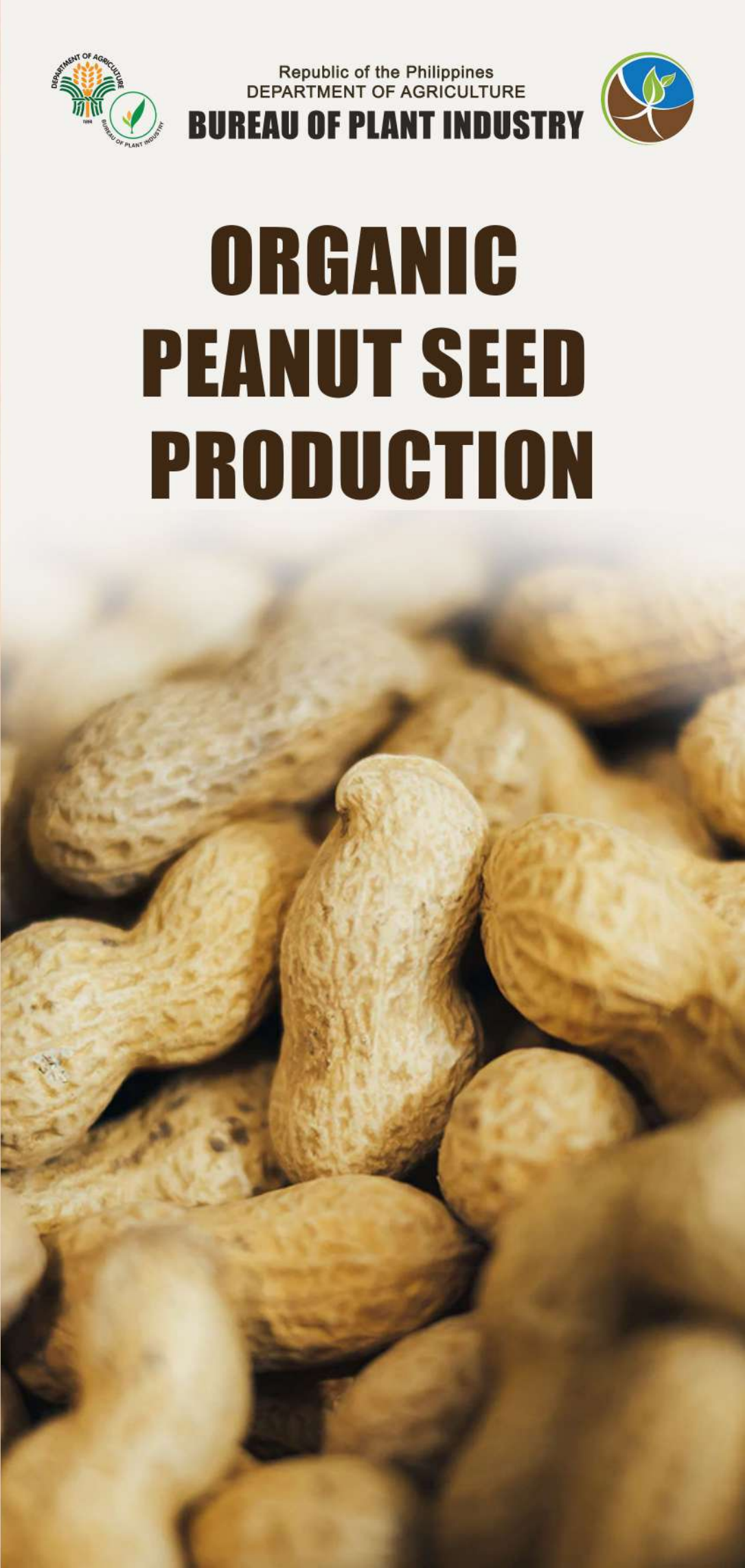
INPUTS	UNIT	QTY	UNIT COST (Php)	COST PER /HA (Php)
A. MATERIALS				
Fermented Calcium Nutrient	L	3	100.00	300.00
Botanical Pesticides (EM5-plus)	L	4	300.00	1,200.00
Plastic Twine	roll	2	60.00	120.00
Sacks	pcs	150	8.00	1,200.00
Sub Total				25,370.00
B. LABOR				
Land Preparation				
Plowing (2x)	Man-days	10	220.00	2,200.00
Harrowing (2x)	Man-days	8	220.00	1,760.00
Furrowing	Man-days	5	220.00	1,100.00
Organic Fertilizer Application	Man-days	4	220.00	880.00
Planting	Man-days	8	220.00	1,760.00
Off-baring	Man-days	2	220.00	440.00
First handweeding	Man-days	10	220.00	2,200.00
Hilling-up	Man-days	2	220.00	440.00
Spot weeding	Man-days	3	220.00	660.00
Spraying of FPJ, FFJ &EM5-plus	Man-days	12	220.00	2,640.00
Harvesting, handpicking, sundrying & packing	Man-days	20	220.00	4,400.00
Sub Total				18,480.00
Contingency Allowance (10%)				.4,385.00
Total Production Cost				48,235.00
Gross Income	1,000 kg pod yield at Php70.00/kg			70,000.00
NET Income (Php)				21,765.00
Return of Investment (%)				45.12



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DEPARTMENT OF AGRICULTURE
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