



Current Report

Cooperative Extension Service • Division of Agriculture • Oklahoma State University

OPERATING CAPITAL REQUIREMENTS FOR SELECTED FRESH MARKET VEGETABLES

Raymond Joe Schatzer
Assistant Professor

Michael C. Wickwire
Former Research Assistant

This current report provides a mechanism to help current and potential commercial vegetable producers and their lenders develop an estimation of 1986 cost of production and operating capital requirements. The information provided should be useful in developing credit requirements and in deciding which crops to grow. The costs presented in this report consider only the variable costs of production. Fixed costs such as depreciation, taxes, insurance, and interest on investment are not included. The costs are reported on a per acre basis and are based on enterprise budgets developed for small farms.

The production costs are divided into establishment period costs, growing period costs, and harvesting period costs. These costs are provided for seventeen vegetable cropping enterprises in Table 1. The costs are an estimation of the costs an experienced producer would incur during 1986. The costs are based on the production practices recommended by Oklahoma State University Horticulturists. A list of relevant OSU extension publications is included with this report. You should develop your own cost estimates using your expected production practices. To help estimate your costs, you may wish to obtain the detailed enterprise budgets available for the crop from your County Cooperative Extension Service Office.

Commercial vegetable production requires a lot of manual labor, especially if the crop is harvested by hand as assumed in the budgets used to develop the costs presented in this report. Labor costs therefore are a large percentage of total variable costs for many of the vegetables. The hours of labor are shown in Table 2 for each cost period. The wage rates used in developing the costs contained in Table 1 are \$4.90 per hour for tractor drivers

and \$4.65 per hour for all other laborers. The budgets assume just the right amount of labor is available at the right time at these wage rates. In reality, the available labor may require different wage rates. You may have to pay more for labor or pay for hours when they are not needed to insure their availability when needed. If so, this extra cost should be taken into consideration when estimating your cost of production. If your family is willing to work for a cheaper wage or no wage at all, then cost should be adjusted to reflect this fact.

Establishment Period Costs

The establishment period covers the time from ground preparation through planting the seeds or transplants. This period includes the costs of ground preparation (plowing, disking, bedding, etc.), chemicals used for weed and other pest control if applied before planting or the week of planting, seeds or transplants, and the labor costs involved in these establishment activities.

Growing Period Costs

The growing period covers the time from the week after planting until the week before harvest begins. Growing costs, for some of the crops, are relatively inexpensive. However, the growing period is perhaps the most management intensive period. Without timely applications of pesticides, water, and fertilizer, yields may be low in quantity and/or quality. This period includes the costs of cultivation, hand hoeing, spraying for pest and disease problems, irrigation, sidedressing fertilizer, and if required thinning, fruit pruning, tying, and staking.

TABLE I

ESTIMATED COST AND YIELD PER ACRE OF PRODUCING SELECTED VEGETABLE

| Crop | Planting Method | Establishment Cost \$ | Growing Cost \$ | Harvesting Cost \$ | Operating Capital Cost \$ | Total Variable Cost \$ | Estimated Yield pounds |
|-----------------------|-----------------|--------------------------|--------------------|-----------------------|------------------------------|---------------------------|---------------------------|
| Tomatoes, Staked | T ¹ | 397.92 | 1544.84 | 2119.61 | 49.63 | 4112.00 | 21,000 |
| Eggplant | T ₂ | 337.99 | 100.91 | 2045.20 | 15.35 | 2499.45 | 16,500 |
| Okra | S ² | 81.59 | 46.97 | 2261.50 | 9.08 | 2399.14 | 9,000 |
| Squash, Yellow Summer | S | 189.38 | 208.21 | 1963.29 | 8.68 | 2369.56 | 10,000 |
| Fall Broccoli | T | 619.32 | 73.08 | 1436.71 | 9.33 | 2138.44 | 8,250 |
| Bell Peppers | T | 653.93 | 221.74 | 1235.89 | 23.35 | 2134.91 | 9,000 |
| Spring Broccoli | T | 619.32 | 86.72 | 1359.36 | 12.48 | 2077.88 | 7,700 |
| Spinach, Spring | S | 128.64 | 87.97 | 1819.41 | 2.08 | 2038.10 | 10,000 |
| Potatoes, Sweet | T | 841.05 | 173.33 | 938.36 | 45.15 | 1997.89 | 12,000 |
| Fall Broccoli | S | 295.03 | 101.77 | 1527.71 | 7.96 | 1932.47 | 8,800 |
| Spring Broccoli | S | 281.34 | 145.84 | 1439.34 | 9.53 | 1876.05 | 8,250 |
| Cucumber | S | 121.28 | 140.84 | 1038.05 | 4.65 | 1304.82 | 15,000 |
| Cantaloupe | S | 107.41 | 154.72 | 963.34 | 6.08 | 1231.55 | 9,500 |
| Beans, Snap | S | 188.47 | 91.63 | 506.45 | 4.48 | 791.03 | 3,600 |
| Corn, Sweet | S | 122.86 | 158.35 | 416.31 | 4.64 | 702.16 | 8,100 |
| Peas, Southern | S | 90.72 | 100.27 | 491.21 | 3.00 | 685.20 | 3,000 |
| Watermelons | S | 93.27 | 131.45 | 261.16 | 5.17 | 491.05 | 14,000 |

¹ T = Transplanted

² S = Seeded

TABLE II

ESTIMATED HOURS OF LABOR REQUIRED PER ACRE BY PERIOD
FOR SELECTED VEGETABLES

| Crop | Planting Method | Establishment Period Hours | Growing Period Hours | Harvesting Period Hours | Total Hours |
|-----------------------|-----------------|----------------------------|----------------------|-------------------------|-------------|
| Tomatoes, Staked | T ¹ | 16.0 | 248.7 | 203.5 | 468.2 |
| Eggplant | T ₂ | 13.0 | 11.6 | 203.2 | 227.8 |
| Okra | S ² | 5.8 | 6.6 | 306.3 | 318.7 |
| Squash, Yellow Summer | S | 5.0 | 28.4 | 200.8 | 234.2 |
| Fall Broccoli | T | 26.1 | 3.2 | 113.4 | 142.7 |
| Bell Peppers | T | 23.0 | 16.3 | 123.6 | 162.9 |
| Spring Broccoli | T | 26.1 | 3.4 | 106.3 | 135.8 |
| Spinach, Spring | S | 5.8 | 2.5 | 200.2 | 208.5 |
| Potatoes, Sweet | T | 25.3 | 30.0 | 91.9 | 147.2 |
| Fall Broccoli | S | 6.1 | 10.1 | 120.7 | 136.9 |
| Spring Broccoli | S | 5.8 | 10.1 | 113.6 | 129.5 |
| Cucumber | S | 5.0 | 16.0 | 91.2 | 112.2 |
| Cantaloupe | S | 5.0 | 13.5 | 100.8 | 119.3 |
| Beans, Snap | S | 5.8 | 7.4 | 60.6 | 73.8 |
| Corn, Sweet | S | 5.0 | 9.3 | 30.2 | 44.5 |
| Peas, Southern | S | 5.8 | 12.9 | 63.9 | 82.6 |
| Watermelons | S | 5.8 | 17.4 | 28.6 | 51.8 |

¹ T = Transplanted

² S = Seeded

Harvest Period Costs

The harvesting period covers the time from the week harvest begins until harvest is finished. The harvest period is the most expensive period of production for most vegetables. Therefore, very careful estimation of harvest costs is important in economics budgeting and the production decision. The cost of harvesting includes labor for hand picking, hauling from the field to the market, grading, packaging, and marketing the produce. For some crops, the costs may also include additional applications of pesticides and water as needed to obtain quality production. Many of the costs of harvest are directly related to the yield -- the higher the yield, the higher the harvesting cost. Decisions to apply additional inputs during harvest, should consider the expected increase in saleable yield. If the expected value of the added production is higher than the expected cost of the added inputs including harvesting costs, then the inputs should be added.

Your Cost

The costs used in this fact sheet are estimates of the cost of recommended production practices and are based on average conditions. Therefore, they should only be used to help develop your own estimations using your expected production practices. To help estimate your cost, you may wish to refer to the enterprise budgets available from your County Cooperative Extension Service Office.

Marketing

Marketing is a very important aspect of vegetable production. It is highly recommended that primary and secondary markets be located early in your planning. For more information on marketing alternatives for vegetable enterprises, one should refer to OSU Fact Sheet No. 473.

Most vegetable enterprises appear to be very profitable. However, many factors influence the profitability of vegetable

production. If you are new at vegetable production, it is recommended that you read OSU Fact Sheet No. 165 on "Should I Commercially Grow Vegetables and/or Fruits?"

COMMERCIAL VEGETABLE PRODUCTION
OSU EXTENSION PUBLICATIONS*

F.S. 165 - Should I Commercially Grow Vegetables and/or Fruits?
F.S. 473 - Fresh Produce Marketing Alternatives - Fruits and Vegetables
F.S. 6000 - Fertilizer Recommendations for Vegetables
F.S. 6008 - Weed Control in Vegetables
A.F. 6011 - Vegetable Varieties for Oklahoma
A.F. 6018 - Asparagus Production
F.S. 6019 - Tomato Production
F.S. 6020 - Transplant Production
A.F. 6021 - Sweet Corn Production
A.F. 6022 - Sweet Potato Production
A.F. 6023 - Slicing Cucumber Production
A.F. 6024 - Snap Bean Production

A.F. 6025 - Okra Production
A.F. 6026 - Squash and Pumpkin Production
A.F. 6027 - Cabbage, Broccoli, Cauliflower & Brussels Sprout Production
A.F. 6028 - Irish Potato Production
A.F. 6029 - Southern Pea Production
A.F. 6030 - Pepper Production
A.F. 6031 - Greens Production
A.F. 6235 - Watermelon Production
A.F. 6237 - Cantaloupe Production
F.S. 7625 - Tomato Diseases I - Fungi
F.S. 7626 - Tomato Diseases II - Bacteria, Viruses, Nematodes
F.S. 7627 - Tomato Diseases III - Not caused by Pathogens
F.S. 7635 - Irish Potato Diseases - Prevention and Control
F.S. 7638 - Vine Crop Diseases
*Available through County Extension offices. If the county office does not have what you need, order directly from Central Mailing Services, OSU, Stillwater, OK 74078. Single copies of up to 10 (5 for non-residents) publications are free.