Harvesting

1. Harvest 4-5 months from shooting or when fruits already have clearly visible angle about ½ of their maximum size, less prominent or virtually disappearing angles.
2. Cut back the pseudostem at a height of 1.5 m after the bunch is removed.

Postharvest Handling

1. Dehand the bunch with a dehanding tools leaving as much crown as possible in the hand for easy handling.
2. The cheapest means of ripening the fruits is by the use of Calcium Carbide (CaC2) and Kakawate leaves or Madre de Cacao.
3. Package the fruits using bamboo basket or 'kaing'.

Sources of Information:
Commercial Banana Production, DNCRDC Technoguide No. 01 Series 2010..
The Philippine Recommends for Banana. Series No. 66-A, PCARRD-DOST, 1992.

Prepared by:

May P. Loquias
Senior Agricuturist

For more information, please contact:

Dr. Lorna E. Herradura
Agricultural Center Chief IV
Bureau of Plant Industry
Davao National Crop Research, Development
And Production Support Center
Bago Oshiro, Davao City
Tel. No. 082-293-0108
E-mail: lorna_herradura@yahoo.com

Ms. Arceli G. Yebes
Research Cordinator/Agriculturist II
Bureau of Plant Industry
Davao National Crop Research, Development
And Production Support Center
Bago Oshiro, Davao City
Tel. No. 082-293-0108
E-mail: researchbpi@gmail.com
E-mail: lorna_herradura@yahoo.com

Five-year Estimated Cost & Return of a One-Hectare Cardaba Banana Farm

YEAR	Harvestable Fruits (kg)	Gross Income (P)	Establishment Cost (P)	Weeding Cost (P)	Fertilization Cost (P)	Irrigation Cost (P)	Sucker Management Cost (P)	Mat Sanitation (P)	Bunch Care (P)	Managing Pest and Diseases (P)	Harvesting (P)	Total Cost per hectare (P)	Yearly Net Income (P)	ROI (%)	Cumulative Production Cost (P)	Cumulative Net Income (P)	Cumulative ROI (%)
1	-	-	34,635	2,300	11,950	2,000	800	1,350	-	1,300	-	54,335	-54,335	-100	54,335	-54,335	-100
2	15,625	156,250	-	1,600	27,080	2,400	800	1,200	1,600	2,000	5,475	42,155	114,095	270	96,490	59,760	62
3	30,600	306,000	-	2,300	27,080	2,400	800	1,200	3,200	2,300	9,400	48,680	257,320	528	145,170	317,080	218
4	24,000	240,000	-	1,600	27,080	2,400	800	1,550	3,000	2,000	9,875	48,305	191,695	396	193,475	508,775	263
5	21,168	211,680	-	2,300	27,080	2,400	800	1,200	3,000	2,300	9,000	48,080	163,600	340	241,555	672,375	278
TOTAL	91,393	913,930	34,635	10,100	120,270	11,600	4,000	6,500	10,800	9,900	33,750	241,555	672,375	278			

Assumptions:
Plant population per hectare (625 plants); Year 2 - first cycle of harvest (mother plants) with an average weight per bunch of 25 kgs; Year 3 - second and third cycles (ratoons) of harvest with an average weight per bunch of 25 kgs; Year 4 - fourth and fifth cycles of harvests with an average weight per bunch of 20 kgs; Year 5 - sixth and seventh cycles of harvest with an average weight per bunch of 18 kgs; Farm gate price, Php10.00/kg; 2% decrease in number of mats due to virus infection on the 4th to the 5th year.

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No. 01

'Cardaba' Production

Department of Agriculture
Bureau of Plant Industry
Davao National Crop Research, Development and Production Support Center
Bago Oshiro, Davao City

Introduction

Cardaba is considered as one of the world's most important staple foods. Aside from it can be cooked or eaten raw, it can also be processed into several food products such as catsup, cakes, flour and pastries. It can be prepared into various traditional Filipino desserts and dishes like 'maruya', 'turon'. 'halo-halo' and 'ginanggang'. It's unripe fruits are processed into banana chips that have been contributing significantly to the Philippine export earnings.

Production Technologies

Soil and Climatic Requirements

1. Deep, friable and well drained loam soil with high organic matter content and pH ranging from 5-7.
2. An elevation at sea level up to 1,000 meters above sea level.
3. Areas with even distribution of rainfall throughout the year.
4. Warm but moist areas with temperature ranging from 15ºC to 35ºC.

Selection of Planting Materials

1, Use healthy ready to plant tissue cultured plantlets (five-leaf stage) sourced out from recognized and reputable nurseries.
2. If suckers are preferred, obtain sword suckers from healthy and vigorous mother plants that are free from pests and diseases.

Land Preparation

1. Clear the land by removing shrubs, stubbles,weeds and other materials.
2. Plow the field 2-3 times followed by harrowing to improve soil tilth and destroy nematodes and microorganisms that may have been built up during the previous cropping.
3. Cultivation is not necessary if the area is planted to coconut, but planting hole must be bigger and deeper.
4. Lay-out the field in a square system of planting at a distance of 4 m x 4 m (625 plants/ha) or 5 m x 5 m (400 plants/ha).
5. Dig holes about 50-80 cm deep and 40-60 cm wide. In each hole, place 1 kg of organic fertilizer or 200 g of complete fertilizer (14-14-14), then cover with thin layer of soil before setting the sucker or plantlet .

Fertilization Guide

Application Time	Kind & Fertilization Rate per Hill	Method of Application
Before planting	50g Complete Fertilizer (14-14-14) plus 1 kg Organic fertilizer (chicken dung)	Basal
2-3 months after planting	25-30 g 14-14-14 plus 25-30 g Ammonium Sulfate (21-0-0)	Ring (20 cm from the plants)
4-6 months after planting	100-120 g 21-0-0 plus 100-120 g Muriate of Potash (0-0-60)	Ring (20 cm from the plants)
7-9 months after planting	200 g 46-0-0 plus 300 g 0-0-60	Ring (40 cm from the plants)
10 months and onwards	350 g 46-0-0 plus 350 g 0-0-60	Ring (40 cm from the plants)

- Apply fertilizer when moisture is available.
- Cover the fertilizer with soil after application.

Water Management

1. Water the plants immediately after planting.
2. Irrigate the plants when the rain falls below 5 cm per month.
3. Construct drainage canals if necessary

Weeding and Cultivation

1. Cardaba needs little or zero cultivation because of its shallow root system.
2. Control weeds by slashing and ring weeding.
3. Mulching is also an alternative weed control method

Sucker Management

1. Desucker once a month to maintain desired population and minimize competition for sunlight, water and nutrients among the plants in a mat.
2. Allow 1-3 healthy suckers in a mat
3. Remove unwanted suckers by cutting the pseudostem as close to the ground as possible.

Stem and Mat Sanitation

1. Remove dry, old, diseased leaves and bracts to prevent or reduce disease inoculums.
2. Deleaf when more than 50% of the leaf blade is not functional. For leaves with less than 50% infection, trim-off infected parts only.

Fruit Care

Remove the male bud immediately after the false hand appears. This increases the size of the fingers in the bunch.

Pest and Disease Management

Common Pests and Diseases	Control Management
Insect Pests Aphids, mealy bugs, thrips. Corm weevil	• Do regular weeding and stem and mat sanitation. • Remove all possible hosts of insect pests. • Spray infested plants with insecticides including those healthy-looking plants. • Monitor and inspect regularly for pests occurrence.
Diseases Banana Bunchy Top Virus (BBTV), Bract Mosaic, Black Cross, Moko or Bacterial Wilt, Bugtok	• Use disease-free planting materials. • Eradicate immediately plants infected with BBTV and Moko. • Deleaf black cross infected leaves when 50% of the leaf area is infected. • Avoid planting of intercrops that could be alternate hosts for aphids that are vectors of virus diseases. • Bag the male bud at bending stage for the control of 'bugtok'. • Maintain proper sanitation. • Monitor and inspect regularly for disease occurrence