



TECHNICAL DATA SHEET

ORANGE SWEET POTATO

Section A: Information on Planting the Crop

A.1	Main orange sweet potato producing areas in Costa Rica are as follows:	<ol style="list-style-type: none"> 1. Alajuela, identified as the main producing area in the country. Followed by: 2. Limón 3. Cartago 			
A.2	Main Use:	Its main use is as a fresh product.	Main export destination:	Canada and Europe	
A.3	Growth curve of sweet potato:	I phase	From planting up to 30 days after planting	Production of roots, stems, and leaves.	
II phase		From 30 to 60 days.	Rapid expansion of stems and leaves.		
III phase		From 60 to harvest (105 - 120 days).	Filling of tuberous roots.		
A.4	Soil and Climatic Requirements				
A.5	Temperature	Requires temperatures between 20°C to 30°C. Optimal soil temperature is between 24°C and 37°C.	Precipitation	The optimum is between 500 to 650 mm during the cycle.	
A.6	Photoperiod	Sweet potato cultivation requires between 10 and 13 hours of light.			
A.7	Altitude	Sweet potatoes can be planted from 0 - 3000 masl; however, the optimal altitude for commercial production is between 0 and 1000 masl.			
A.8	Soil	Loamy, deep, and well-drained soils are the best. Effective depth greater than 50 cm. The pH ranges between 5.8 and 6.5.			
A.9	Sweet Potato Varieties	Name	Color	Cycle	Yield (t/ha)
Beauregard		Light-brown-pink	80-110	22,5	
Hernández		Light-brown-pink	100-120	21	
Jewel		Light-brown-pink	100-105	19	
Carolina Ruby		Pink	80-125	21,5	
Carolina Rose		Pink	105-110	30	
A.10	Planting Material	Sweet potatoes are propagated vegetatively through the tips of the stems, sections of these, or through the storage roots.			
A.11	Planting	<p>Planting sweet potatoes can be done at any time of the year. However, during the dry season months (January to May), irrigation systems are needed to achieve good production.</p> <p>For manual planting of cuttings, first make an inclined hole (at a 45° angle) on the ridge or bed, using a wooden stake about 50 cm long. The length of the hole is approximately 20 to 25 cm and with a depth of 7 to 10 cm.</p>			
A.12	Planting Distance				
	Between ridges or beds	80 to 120 cm			
	Between plants	20 to 30 cm			
	The most common distance is 100 cm between ridges and 25 cm between plants, one row per ridge for a planting density of 40,000 plants per ha.				
A.13	Fertilization				
	Sweet potatoes are crops that extract a high amount of nutrients, mainly potassium, nitrogen, calcium, phosphorus, and magnesium. For the establishment of a fertilization program, it is recommended to conduct a chemical analysis of the soil and from there schedule the fertilization of the crop.				



Section B: Harvest and Post-Harvest of Orange Sweet Potato

B.1	Harvest Maturity		
	Sweet potatoes are harvested between 80 to 125 days after planting. The maturity of the plant is reached when a pale green to yellow coloration is observed on the leaves. The cycle of this crop is reduced during the dry season due to the high luminosity, temperatures, and available light hours.		
B.2	Harvest: Manual harvesting begins by cutting the stems and leaves level with the ground. It is recommended to perform this activity a couple of days before the harvest to help cure the tuberous root and reduce post-harvest problems, such as the skin loss of the sweet potato during harvest. Subsequently, the extraction of the tuberous roots from the soil is done with the help of a hoe, mattock, a stake, or by hand.		
	Between 14 to 20 labor-days may be required to harvest one hectare of sweet potato, making this activity the one with the highest demand for human resources and the highest cost.		
	The most requested weights for the European Union market range between 0.3 and 0.45 kg (300 to 450 g) and between 0.45 to 0.6 kg (450 to 600 g).		
B.3	Post-Harvest Management	Transport to packing plant	It has been shown that large containers cause less damage than small ones when used to store sweet potatoes.
		Reception at the packing plant	The reception operation at the plant involves weighing. Subsequently, the sweet potato undergoes cleaning for its classification, packaging, and storage.
		Washing of the roots	Dry brushing is usually used, or washing with potable water, either manually or mechanically with potable water. The washing water is usually sanitized with chlorine at a concentration of 3 or 5 ppm of free chlorine.
		Disinfection	The process consists of sanitizing the surface of the tuberous root through the use of a chemical disinfectant (organic or synthetic).
		Drying	It should be dried on metal pallets with mesh or plastic boxes with grids for better drainage and reduction of excess water. The drying time can vary between 4 to 24 hours.
		Selection and classification	Based on size and quality.
B.4	Proper storage depends on:		
	<ol style="list-style-type: none"> Maintaining the cleanliness of the warehouse. Harvesting on time to avoid damage from low temperatures. Organizing and stacking boxes properly. Proper curing process. Store only healthy and sound product in clean and sanitized boxes. Maintain proper storage conditions. 		

Section C: Information about production costs

C.1	Total production cost per hectare during the rainy season		
	Value: € 2 592 447,50	The cost of supplies represents 70% of the total production cost. The remaining 30% corresponds to labor costs.	
C.1	Quality	First	Second
	Expected yield (kg)	15.000,00	5.000,00
	Price (€)/kg	250	100
	Income by quality	3.750.000,00	500.000,00
	Gross income (€)/ha	4.250.000,00	
	Net income (€)/ha	1.657.552,5	