

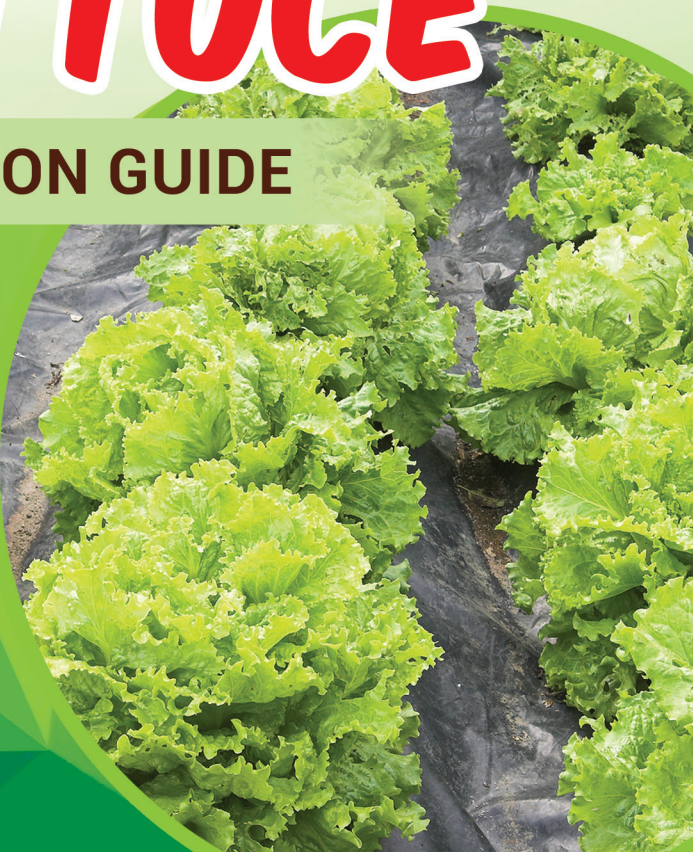


DEPARTMENT OF AGRICULTURE
Regional Field Office No. 02
Tuguegarao City, Cagayan



LETTUCE

PRODUCTION GUIDE





Lettuce

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 **Lettuce Production** in Region 02.

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Introduction

Lettuce (*Lactuca sativa l.*) is the most popular salad vegetable. Its high fiber content makes it an ideal vegetable for those who watch their diet. There are many types of lettuce. The most popular locally is the crisphead type which includes green and light green varieties. The loose-type includes red, bronze, dark green, apple green, and chartreuse varieties. Other types are Romaine/Cos and Butterhead.

The top producers are the Cordillera Administrative Region, Region 10 and region 7.

Nutritional Value

Per 100 g edible portion, the leaves contain:

<u>Properties</u>	<u>Amount</u>
Water (g)	94.0
Protein (g)	1.2
Fat (g)	0.2
Fiber (g)	0.2
Ash (g)	0.7
Energy Value	50

However, nutritional properties differ among lettuce types. Leafy types contain more micronutrients than headed types. Dark green types have more carotene, iron and vitamin C. Butterhead types are relatively more nutritious than crisphead lettuce.

Production Management

Variety

Below are some commercial varieties of lettuce that are highly recommended:

Crisphead Type

Bravo	Great Lakes 54
Grande	President

Loose leaf Type

Corelle	Green Span	Fanfare
Falbala	Lollo Bionda	Red Rapid
Grand Rapids	Lollo Rosa	Altima
Green Coral	Panorama	

Butterhead Type

Great Lakes	Okayama Salad
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Romaine/ Cos Type

Green Towers	Tyrol
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Seedling Production

About 150-200 g of seeds are required per hectare. Prepare five seedbeds measuring 1 x 10 m each. Pulverize the soil, incorporate 1 kg fully decomposed chicken manure and 300 g carbonized rice hull/m². Wet the seedbeds and make shallow lines 7-10 cm apart. Soak the seeds in warm water for hours, air dry, and sow thinly. Cover lightly with soil and mulch with rice hull, chopped rice straw or coir fiber. Prick to nursery trays at two-leaf stage with vermicompost for easier recovering of pricked seedlings. Water regularly. Provide partial shade during the dry season and rain shelter during rainy season. Harden seedlings one week before transplanting by decreasing the frequency of watering and by exposing fully to sunlight to minimize transplant shock. Transplant at three weeks after pricking.

Land Preparation

Plow and harrow the field twice. Prepare raised beds 1m wide and 0.75 m apart. Incorporate 1 kg fully decomposed chicken manure and 300 g carbonized rice hull or vermicompost fertilizer per square meter. Apply rice straw mulch or mulching film. Make holes using heated tin cans 7-10 centimeter in diameter. The holes maybe spaced between hills 30-40 cm, 2 rows/bed for crisphead, and 3 rows/bed for loose leaf types.

Transplanting

Bring out soil from the prepared holes and replace with vermicompost organic fertilizer. Water the holes thoroughly. Transplant 1 seedling/hill, press the soil around the plant for easier seedling recovery. During sunny days, transplant in the afternoon to minimize transplant shock. Replant missing hills at once.

Fertilization

During transplanting, apply 10 g/hill 14-14-14 (complete fertilizer) as basal fertilizer. At 15 and 30 days after transplanting, sidedress with a 1:1 mixture of 46-0-0 (Urea) and 0-0-60 (Muriate of Potash) at the rate of 5 g/ plant for crisphead varieties. Loose leaf varieties need only one sidedressing of 46-0-0 at the rate of 5g/plant at 15 days after transplanting.

Apply manure tea and fermented plant juice once a week to increase plant vigor and resistance to pests and fungal diseases.

To prepare manure tea soak $\frac{3}{4}$ sack dry (30 kg) of cow or horse manure in a plastic drum filled with 180 L water for seven days and use as foliar fertilizer or as soil drench. To prepare fermented plant juice, mix chopped actively growing plant parts with equal amounts of molasses or brown sugar. After one week of fermentation, extract the juice and apply as foliar fertilizer at 1 tbsp/3.785 L water.

Pest and Diseases Management

Semi-looper and aphids are two major pests of lettuce. Prepare hot pepper solution by mixing 100 g macerated hot pepper in 16 L water. Add 1 tbsp soap and use as botanical spray against these pests. Bacterial rot can be minimized by mulching and solar sterilization for one week of prepared beds before transplanting.

Harvesting and Postharvest handling

Harvest crisphead lettuce at 45-60 days from transplanting or when heads are firm. Harvest loose leaf lettuce as needed, preferably before bolting.

For large-scale planting, sort the heads in the field and pack immediately in perforated cardboard boxes. If available, vacuum cooling to 1 °C is best. Transport at 4 °C.

Costs and Return Analysis Per Hectare

ITEMS	AMOUNT
VARIABLE COSTS	
A. Labor (250/ MD; 300 MAD)	
Plowing (6 MAD)	1800
Harrowing (6 MAD)	1800
Bedding (5 MAD)	1500
Manure Application (10 MD)	2500
Seedling Production (20 MD)	5000
Mulching with rice straw (20 MD)	5000
Transplanting (15 MD)	3750
Replanting (2MD)	500
Fertilization: basal (2 MD)	500
Sidedress (4 MD)	1000
Irrigation (5 MD)	1250
Spraying (5 MD)	1250
Weeding (5 MD)	1250
Harvesting (15 MD)	3750
Washing/sorting/packing (20 MD)	5000
Sub-total	P3,5850

B. Materials	
Seed (200 g/ha)	18000
Commercial organic fert (20 bags)	5000
Fertilizer:	
14-14-14 (2 bags)	2000
46-0-0 (3 bags)	2940
0-0-60 (2 bags)	4000
Pesticides/ Fungicides	5000
Miscellaneous	
Sub-total	P4,1940
Total Cost	P7,7790

Gross Income

Regular Seson (12t/ha @ P20/kg 240,000

Off Season (10 t/ha @P30kg 300,000

Net Income

Regular Season- P240,000- P77,790 = P162,210

Offseason P300,000- P77,790 = P222,210

References:

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