

**SAMPLE COST STUDY  
GREENHOUSE ORNAMENTAL POTTED-FOLIAGE PLANT PRODUCTION  
GREENHOUSE-GROWN 6" BOSTON FERN  
San Joaquin County - November 1980**

**Prepared by:  
Gary W. Hickman, U.C. Farm Advisor**

The cost to produce greenhouse ornamentals includes many factors, most of which are contained in this study. There are, however, several assumptions that must be made with any cost study, and these are listed below.

- A commercial-sized greenhouse unit of 20,000 square feet, metal with a double-layer polyethylene covering.
- One acre of land to accomodate greenhouse and support equipment at \$5,000/acre.
- Natural gas heating.
- 5% shrinkage (loss) factor.
- Interest rate of 12%, with charges computed on one-half the original investment price for capital items, except land.
- Labor at \$4/hr.
- No plant hold-over time, i.e., plants sold when market-mature.
- Figures presented are not necessarily average costs, but are costs based on good cultural practices to produce a quality product.

Finally, since the cultural requirements of many greenhouse plants are very similar, this format and general accounting method could be applied to other 6" potted greenhouse foliage-type ornamentals with minimal modifications.

**COOPERATIVE EXTENSION  
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## GREENHOUSE CULTURE

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- \$17 million gross production yearly in San Joaquin County. This is more than the traditional crops and livestock: barley, beans, oats, rice wheat, apples, apricots, peaches, plums, field cucumbers, all melons, onions, peppers, sheep, pigs, and chickens.
- \$16 million gross production of ornamentals (mostly foliage and house plants)
- \$1 million gross production of vegetables (mostly cucumbers and tomatoes)
- Total 60 acres of ornamental greenhouses; 6 acres of vegetable greenhouses.

--\$1/4 million gross per acre

--The greenhouse culture is unique. Its main features are:

- (1) Soil requirements - none
- (2) Climatic factors affecting returns - fog, cold
- (3) High initial capital costs
- (4) Year-round production

--Farming Practices.

--Greenhouse ornamentals

--Mostly grown in 4"-8" pots, filled with peat moss, woodshavings and sand

--Held 3-6 months

--Water and fertilizer--individual drip system

--Greenhouse vegetables

--Mostly grown in 5-gallon black plastic bags, filled with pure redwood shavings

--Individually fed water and fertilizer

--Harvested daily in summer

--Each fruit, 1#, wrapped

--Shipped 16 per box, mostly to Los Angeles

GREENHOUSE ORNAMENTAL POTTED-FOLIAGE PLANT PRODUCTION  
SAN JOAQUIN COUNTY - 1979

Estimated Capital Requirements per 1,000 Square Feet of Greenhouse

Item	Original Cost (Dollars)	Useful Life (Years)	Depreciation (Dollars)	Interest at 12% (Dollars)
<u>Growing Structures &amp; Equipment</u>				
Land	\$ 250	--	--	\$ 30.00
Site Preparation	11	10	\$ 1.10	.66
Greenhouse (supports, gutters, plastic cover, doors, etc.)	1,450	10	145.00	87.00
Benches	380	10	38.00	22.80
Heaters, Fans, Cooling, Irrigation System	500	10	50.00	30.00
Pump, Well, Pressure Storage (150' head)	250	20	12.50	15.00
Electrical Material and Contract Labor	222	10	22.20	13.32
Greenhouse Construction Labor	455	10	45.50	27.30
<u>Other Equipment</u>				
Tools, Hoses, etc.	27	2	13.50	1.62
Pickup truck	400	5	80.00	24.00
Pesticide Sprayer	30	5	6.00	1.80
Subtotal	<u>\$3,975</u>	--	<u>\$413.80</u>	<u>\$253.50</u>
<u>Grading, Packing, &amp; Office Equipment</u>				
Structure (950 sq. ft.)	\$ 90	10	\$ 9.00	\$ 5.40
Office Equipment	51	10	5.10	3.06
Subtotal	<u>\$ 141</u>	--	<u>\$ 14.10</u>	<u>\$ 8.46</u>
Grand Total	<u>\$4,116</u>	--	<u>\$427.90</u>	<u>\$261.96</u>

Total Depreciation and Interest

\$689.86

SAMPLE PRODUCTION COSTS FOR  
GREENHOUSE-GROWN 6" BOSTON FERN  
San Joaquin County - 1979

	Unit Cost	Total Unit Cost
<b>I. <u>Material Costs</u></b>		
Container, 6" plastic pot	\$ .11	
4" transplant	.45	
Saucer or hanger & label	.07	
Soil media	.06	
Total Material Cost		\$ .69
<b>II. <u>Direct Labor</u> @ \$4/hr.</b>		.27
<b>III. <u>Overhead</u></b>		.55
*Bench cost @ 0.6 sq.ft./plant/crop, includes:		
Depreciation	\$ .53	
Utilities	.80	
Taxes	.30	
Nursery supplies	.25	
Repairs & maint.	.30	
Insurance	.10	
Other	.58	
Total Bench Costs		
(per sq.ft./yr.)	\$2.86	
<b>TOTAL PRODUCTION COSTS PER PLANT</b>		<b>\$1.51</b>
<b>IV. Sales, distribution &amp; administration @ 40%</b> of selling price, includes: interest, accounting, licensing, etc.		<b>\$1.06</b>
<b>TOTAL GROWER'S COST PER PLANT</b>		<b>\$2.57</b>

Expected Profit Based on Selling Price

	\$2.20	\$2.35	\$2.50	\$2.65	\$2.80	\$2.95	\$3.10
Net profit per unit (plant) (1.7 plants/sq.ft./crop)	(.19)	(.10)	(.01)	.08	.17	.26	.35
Net profit per bench sq.ft./year (5.1 plants/sq.ft./yr.)	(.97)	(.51)	(.05)	.41	.87	1.33	1.78
Net profit per 20,000 sq.ft. greenhouse/yr. (67,320 plants/yr.)	(\$12,791)	(\$6,732)	(\$673)	\$5,386	\$11,444	\$17,503	\$23,562

Note: 1979 average local wholesale selling price = \$2.65.

\*Since total greenhouse space is not usable to produce plants, the actual plant bench space is used in calculation. An estimation of 0.66 sq.ft. bench growing space per one sq.ft. total greenhouse area is used.