



How to Grow
Dragon Fruit
"Saniata"



Introduction

Dragon Cactus locally known as “Saniata,” is a native of central America specifically in Mexico and some parts of South America. This cactus is cultivated in Southeast Asian countries such as Vietnam, Thailand, Malaysia, Taiwan, and the Philippines.

Biology and Ecology

- Saniata is a perennial, epiphytic, climbing cactus with triangular, fleshy, jointed green stems and grows up to 25-50 years.
- The stem segments grow to 6 meters long
- Dragon cactus only blooms at night. The flowers are large and white, often called Moonflower or Queen of the Night.
- The normal flowering and production season of Saniata is from April to November.
- The Saniata fruit is bright pink/pale magenta color, and green-colored spine like scales. The scales turn yellow as the fruit ripens. The fruit is non climatic or it does not go dramatic ripening change after maturity. The fruit continues to grow in size until harvested, with no noticeable change in sugar content.

Dragon cactus cultivars

1. *Hylocereus polyrhizus* (Imee) – red flesh with pink skin
2. *Selenicereus megalanthus* (Elena) – white flesh with yellow skin
3. *Hylocereus undatus* (Miriam) - white flesh with pink skin

Nutritional Composition

Dragon fruit is rich in fiber, vitamins, minerals and phytoalbumins. The typical nutritional value per 100g of dragon fruits are following:

Riboflavin	0.045 mg
Niacin	0.430 mg
Iron	0.65 mg
Phosphorus	36.1 mg
Ascorbic Acid	9.0 g
Carotene	0.012 g
Protein	0.229 g
Fat	0.61 g
Ashes	0.68 g
Fiber	0.90 g
Calcium	8.8 g
Water	83.0 g

Health Benefits:

- Prevent formation of cancer using free radicals (phytoalbumins as anti-oxidant)
- Enhance the body metabolism (protein)
- Improve digestion (fiber)
- Reduce fat (fiber)
- Improve memory (carotene)
- Strengthen bones and teeth development (calcium)
- Improve tissue development (phosphorus)
- Help to metabolize carbohydrates and produce energy (Vitamin B1)
- Improve appetite (vitamin B2)
- Moisturize and smoothen skin and decrease bad cholesterol level (Vitamin E)
- Improve immune system and promote healing of cuts and bruises (Vitamin C)
- Reduce hypertension (B-Sitosterol)
- Use for liver, digestive and endocrine problems (antimutagenic activity and hepatoprotective effects)
- Help in reducing blood glucose level in people with non-insulin dependent hyperglycemic conditions
- Prevent constipation and good for urinary tract infection
- Improve eyesight and prevents diabetes and rheumatism
- For cleansing

GENERAL REQUIREMENTS:

a. Area Selection

Dragon cactus can be grown in well-drained soil with pH value from 5.3 to 6.7. It prefers sandy soil with high organic matter and grows well in saline areas. The crop also needs full sunlight.

b. Planting Requirements

Planting during the rainy season is encouraged to save irrigation cost in the plant establishment and to ensure that the crop coincide with the flowering season when the plants reach eight (8) month or more.

c. Nursery Management

Prepare for the planting materials either from the entire stem segment or 15- 20 cm long. Make a slanted cut on the stem end to improve rooting. Treat stem cuttings with rooting hormones and place in a cool, dry area for five to seven days before planting. Plant the rooted cuttings in plastic pots using a well- drained potting medium.

d. Plant Establishment

Clean the area by hand weeding, weed slashing, use of grass cutter or spraying with glyphosphate. Use kakawate wooden posts (40-50 cm diameter and 2m long) or cement posts (15x15cmx2m). Bury 30 cm length of the posts and arrange at the distance of 2.5 to 3 m between post and 3m between rows. Place old motorcycle tires as crown at the top of the post supported by three to four L-shaped 10mm steel bars.

Plant four stem cuttings or nursery-placed plants around the post. Tie the stems in the post. In sandy areas, replacing the soil with high in organic matter is advisable.

e. Nutrient Management

1. Fertilizer recommendation at different stages of the crop.

Age of the plant	Rate/ ha kg N-P205 K20	Stage of the plant	Appropriate fertiler material equivalent (/post)			
			Organic Fertilizer (kg)	14-14-14 (g)	Urea (g)	Muriate of Potash (g)
Planting to one year	200-100-150	At planting	2	45	14	20
		after 3 months	-	45	14	20
		after 6 months	2	45	14	20
		after 9 months	-	45	14	20
One year and up	500-200-500	Immediately afer harvest	4	214	290	-
		2 months later (Jan)	-	114	200	-
		Just before flowering (Apr)	4	285	-	260
		When young fruits are developing (june/july)	-	-	177	300

2. Method of Application

Saniata is a shallow rooted plant and most of the roots are concentrated at the top 15 to 30 cm soil depth. It is then appropriate to split the application of fertilizer to prevent from bleaching.

Apply the organic fertilizer liberally at the base of the post and incorporate in the soil. Dibble the inorganic fertilizer 5-8 cm away from the base of the plant to prevent the fertilizer in contact directly with the plants.

f. Tying, training and topping the shoots

Train the stem canopies leaning towards the posts and tie them using stripped clothly. Top the shoots when the plants reach one meter ans maintain two shoots. Before the shoots reachd the crown, top the shoots to allow the production of numerous shoot. train the shoots to spread out producing umbrella-like structure.

g. Irrigation

Irrigate the newly planted dragon cactus and twice a week thereafter and just after applying fertilizer except during rainy days. Irrigation is critical during fertilizer application during fruiting. Wet the posts to enhance the growth of areal roots from the underside of the stems that could provide anchorage for the plants in climbing.

Careful water management is essential during fruiting stage because uneven soil moisture results in fruit splitting. Overwatering or excessive rainfall can cause shedding of flowers, stem, and fruit to rot.

h. Pruning

Prune the stems to obtain an open, manageable and productive umbrella canopy. Remove the shoots developing at the base of the plants and these can be used for planting materials.

i. Weeding

Hand weed within the inner 30 diameter of each post and cut the weeds using grass cutter in between posts.

j. Pest Management

1. Ants attack and eat the shoots and other delicate plant parts of the dragon cactus. The presence of ants has a tendency that sucking pest such as aphids, mealy bugs and white flies are also present, ants and these sucking pests have symbiotic relationship where the latter provide honey dew as food, in return ants give protection.
2. Spray detergent soap to control pests.
3. Fruit fly larvae attack the fruits causing them to rot. This insect is very prevalent in areas with mango, guava and papaya trees. The use of pheromone traps can control this pest.

k. Harvesting

The indices include full red coloration, swelling of the navel end up to cracking. Fruit is harvested 25-30 days after flowering with 5-6 fruit crop cycles a year (May- November). Store at 5 degrees C with 90 percent RH up to 40 days but they last less than 10 days at room temperature.

I. Intercropping

Follow the 3m x 3m distance of posts to allow the use of tractor in the rotation in between posts. Plant vegetables, ginger, mungo, pigeon pea and other short statured crops in between posts but refrain from planting vine plants. These plants can be grown during the first two years of the dragon cactus which will serve as cash crops. However, after two years, intercrop shade loving plants such as ginger.

Special Dishes

The fruits can be made for ice cream. The unopened flower buds can be cooked as salads as eaten as vegetables. The dried flowers can be cooked as soups and as lumpia. The skin pulps can be boiled as cleansing drinks and jam. The fruits can be processed for special beverages, as flavour for all kinds of drinks such as wine.

Cost and Return Analysis (1,000 posts in one hectare)

Items	Year 1	Year 2	Year 3	Year 4
C. Production Returns				
Yield (kg)		10,000.00	15,000.00	15,000.00
Price (kg)		80.00	80.00	80.00
Income on fruits		800,000.00	1,200,000.00	1,200,000.00
Gros Income		800,000.00	1,200,000.00	1,200,000.00
Production Costs (P)	723,609.00	139,527.00	146,967.00	146,967.00
Net Income (P)	-723,609.00	660,473.00	1,053,013.00	1,053,013.00
Accrued Net Income (P)		-63,136.00	989,877.00	2,042,890.00

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Source:

Mariano Marcos State University-Extension Office Directorate
DA-RFU 1 and the Office of the Provincial Agriculture, Ilocos Norte
through the "*Techno Gabay Program*"
of ILARDDEC-PCARRD