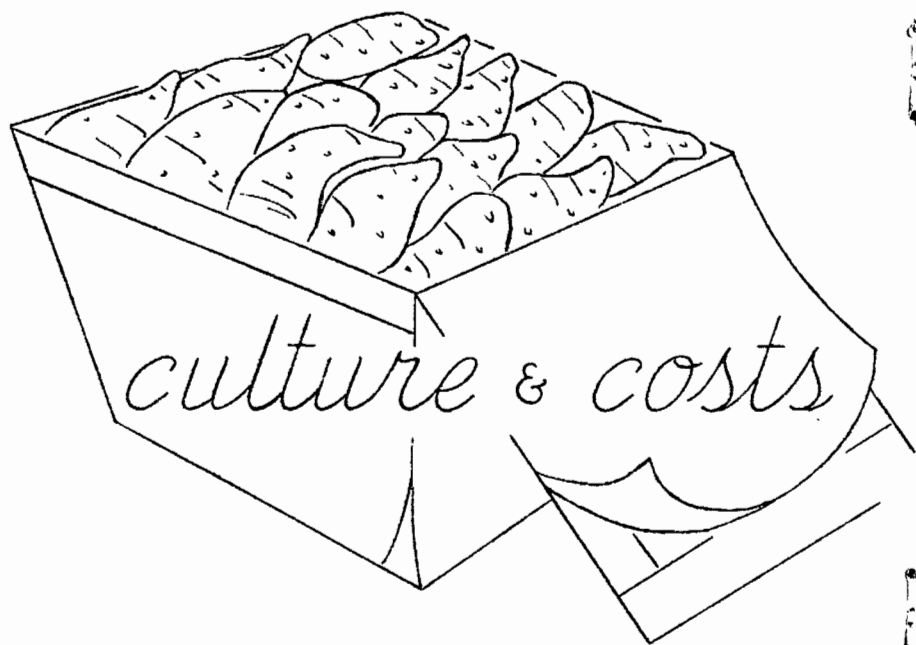


Sweet Potatoes -



IN SAN BERNARDINO COUNTY

UNIVERSITY OF CALIFORNIA AGRICULTURAL EXTENSION SERVICE

UC Cooperative Extension

SWEET POTATO PRODUCTION COSTS IN SAN BERNARDINO COUNTY

Sweet potatoes are well adapted to the basin area of San Bernardino County. Under good management, yields of 320 forty-pound boxes of marketable sweet potatoes have been produced. The Velvet, or red-skinned, potato is the predominant variety grown in this County. Occasionally, Key West, Jersey, and Porto Rico varieties are grown. The sweet potato acreage in this county has increased rapidly since 1947. From approximately 600 acres at that time, acreage climbed to a high of 1655 in 1961.

CLIMATIC REQUIREMENTS: Sweet potatoes thrive during hot days with maximum sunshine and warm nights. The young plants are very sensitive to near-freezing temperatures, and their growth is retarded by cold soil temperatures. In the fall, the roots can be chilled in the ground during light frost. Once they are chilled, they normally will keep for only a short period after harvest. Sweet potatoes require a warm growing season for four to five months to produce a heavy crop of well-formed roots.

SOILS: A sandy, well-drained soil is preferred for this crop; soils heavier than sandy loam are not desirable. The type of soil influences the yield and appearance of sweet potatoes. Roots are of best color and smoothness when grown on very light sands, but yields may be sacrificed. On heavy soils, roots are rough, of poor quality, misshapen, and often veiny. Sweet potatoes are sensitive to salt or alkali conditions.

BEDDING THE ROOTS: To produce plants for an acre, from 280 pounds of roots for heated beds, to 480 pounds of roots in cold beds, will be required. This number of roots will plant approximately 100 square feet in heated beds. The type of bed used will depend upon the grower; there are advantages and disadvantages to each type.

SOIL FUMIGATION: The beds and fields should be fumigated for nematode at least 14 to 21 days before planting, depending upon the material used. For information, refer to University of California publication entitled "SOIL FUMIGATION FOR SWEET POTATOES." An insecticide should be applied to the soil for control of wireworm. If DDT is used, it should be applied two to three months before planting. Aldrin can be applied just prior to planting.

PLANTING: Field plantings start in mid-April and should be completed by the first week of June. Slips grown in hot beds are ready in about six weeks for transplanting into the fields. The fields are usually furrowed prior to planting. Transplanting is done by machine. There are several types in operation. The one-row machines can plant about two acres a day if rows are spaced three feet apart. The plants are placed from 10 to 14 inches apart within the row. From 10,000 to 14,000 plants are required per acre.

IRRIGATION: Deep soil moisture is necessary to develop the crop. Depending on the weather, the crop is usually irrigated at 10-day intervals. In most areas, from 2 to 2½ acre feet of water will be required.

FERTILIZERS: Sweet potatoes do not require high applications of fertilizer. In most areas of the county, from 40 to 80 pounds of actual nitrogen have proved to be adequate. Nitrogen should be applied before planting, or soon after.

HARVESTING: Harvest begins in August and will continue through the early part of November. When the crop is dug will depend on the size of the roots and market price. Sweet potatoes are dug with a special digger which handles the roots very gently. In some cases, a modified Irish potato digger is used. The vines are clipped with a special vine-cutter prior to digging, which aids in harvesting the crop. Sweet potatoes are picked up by hand and placed in wooden boxes for transportation to the shed.

PACKING AND GRADING: Recently, washer-graders have come into popular use. Sweet potatoes are washed with a spray of water and dried - then packed in 40-pound cartons. Grades are "Jumbos," which are above 1½ pounds, No. 1, and No. 2.

SEED SELECTION: The grower should give careful consideration to individual hill selection of seed. Since this is a vegetative propagated crop, many diseases can be carried on if an effort is not made to select hills of disease-free potatoes. The selection of small roots as they come off the grader is a sure way of increasing disease in next year's crop.

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SWEET POTATOES (YAMS)

The following sample costs may or may not be typical of any one farm operation. It includes all those cultural operations and costs normally undertaken to produce a sweet potato crop in San Bernardino County. Total costs of production will vary with different yields per acre.

Production Cost per Carton at Varying
Pack-Out Levels

Yield per Acre 40-lb. Carton Marketable	250	275	300	325	350	375
Net Cost per carton (Includes Storage)	2.44	2.31	2.20	2.10	2.03	1.96

SEED BED COST

CONSTRUCTION		Per 100 Sq. Ft.*			COLD BED
		HEATED BEDS**			
Material		Hot Water	Electric	Straw	
Lumber	2 x 12 Rough Lumber - 2 x 4 Stakes - Nails	\$ 73.00	\$ 73.00	\$ 73.00	\$43.00
Piping	Plastic Tubing - 5¢/ft.	5.00			
Water Heating	Water Heater (20 gal.) with 40,000 BTU Burner	8.00			
Pump & Motor	Centrifugal Pump & 1/2 hp. Motor	6.00			
Electric Heating	Heating Cable, Thermostat, Contactor	---	24.00		
Cover	Unbleached Muslin & Grommets	90.00	90.00	90.00	
Total Material Cost		\$182.00	\$187.00	\$163.00	\$43.00
Labor	Construct Beds; Make, Place, Remove Covers, Misc.	8.00	7.00	5.50	2.00
TOTAL CONSTRUCTION COST		\$190.00	\$194.00	\$168.50	\$45.00
Plant Bed					
Seed	280 lbs. for Heated Beds - 480 lbs. for Cold Beds @ 7¢/lb.	19.60	19.60	19.60	33.60
	Seed Storage & Curing @ 20¢/40-lb. Box	1.40	1.40	1.40	2.40
Fumigate	Fumigant	2.10	2.10	---	2.80(!)
Cover	Plastic Cover	---	---	---	2.75
	Ground Cover - 2 yds. Sand	2.00	2.00	2.00	---
	Tar Paper Cover - 15 lb. Felt	.80	.80	.80	.80
Heat Supply	Gas - Electric, or Straw, respectively	1.50	1.20	3.20	---
Irrigate	Water	.50	.50	.50	.50
Clean Beds		2.00	2.00	2.00	1.25
Labor	Miscellaneous	2.50	2.50	2.50	1.60
TOTAL CASH COST		32.40	32.10	32.00	45.70
	Depreciation	18.20	18.70	16.30	4.30
	6% Interest on 1/2 Original Cost	5.46	5.60	4.90	1.30
TOTAL ALL COSTS		\$56.06	\$56.40	\$53.20	\$51.30

* 100 Sq. Ft. supplies slips for One Acre - 150 Sq. Ft. required for Cold Bed

** Estimated 10-Year-Life - All Equipment New

(!) Includes Soil Used for Ground Cover

May, 1962

**SWEET POTATO PRODUCTION COSTS PER ACRE
IN SAN BERNARDINO COUNTY**

100-Acre Planting on Rented Land
Labor - \$1.25 per hour
Interest - 6% on 1/2 Original Cost

Based on a Yield of 325-40-lb. Cartons
of Marketable Sweet Potatoes from a
Total Field Yield of 15,000 lbs./Acre

Operations	Annual Hours	Labor	Equipment	Materials	Cost	Combined Costs	Total Cost
Land Preparation							
Disc	2x	\$ 2.00	\$ 1.85		\$	\$ 3.85	\$
Plow		1.25	1.15			2.40	
Harrow, Pack, Fumigate		.65	.55	Fumigant	35.00	36.20	
List, Fertilize		1.00	.90	Fertilizer - 50 lbs. N.	6.75	8.65	51.10
Cultural							
Pull Plants		15.00	--			15.00	
Plant		2.50	2.20	Plants - 12,000 @ \$4.65/M (*)	55.80	60.50	
Irrigate	10x	25.00	--	Water - 3 acre ft.	45.00	70.00	
Fertilize		1.00	.80	Fertilizer - 30 lbs. N.	4.05	5.85	
Cultivate	6x	4.50	3.95			8.45	
Hand Weed	3x	11.25	--			11.25	
Rogue		2.50	--			2.50	173.55
Harvest							
Cut Vines		1.25	1.15			2.40	
Dig or Lift		3.75	6.75			10.50	
Pick, Snap & Haul		60.00	9.00	375 - 40-lb. Field Boxes @ 18¢	67.50	136.50	149.40
Market							
Storage				For 5 Months	78.75	78.75	
Pack		39.40	3.10	325 - 40-lb. Cartons @ 21¢	68.25	110.75	
				Less credit for seed, 500 lbs. @ 7¢	-35.00)	-57.50	
				Less culls - 1500 lbs. @ 1½¢	-22.50)		
				Contract - 15¢/carton	48.75	48.75	180.75
Deliver to Market							
TOTAL CULTURAL, HARVEST, & MARKET COSTS		\$171.05	\$31.40		\$352.35		\$554.80
Cash Overhead							
General Expense (Accounting, insurance, office, phone, transportation)						13.55	
Rent						65.00	78.55
TOTAL CASH COSTS							\$633.35

Non-Cash Overhead			
	<u>Investment</u>	<u>Depreciation</u>	<u>Interest</u>
Building	\$120.00	\$ 3.00	\$ 3.60
Equipment	640.00	6.35	19.20
Irrigation	200.00	5.00	6.00
	<u>\$960.00</u>	<u>\$14.35</u>	<u>\$28.80</u>
			43.15
			<u>43.15</u>

TOTAL ALL COSTS \$676.50
Per Pound (Marketable) .052

(*) Cost of Plants includes All Annual Cost of Seed Bed