



DEPARTMENT OF AGRICULTURE

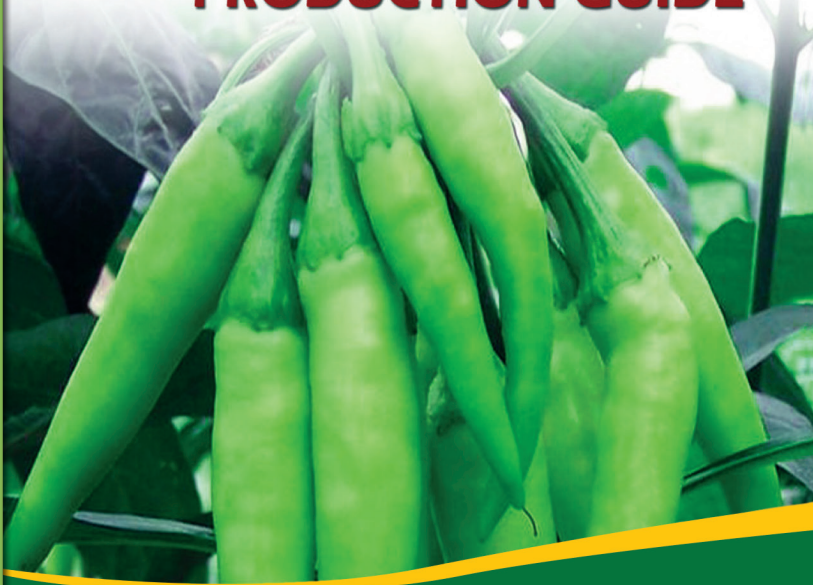
Regional Field Office No. 02

Tuguegarao City, Cagayan



PEPPER

PRODUCTION GUIDE





Pepper

Production Guide

This Publication is a project of the **Department of Agriculture, Regional Field Office No. 02, High Value Crops Development Program**. It contains the most recently available and locally adaptable technical information on **Pepper Production** in Region 02.

February 2017

INTRODUCTION

Pepper is one of the common vegetables that belong to the Nightshade or *Solanaceae* family. It is a popular vegetable ingredient for Filipino dishes. It is used in the preparation of sauces, pickles and as flavoring ingredient of various recipes. The large varieties are stuffed and baked. Sweet pepper (*Capsicum annuum L.*) is very rich in Vitamins C and A and a good source of B vitamins, potassium, magnesium and iron. The green leaves are excellent source of calcium.

Hot pepper (*Capsicum frutescens L.*) in particular, is a favorite mix in pinakbet and sinigang because of its aroma. It is also being grown for its medicinal and pharmaceutical properties. It alleviates pain in arthritic patients and helps lower the risk of diabetes.

Soil and Climatic Requirements

Pepper grows in any type of soil; however, it performs best in sandy loam to clay loam soils rich in organic matter with sufficient moisture and good drainage.

Pepper is a sun-loving crop. It is usually planted from May to September during the wet season and October to February during the dry season.

Varietal Selection

For better yield and profit, select varieties that are adaptable to local conditions, resistant to insect pests and diseases and with market preference as presented in Table 1.

Table 1. Recommended Varieties of Pepper Adapted in Region 2

Variety	Maturity (DAT)	Fruit Type		Features
		Color	Shape	
Aruy-uy Sweet OP	60		Pendant	All season, good for fresh market (Pinakbet type)
Dolorosa (Aligrow)	53	Medium green becoming red when ripe	Pointed	Year round, slightle wrinkling fresh; with moderately pungent taste
Labonete Hybrid	50		Long tapering	All season, thick flesh, moderately pungent
Django F1	40	Medium green, smooth and very glossy	long tapering	All season, thick flesh, moderately pungent
Hot Express	88	Medium green	Pointed	All season, produce 100-120 fruits per plant

SEEDLING ESTABLISHMENT

There are two methods of raising seedlings: the seedbed method and the use of seedling trays or potlets.

Seedbed Method

Choose a level area fully exposed to sunlight, accessible to source of water, with good drainage and provided with windbreaks. Plow and harrow the field alternately until the soil attained fine tilt. Construct five (5) seedbeds measuring 1x10 m at 15 cm high.

Sterilize the seedbed to kill weed seeds and pathogens present in the soil. To sterilize, moisten the prepared seedbed for better heat penetration. Spread about 3 to 5 cm thick of either rice straw or rice hull on top of the seedbeds and burn slowly. Remove unburned materials and excess ash. To avoid toxic effects of the burned materials, do not sow seeds immediately after sterilization.

Seedling Tray/Potlets

Raising seedlings in tray or potlets requires less seeds, promotes uniform growth of seedlings, minimizes transplanting shock and lessens seedling mortality. It also saves labor for thinning, weeding, watering, and pest management.

Prepare soil mixture or media composed of one (1) part compost, one part carbonized rice hull (CRH), and one part garden soil. Sterilize the garden soil by roasting method. Mix the garden soil with the othe media one (1) day after sterilization.

Fill the holes of the trays or potlets with the media. Use seedling trays with 100-104 holes. Commercial or ready-mixed growing medium are also available from agriculatural dealers in the locality.

Sowing

A hectare of farm requires 100-200 g of seeds. One gram is approximately 250 seeds. To hasten germination, soak the required amount of seeds in clean water overnight. Air-dry the seeds before sowing.

Water the seedbeds before sowing. Prepare rows at a distance of 5 cm with the use of a stick. Drill the seeds evenly in the furrows and cover with fine soil.

When using seedling trays or potlets, sow one seed per hole or potlet at a depth of 1.0 cm and cover with fine soil. Sprinkle the trays/potlets with water after sowing.

Care of Seedlings

Water the seedlings preferably in the morning. The amount of water to be applied should be just enough to keep the soil moist. Over-watering favors damping-off and production of weak seedlings.

Thin seedlings that are over-crowded 3-5 days after emergence (DAE) or when the seedlings have developed the first 2-3 true leaves. Prick the thinned seedlings in seedbeds, trays or potlets intended for this purpose. Water the pricked seedlings and place in a shaded area until these have recovered.

To produce healthy seedlings, apply starter solution of 2 tbsp

ammonium phosphate (16-0-0) or complete fertilizer (14-14-14) dissolved in 4 liters of water at 10 DAE. Drench the solution evenly to the seedlings. Water the seedlings after applying the fertilizer solution to prevent leaf injury.

Protect the seedlings from excessive sunlight and rain. Construct a temporary shade using locally available materials such as cogon, talahib or coconut leaves and recycled plastic sack. Put posts of the shade about 120 cm high on the east side and about 60 cm high on the west side.

One week before transplanting, harden the seedlings to prepare them to direct field condition. Gradually expose the seedlings to direct sunlight. For the first day, expose the seedlings up to 10 o'clock in the morning and increase duration every day until the seedlings can withstand the heat of the sun the whole day. However, make sure that the seedlings do not wilt severely. Hardening could also be done by gradually reducing the amount of water and frequency of watering.

CULTURAL MANAGEMENT PRACTICES

Land Preparation

Prepare the land thoroughly to prevent the growth of weeds. Plow and harrow the fields alternately 2-3 times at one week interval to attain good soil tilt.

Prepare furrows at a distance of 80 cm. Pepper can be planted in double-row method. Prepare furrows in pairs at a distance of 35 cm between the two rows and 75 cm between double rows. Planting in doubles rows provides the developing fruits adequate protection against sun burning.

Transplanting

Transplant the seedlings 30-40 days after sowing (DAS). Prior to transplanting, water the seedbeds to facilitate pulling. Pull seedlings carefully using a trowel or pointed stick. Do not wash or remove the soil adhering to the roots to minimize root injury and promote

faster recovery. If seedlings are raised in trays or potlets, transplant the seedlings together with the soil media. Transplant during cloudy days or late in the afternoon to avoid wilting.

During the dry season, pepper is usually planted in furrows at a distance of 30 cm between hills. Plant pepper in ridges or raised beds during the wet season to prevent rotting of seedlings.

Fertilizer Application

To achieve optimum yield, apply the right kind and amount of fertilizer at the right time. To determine the fertilizer requirement of the crop, submit soil samples for analysis at the Regional Soils Laboratory of the Department of Agriculture, Regional Field office No. 02, Tuguegarao City, Cagayan or at Ilagan Soils Laboratory, Ilagan City, Isabela. In the absence of soil analysis, follow the general recommendation indicated in Table 2.

Table 2. Fertilizer requirement for pepper.

Method of Application	Kind of fertilizer	Quantity (per hectare)	Time of Application
Basal	Complete (14-14-14)	4 bags	Before planting
	Ammonium Phosphate (16-20-0)	4 bags	
Side-dress	Ammonium Sulfate (21-0-0)	2 bags	10 DAT
	Urea (46-0-0)	2 bags	30 DAT
	Muriate of Potash (0-0-60)	2 bags	
	Urea (46-0-0)	2 bags	50 DAT
	Muriate of Potash (0-0-60)	4 bags	

Irrigation

Water is very important especially during the dry months to produce good quality fruits. Depending on soil moisture, irrigate the field 4-5 times from transplanting to first harvest, as follows:

- | | | |
|-----|---|-----------------------------------|
| 1st | - | at transplanting |
| 2nd | - | 14 days after transplanting (DAT) |
| 3rd | - | 30 DAT |
| 4th | - | 50 DAT |

Final irrigation is done a week before harvesting.

Weeding and Cultivation

Weeds compete with the crop for nutrients, sunlight and moisture. Prevent the growth of weeds by off-barring at 10 DAT followed by hilling-up at 30 DAT. Hilling-up also facilitates irrigation. Avoid deep cultivation to prevent root injury to the plants. Hand weed between hills.

Pest Management

Various pests affect pepper vegetable during its growing period. Insect pests and diseases reduce yield, lower the quality of produce and increase cost of production.

The common insect pests of pepper are aphids, spider mites and leaf hoppers. The most destructive diseases are bacterial and wilt and anthracnose.

Prevent the occurrence of pests by practicing field sanitation, plant resistant varieties, crop rotation and as last recourse, spray pesticide following the manufacturer's recommended dosage. In case of disease infection, pull and burn infested plants.

Harvesting

Harvesting of pepper starts at 60-75 DAT. Harvest pepper at the mature green stage; when the fruits have attained full size and appear waxy and shiny. Harvest only fruits in good shape and color, and fresh in appearance. Pick the fruit by breaking the pedicel with an upward twist or by cutting the peduncle with a sharp knife.

Classify the fruits according to size and ripeness. Discard

damaged or rotten fruits before packing. Pack in polyethylene plastic bags or boxes before marketing.

COST AND RETURN ANALYSIS FOR ONE HECTARE HOT PEPPER PRODUCTION

A . Labor Inputs

PARTICULARS	QUANTITY 1/		VALUE IN PESO (P)
	Man-days	Man-Animals-days	
1. Seedbed Preparation			
a. Digging and pulverizing	4		1,000.00
b. Levelling	2		500.00
c. Sowing, watering & spraying	7		1,750.00
2. Land Preparation			
a. 1st Plowing		8	3,200.00
b. 1st Harrowing		4	1,600.00
c. 2nd Plowing		5	2,000.00
d. 2nd Harrowing		3	1,200.00
e. Furrowing		2	800.00
3. Basal Fertilization	4		1,000.00
4. Transplanting	15		3,750.00
5. Care of the Plants			
a. Watering (3x a week up to 8th week or at flowering)	24		6,000.00
b. Weeding and cultivation	10		2,500.00
c. Side dressing of fertilizer	7		1,750.00
d. Hilling-up		5	2,000.00
e. Control of pests and diseases	18		4,500.00
6. Harvesting, sorting and packing	50		12,500.00
7. Hauling	5		1,250.00
Sub-Total			47,300.00

B. Material Inputs

Materials	Quantity	Unit Cost (P) 2/	Amount (P)
1. Seeds (OPV)	200 g	750.00	750.00
2. Fertilizer			
- Complete (14-14-14)	2 bags	1,900.00	3,800.00
- Ammonium sulfate	1 bag	1,900.00	1,900.00
- Organic fertilizer	20 bags	200.00	4,000.00
3. Insecticides	3bottles	850.00	2,550.00
4. Fungicides	2 packs	350.00	700.00
5. Fuel	40 liters	40.00	2,000.00
5. Polyethylene	1250 pieces	5.00	6,250.00
7. Miscellaneous			1,500.00
Sub-Total		23,450.00	23,450.00
Sub-Total (A&B)		53,450.00	70,750.00
C. Contingency (15% of the total labor & material inputs)		8,017.50	10,612.50
GRAND TOTAL		61,467.50	81,365.50
Yield /ha (kg)	15,000	3/	
Gross Income		20.00/kg	300,000
Net Income		98,532.50	218,637.50
Return on Investment (ROI)		160.30	268,727

1/ Man-days = P250 MAD - P400

2/ Cost of items as of December 2015

3/ Farm Gate Price

EDITORIAL STAFF

Writers / Editors : **Cherrybel O. Cubero**
Prisca B. Baquiran

Technical Editors : **Leonida A. de Guzman**
Mayda P. Callueng

Layout Artist : **Erwin C. Cachero**

Editor-in-Chief:

HECTOR U. TABBUN

Information Officer III

Chief, Regional Agricultural & Fisheries Information Section
(RAFIS)

Consultants:

ROBERT B. OLINARES

OIC, Regional Technical Director for Operations

ORLANDO J. LORENZANA

Regional Technical Director for
Research and Regulatory

LUCRECIO R. ALVIAR JR., CESO III

Regional Executive Director

Produced By:

High Value Crops Development Program (HVCDP)

Contact No. (078) 846-3379

**Regional Agricultural and Fisheries Information
Section (RAFIS)**

Contact No.: (078) 304-0562

Email Address: da_agcom@yahoo.com /
darfu02_agcom@yahoo.com