

Yields

The average yield of broccoli for freezing as reported by the Agricultural Commissioner for the past 19 years has been between 3,480 and 7,537 pounds per acre. For this sample cost yields of 6,000, 5,000, and 7,000 pounds per acre are used. This is for broccoli trimmed to a 5-inch cut.

Yield for fresh market broccoli is a little higher because for fresh market it is cut to 7 inches and packed 14 or 18 1 2/3-lb. bunches per carton of 23 and 30 pounds respectively. Yields of 350, 275, and 425 cartons are used in this example.

Varieties and Seed

Green Duke, a hybrid that matures uniformly is the main variety for freezing and fresh market. A broccoli harvesting machine has been developed. Green Duke is suitable for once-over machine harvesting, but all harvesting in recent years has been by hand.

Soil and Climate

Both soil and climate throughout the Oxnard Plain are highly satisfactory for production of broccoli for harvesting from October 15 through July 15 into May.

When to Plant and Harvest

Planting of Broccoli begins in August and continues through May for most processing and fresh market. Yield and quality are somewhat depressed in February and early March. Because of cool weather in December and January.

Most fields are harvested two or three times. By allowing some heads to become overmature before the first harvest a large percentage of the crop is taken in the first harvest. Heads lost by this delay are compensated for by larger sizes of the harvested heads. When a harvest crew comes in too early they harvest a lot of heads that could grow more without loss of quality.

Planting, Cultivation, and Weed Control

Because the smooth, round seed of broccoli works well in precision planters, a high percentage of broccoli seed emerges. And because broccoli will yield well over a wide range of plant spacings, this crop is especially well suited to the use of precision planting and mechanical thinning—or to precision planting and thinning with long-handled hoes. A seed spacing of 2.5 inches is suggested for fields to be thinned with a synchronous thinner. If the field is to be thinned with long-handled hoes, it is advisable to take advantage of the greater safety offered by a 2-inch spacing.

Planting to stand with a 6-inch spacing has been successful. Objections to this kind of planting are the large number of heads to be cut and the risk of an inadequate plant population. Head size will be smaller than for stands thinned to spacings of 10-inches. Seed spacing exceeding 6 inches will often result in excessive gap space (unplanted row space).

All broccoli here is planted two rows to a bed with bed centers 40 inches apart. With the well-shaped beds that go with precision planting, close cultivation for weed control at thinning time is effective.

Fertilizing

High yield and high quality of broccoli depend on vigorous uninterrupted growth producing a large plant before head growth starts. A preplant application of 100 pounds of nitrogen per acre and another 100 pounds of nitrogen per acre or more applied in one or two side-dressings while the crop is growing may be required. If phosphorus is needed it should be applied before planting.

Irrigation

The rapid, vigorous growth required for high yield and quality of broccoli must not be retarded by inadequate soil moisture. Even short periods of drought may reduce plant size. It takes a big plant to produce a big head.

Pest and Disease Control

Aphids and worms are the principal insect pests of broccoli. Fields need to be inspected frequently for these pests so that fields will be clean when head formation begins. In wet weather, downey mildew may be a problem, especially if it becomes systemic.

University of California recommendations for pest and disease control are available at the farm advisors office.

For Fresh Market

Varieties and cultural practices are the same. Fresh broccoli is field packed. Packages are of 14 1 2/3-lb bunches weighing 23 lb and 18 1 2/3-lb bunches weighing 30 lb. Liquid ice is injected into the palletized boxes immediately after harvest.

FREEZER BROCCOLI

Acres, Yields, and Prices as Reported by
Venture County Agricultural Commissioner

Year	Acres	Lb/A	\$/Lb	\$/A
1973	2090	4940	.102	504
1974	4061	5080	.126	640
1975	3212	4660	.134	624
1976	2934	3480	.136	473
1977	4689	4500	.150	675
1978	3800	4660	.166	774
1979	2101	7174	.147	1055
1980	2006	6260	.174	1089
1981	1725	6480	.184	1193
1982	4378	10909	.185	2018
1983	3520	7680	.236	1812
1984	3500	13638	.194	2640

FRESH MARKET BROCCOLI

Year	Acres	25 Lb. Cartons/A	\$/Carton	\$/A
1979	548	433	5.66	2451
1980	693	281	7.80	2192
1981	983	378	7.97	3012
1982	1882	357	7.36	2628
1983	1133	333	6.24	2078
1984	1089	392	7.81	3061

* Combination of 80% 14's @ 23 lb and 20% @ 30 lb.

BROCCOLI - CASH FLOW INCLUDING LAND RENT AND SUPERVISION

FREEZER

Sept.	Oct.	Nov.	Dec.	Jan.
<u>Start</u>				
\$700				

Grow
\$400

Harvest
\$240

FRESH

Start
\$700

Grow
\$400

Harvest
\$1,470

Yield: 6,000, 5,000, & 7,000 Lb/A (Freezer) Land Use: 5 months
 350, 275, and 425 25 Lb Cartons (Fresh)*

Plant: August and September Harvest: November, December, & January

Labor Per Acre

	Tractor	Hrs.	Cost	Tractor & Machinery	Contract & Materials	Total Per A.
CULTURAL CASH COSTS						
Operations for						
Establishing Stand		8.77	\$68.34	\$ 62.89	\$ 31.41	\$162.64
Pre-plant Fertilizer & Systemic Insecticide				Contract	85.00	85.00
Seed				.6 lb/A \$85	51.00	51.00
Weed Control				Contract	50.00	50.00
1st Fert. after emergence				60 Lb N @ .41	24.60	24.60
Fert. Midseason 4 beds 65 HP	.26		2.22	2.37 80 Lb N @ .41	32.80	37.39
Cultivate 2x Midseason 65 HP	.52		4.44	4.86		9.30
Pest Control				Contract	180.00	180.00
Hoe		9.00	63.09			63.09
Irrigate 2 x		4.00	29.88	.98 .5 A-Ft Wtr. @\$35	17.50	48.36
Disc & Roll Refuse 2x 160 HP	.38		3.24	8.64		11.88
Total Cultural Cash Costs	22.93		\$171.21	\$79.74	\$472.31	\$723.26

CASH OVERHEAD

Land Rent				\$56.25 per acre-month x 5 months		\$281.25
Taxes on Machinery	@			.31 per acre-month x 5 months		1.55
Supervision	@			10.45 per acre-month x 5 months		52.25
General Expense	@			4% of cultural and harvest cost		28.09
Interest on Operating Capital	@			1.04%/A-month		47.04
Total Cash Overhead						\$ 410.18
Total Cash Costs Except Harvesting						\$1,133.44

HARVESTING CASH COSTS FOR FREEZER

Cut				\$.032/lb x 6,000		\$192.00
Haul out of field, Man 2 Hr. @ \$8.52 65 Hp Tractor 2 Hr. @ \$9.00						35.04
Total Harvesting Cash Costs				\$.035/Lb		\$ 227.04
Total Cultural, Overhead, Harvesting Cash Costs						\$1,360.48

INVESTMENT OVERHEAD

Depreciation:	Tractor & Machinery	\$34.06	Transportation & Shop	\$7.80	\$41.86
Interest:	Tractor & Machinery	23.09	Transportation & Shop	3.20	26.29
Total Investment Overhead					\$68.15
Total Cost Per Acre	@	6,000 lb/A			\$1,428.63
Total Cost Per Acre	@	5,000 lb/A			\$1,390.69
Total Cost Per Acre	@	7,000 lb/A			\$1,466.47

Total Cost Per Pound	@	6,000 lb/A	\$.238	* FOR FRESH MARKET BROCCOLI ✓	
Total Cost Per Pound	@	5,000 lb/A	.278		
Total Cost Per Pound	@	7,000 lb/A	.209		
				25 Lb Cartons*	Total Cost
				Per Acre,	Per Carton
				350	\$7.63
				275	8.57
				425	7.03

✓ Pre-harvest cost same as for freezing: \$1428.63 - \$227.04 = \$1,201.50 per acre.
 Harvesting and selling costs \$4.20 per carton (14's and 18's mixed)

* Combination of 80% 14's @ 23 lb and 20% 18's @ 30 lb.

LAND PREPARATION AND STAND ESTABLISHMENT

Sugar beets, broccoli, cabbage, cauliflower, cucumbers, head lettuce, and spinach all require approximately the same field operations for seedbed preparation, planting, pre-plant fertilizing, the first side-dressing, the first two cultivations, irrigation for germination, and the first irrigation after thinning. Costs of these operations are itemized below and entered in the cost of each crop as "land preparation and stand establishment". Costs of fertilizer, seed, herbicides, and thinning are

omitted here because they vary according to crop.

It is common practice to have furrowing and application of pre-plant fertilizer in the bed done by contract. This eliminates the need for fertilizing equipment on the sled used for bed shaping and planting.

Minor deviations from these procedures will not appreciably affect total cost.

CULTURAL CASH COSTS	Tractor	Labor		Machinery*		Contract & Materials	Total Per Acre
		Hours	Cost	Cash Cost			
Subsoil 1 x	160	.32	\$2.73	\$6.48		\$	\$9.21
Flow 1 x	160	.32	2.73	6.88			9.61
Disc & Roll 2 x	160	.38	3.24	8.64			11.88
Land Plane 2 x	160	.36	3.06	7.50			10.56
Field Cultivator 2 x	160	.22	1.88	3.98			5.86
Furrow & Fertilize			Contract	(See each crop for fertilizer)		11.00	11.00
Shape Beds & Plant	65	.39	3.22	6.55	(See ea. crop for seed)		9.77
Irrigate for Germ. 2x (Sprinkler)		4.00	29.88	15.00	1/3 A-Ft water	11.66	56.54
Cultivate, 4 beds 2 x	65	.52	4.44	4.86			9.30
Side-dress, 4 beds 1 x	65	.26	2.22	2.51	(See ea. crop for Fert.)		4.73
Irrigate 1 x (after thinning)		2.00	14.94	.49	1/4 A/Ft water	8.75	24.18
Total Cultural Cash Costs		8.77	\$68.34	\$62.89		\$31.41	\$162.64

Investment overhead for land preparation - Depreciation: \$25.99 Interest: \$16.72

* Includes Tractor

