

Ventura 1970

## BROCCOLI FOR FREEZING

### Yields

The average yield of broccoli for freezing as reported by the Agricultural Commissioner for the past 6 years has been between 4000 and 5000 pounds per acre. For this sample cost a yield of 5000 pounds per acre is used. This is for broccoli trimmed to a 5-inch cut.

### Varieties and Seed

Topper 43, a medium-season variety, is almost the only variety of broccoli in use here now. One variety developed for mechanical harvesting is being tested here.

### Soil and Climate

Both soil and climate throughout the Oxnard Plain are highly satisfactory for production of broccoli for harvesting in December and January, or in May.

### When to Plant and Harvest

Fall planting of broccoli begins in August and continues through September. The later plantings, especially those delayed until October, usually fail to produce the large plant required for a large yield. Most fields are harvested 3 times. The first harvest should begin before many heads are overmature. The interval between harvests is usually about a week.

### Planting, Cultivation, and Weed Control

Because the smooth, round seed of broccoli works well in precision planters, because 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 2½ or 3 inches is suggested for fields to be thinned with a synchronous thinner. If the field is to be thinned with long-handled hoes, it may be advisable to take advantage of the greater safety offered by a 2-inch spacing. Practically all broccoli here is planted 2 rows to a bed with bed centers 40" apart. With the well-shaped beds that go with precision planting, close cultivation for weed control at thinning time is effective. Chemical weed control is used to good advantage in this crop.

## Fertilizing

High yields of high quality broccoli now depend upon the development of large plants. In many soils the application of about 100 pounds of nitrogen soon after thinning is adequate. For sandy soil, or soil that does not have a history of a heavy application of mixed fertilizers, it may be advisable to try a mixed fertilizer early in the season and additional nitrogen in mid-season. Very large plants tend to produce broccoli with hollow stems. Close plant spacings (10" or less) minimize this defect.

## Irrigation

Following an irrigation for seed germination and another irrigation soon after thinning, water should be applied at intervals that will keep the crop growing rapidly and maintain a good supply of soil moisture at harvest time.

## Pest and Disease Control

Aphids and worms are the principle insect pests of broccoli. Systemic insecticides are effective against early aphid infestations. Frequent field observations are necessary to decide on timing of and material for subsequent pesticide treatments. Sugar beet nematodes are present in most fields where broccoli is grown. At least one test has shown that it may pay to fumigate soil for sugar beet nematodes-- especially fields planted early in the fall or fields to be harvested in May.

## Mechanization

Tests have shown that once-over harvesting of the "Harvester variety" will produce a satisfactory yield of high quality broccoli. The feasibility of mechanical harvesting depends on developing an economical means of separating excessive leaves and stems from the mechanically harvested crop. Also, planting schedules must be followed that will facilitate harvesting each field at its peak yield of high quality product.

**BROCCOLI FOR FREEZING, 1969**

Yield: 5000 lb/A

Land Use: 5 Months

Remarks: Planted in September

Harvested: December and January

	Labor		Cash Costs per Acre		Total per Acre
	Per Hrs.	Per Acre Cost	Machinery	Contract & Materials	
<b>CULTURAL CASH COSTS</b>		\$	\$	\$	
Plow	.68	1.67	2.38		4.05
Disc and roll 2 x	.52	1.27	1.82		3.59
Landplane 2 x	.52	1.27	1.82		3.59
Springtooth harrow 2 x	.32	.78	1.12		1.90
Furrow and fertilize with disyston 350 lb. 17-49, Contract				30.00	30.00
Plant	.60	2.64	1.90	3½ lb. seed @ 5.50 19.25	23.79
Roll beds	.25	.61	.38		.99
Cultivate 3 x	1.80	4.41	2.70		7.11
Thin				Contract 30.00	30.00
Fertilize	.80	1.96	1.50	300 lb. NH <sub>3</sub> NO <sub>3</sub> 13.20	16.66
Hoe 1 x	8.00	15.60			15.60
Pest Control 3 x				Contract 39.00	39.00
Irrigate 4 x	10.00	19.50	.80	1½ A-ft. @ \$5 7.50	27.80
Disc and roll refuse 2 x	.52	1.27	1.82		3.09
<b>Total Cultural Cash Costs</b>		<b>50.98</b>	<b>16.24</b>	<b>138.95</b>	<b>206.17</b>
<b>CASH OVERHEAD</b>					
Land rent	@ \$14.60 per acre-month x 5			73.00	
Taxes on Machinery	@ .24 per acre-month x 5			1.20	
Supervision	@ 5.00 per acre-month x 5			25.00	
General Expense	@ 2.00 per acre-month x 5			10.00	
<b>Total Cash Overhead</b>	@ 21.85 per acre-month x 5				<b>109.20</b>
<b>Total Cash Costs except Harvesting</b>					<b>315.10</b>
<b>HARVESTING CASH COSTS</b>					
Cut			\$ .017 x 5000 lb.	85.00	
Haul out of field	2.00	2.00	3.00	5.00	
Haul to freezer		Contract @	1.75/ton	4.38	
<b>Total Harvest Cash Cost</b>					<b>94.38</b>
<b>Total Cultural and Harvest Cash Cost</b>					<b>409.48</b>
<b>INVESTMENT OVERHEAD</b>					
Depreciation	@	\$2.40 per acre-month x 5		12.00	
Interest	@	.70 per acre-month x 5		3.50	
<b>Total Investment Overhead</b>	@	3.10 per acre-month x 5			<b>15.50</b>
<b>Total Cost per Acre</b>					<b>424.98</b>
<b>Total Cost per Pound</b>		<b>\$.085</b>			

BROCCOLI, FREEZING

CASH FLOW - EXCLUDING LAND RENT AND TAXES

July    Aug.    Sept.    Oct.    Nov.    Dec.    Jan.    Feb.    Mar.    Apr.    May    June

Start  
\$100

Grow  
\$130

Harvest  
\$100

Acres, Yields, and Prices Reported by Ventura Co. Agricultural Commissioner

<u>Year</u>	<u>Acres</u>	<u>Lb/A</u>	<u>\$/Lb.</u>	<u>\$/A</u>
1962	1520	4280	.080	342
1963	1509	5000	.082	413
1964	1693	5240	.074	389
1965	1562	4840	.082	398
1966	2030	3840	.089	342
1967	2318	4280	.089	382
1968	2040	5940	.072	410