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Fruit And Vegetable Production

Small Farm Family Program

OSU Cooperative Extension Service
The Ohio State University

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Small farm families have made important contributions to agriculture for many years. Indications are that the small farm family will continue to have opportunities in the agricultural sector in the future.

The United States Department of Agriculture has recently recognized and defined the small farm family unit. The program is receiving new visibility and support on the national level.

The purpose of this publication is to serve as a planning and resource guide to those interested in exploring opportunities for participation in the small farm family program.

The publication is organized and presented to accomplish the following purposes:

1. To define the nature and scope of the program.
2. To explore the advantages of growing fruits and vegetables on a small scale.
3. To develop an awareness of the potential pitfalls and problems of growing fruits and vegetables.
4. To assist in the decision making process and in answering the question, "Should the family begin producing fruits and vegetables as a part of the small farm family program?"
5. To assist those deciding to grow fruit and vegetables on a small scale in successfully growing crops. Such assistance includes:
   a. Planning considerations.
   b. Information relative to needed equipment and supplies.
   c. Information concerning cropping program selections.
   d. Production costs and estimated returns guidelines for selected crops.
   e. Sources of information to increase technical skills.

Checklist for Helping the Family Decide

Yes	No	
____	____	1. **Time and Labor:** Will the family have adequate time to care for the crops on a regular basis throughout the growing season?
____	____	2. **Desire:** Do enough family members have the interest and commitment to grow fruits and vegetables in view of the sustained time and effort required?
____	____	3. **Capital:** Can an appropriate amount of money be invested in equipment, tools and supplies required to grow quality fruits and vegetables?
____	____	4. **Technical Knowledge-Experience:** Do the various family members have the necessary knowledge of the culture of the specific fruits and vegetables to successfully grow the crops? If not, are they willing to learn from appropriate references, schools and short courses?

___ ___ 5. **Site:** Does the farm provide a satisfactory soil and climate for successful crop production?

___ ___ 6. **Market:** Is there a dependable market for the fruits and vegetables, some of which are highly perishable?

___ ___ 7. **Adverse Weather:** Does the family understand that the weather of some seasons may result in crop damage or failure? Is the family able to accept this possibility and "weather the storm?"

___ ___ 8. **Time for Business Establishment:** Does the family realize that few businesses become fully operational and successful in only one or two years? Is the family willing to work over a three to five year period to fully establish a business?

___ ___ 9. **Quality Products:** Does the family realize that chances for success are best when high quality products are grown?

___ ___ 10. **Cooperation:** Are others in the area interested in growing fruits and vegetables so that some cooperative efforts are possible?

For greatest chance of success, the answer to the questions above should be yes.

Nature and Purpose of the Program

The Small Farm Family Program is voluntary, involving a coordinated effort to provide educational materials and technical assistance to small farm owners and dwellers. A small farm family is considered to be one producing agricultural products with less than $20,000 sales.

The primary thrust of the Extension Service program is to assist participants in making the best use of acquired and available resources in achieving family goals. It is intended that crop yields and quality will be in excess of family needs and generate income for family use.

Opportunities

Fruits and vegetables have several inherent advantages for production on a small farm. Such advantages include the following:

- Products have considerable appeal to consumers; thus, they are in demand. With appropriate promotional and merchandising efforts, a dependable income producing market can be established.
- Most temperate zone fruits and vegetables are adapted to a diversity of soil types and grow well under Ohio climatic conditions.
- In the case of vegetables, the waiting time from planting to harvest and income is a matter of a few weeks (as short as four weeks for radish and up to 15 weeks for some pumpkin and squash). Fruit production, with the exception of everbearing strawberry, is a longer term proposition.
- One can start a small scale fruit-vegetable production enterprise with a minimum of investment, depending upon the extent to which the family is willing to perform hand labor. Power equipment quickly increases investment and maintenance costs.
- In the event of unforeseen adversity, the enterprise can be phased out, often with a minimum of loss to the owner-operator. The nature of the enterprise is such that a huge investment is not required.
- Small scale fruit and vegetable farming is an excellent way to use family labor that may not otherwise be utilized. This is particularly the case where both children and parents have interests in crop production.
- Fruit and vegetable production and marketing activities are seasonal; thus, they do not commit the family to a year-round activity.

Limitations

Like most horticultural crops, fruit and vegetable production involves considerable labor, time input and skillful management. This is because:

- Most fruit and vegetables are subject to numerous insect and disease and animal threats.
- In general, most fruit and vegetables do not compete well with weeds.
- Fruits and vegetables demand a fairly constant supply of water over the growing season to provide best yields and quality of products.
- Fruit and vegetable plants require proper nutrition, and the carbohydrate-nitrogen balance must be carefully regulated.
- Most fruits and vegetables are highly perishable commodities; thus, they must be promptly marketed or properly stored.
- Some fruit and vegetables require plant support systems, i.e. trellising, staking or caging. This involves considerable labor and some capital input.
- Adverse weather can easily result in fruit and vegetable crop damage or failure.
- The supply-demand situation for fruits and vegetables can change quickly, requiring excellent marketing skills for success. For many enterprises, skillful marketing may be more challenging than successful crop production.

Growers of fruits and vegetables must be prepared to control serious disease and insect pests.

• Quality fruit and vegetable production is seasonal in nature and a demanding, time consuming venture. Those without sufficient interest and time for fruit and vegetable production are best advised not to go into the business.

• Fruit and vegetable production involves some capital expenditures for basic tools and equipment.

Planning Considerations

Those anticipating starting a fruit and vegetable enterprise on a small farm should first **carefully consider** the advantages and limitations of such a venture. Once the decision to start the business is made, an optimistic, determined attitude can contribute greatly to success. There are many resources available to help the fruit and vegetable grower achieve his goals.

Inventorying and Analyzing Needed Resources

Soil:

• Must be well drained — County Extension and Soil Conservation Service office personnel can provide assistance with irrigation, drainage and conservation techniques.

• Must be of appropriate reaction
For vegetables: pH 6.0 - 6.8
For fruit: pH 5.5 - 6.8
For blueberries: pH 4.0 - 5.2

• Must have proper fertility level — Sample the soil and have it tested. County Extension office personnel can provide information on soil testing.

• Must be supplied with fertilizer as per test results and recommendations.

• Should contain at least 4 to 5 percent organic matter (more is desirable). Add organic matter, using green manure crops, livestock manure, compost or other available material. Set up crop rotations that include soil building crops like grasses and legumes where possible.

Climate-environment:

• Temperature—(1) This factor cannot be changed appreciably by the grower. The crop producer must settle for the temperature as prevails in the area. Early crops can be protected with hot caps, plant tents and for strawberries, sprinkler irrigation. (2) Plant warm and cool season crops at appropriate times (See Table 2). (3) Select crop varieties according to season of maturity. (4) Don't plant fruit in frost pockets.

• Water—(1) Ensure adequate soil drainage. (2) Use irrigation where possible. Consider trickle irrigation as an alternative when water is not in plentiful supply.

• Light—(1) Provide fruit and vegetable plants with as much daily light exposure as possible. Don't plant crops in the shade of buildings or trees. (2) Control light environment of tree fruits with proper pruning and training.

• Atmosphere—Generally, the atmosphere of the locality is conducive to production of all fruits and vegetables. However in some localities, air pollution can be a deterrent to the production of some fruits and vegetables.

Labor: Potential labor sources include:

• Family labor, including a working manager.

• Part-time high school students, retired adults, housewives and vocational school students. One of the strengths of small scale fruit and vegetable production is the opportunity to utilize family labor in a productive way.

Table 1: Range of soil textures preferable for vegetable crops

Crop	Soil Texture
Asparagus	Sandy to clay loam, also muck
Beans, snap	Sandy to silty clay loam
Beans, lima	Sandy to clay loam
Beets	Sandy to silt loam
Cabbage	Sandy to clay loam
Carrots	Muck, sandy soil, to silt loam
Celery	Muck
Cucumbers	Sandy to silt loam
Lettuce, head	Muck, sandy loam
Lettuce, leaf	Sandy soil
Melons	Sandy to silt loam
Onions	Muck
Peas	Sandy to clay loam
Peppers	Sandy to silt loam
Potatoes	Sandy to silt loam, also muck
Radish	Sandy soil or muck
Rhubarb	Sandy to silt loam
Spinach	Sandy soil or muck
Sweet potatoes	Sandy soil
Sweet corn	Sandy to clay loam, also muck
Tomatoes	Sandy to clays
Turnips	Sandy soils

Classification of Vegetable Crops According to Texture of Soil on Which They Are Grown Commercially in Ohio

Grown chiefly on muck:
- Celery
- Onions
- Lettuce
- Radishes

Rarely or never grown on muck:
- Cucumbers, melons
- Squash
- Peas
- Peppers

Grown chiefly on sandy to well-drained silt loam:
- Leaf lettuce
- Cucumbers
- Melons
- Sweet potatoes
- Turnips

Grown on sandy soils or muck, not on heavier soils:
- Carrots
- Spinach
- Radishes

Grown for early crop on sandy soils and for later crops on heavier well-drained soils:
- Asparagus
- Beans, snap
- Beans, lima
- Beets
- Cabbage
- Cucumbers
- Cauliflower
- Potatoes
- Rhubarb
- Tomatoes
- Sweet corn

Original table prepared by Dr. John Bushnell, OARDC, 1956. Revised by E.C. Wittmeyer, OSU, 1972.

Capital: Potential sources of capital:

• Family funds

• Local bank

• Production Credit Administration. Determine capital needs based on crop production budget (see section "Production Costs: Expected Returns for Fruit-Vegetable Crops").

Equipment and supplies: Depending on the crops to be grown, some basic tools and equipment are required. Make selections from the following listing. (Equipment may be new, used or leased, or even on occasion, borrowed or exchanged with neighbors.)

Select from the various categories below those items best fitting the scale of operation.

Table 2: Some common vegetables grouped according to the approximate times they can be planted and their relative requirements for cool and warm weather

Cold-hardy plants for early spring planting		Cold-tender or heat-hardy plants for later spring or early summer planting			Hardy plants for late-summer or fall planting except in the North (plant 6 to 8 weeks before first fall freeze)
Very hardy (plant 4 to 6 weeks before frost-free date)	Hardy (plant 2 to 4 weeks before frost-free date)	Not cold-hardy (plant on frost-free date)	Requiring hot weather (plant 1 week or more after frost-free date)	Medium heat-tolerant (good for summer planting)	
Broccoli Cabbage Lettuce Onions Peas Potato Spinach Turnip	Beets Carrot Chard Mustard Parsnip Radish	Beans, snap Okra New Zealand spinach Soybean Squash Sweet corn Tomato	Beans, lima Eggplant Peppers Sweet potato Cucumber Melons	Beans, all Chard Soybean New Zealand spinach Squash Sweet corn	Beets Collard Kale Lettuce Mustard Spinach Turnip

Soil preparation-fertility adjustment:

- Tractor and plow (size and type to be determined by scale of operation)
- Rotovator or tiller (size and type to be determined by scale of operation)
- Drag
- Disk harrow
- Cultipacker
- Plastic film applicator
- Fertilizer-lime spreader
- Soil fumigator
- Bed shaper
- Spade, digging fork

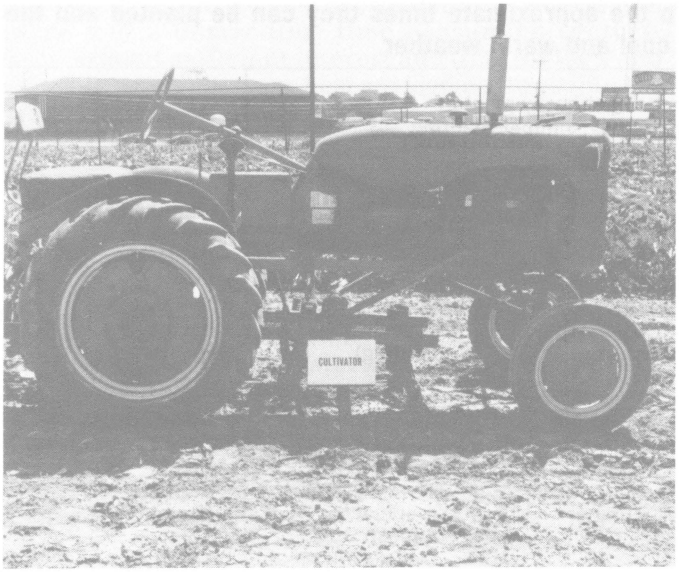
Spraying-dusting equipment.

Seeding and planting equipment and supplies:

- High quality seed
- Precision seeder—(1) Vegetable (various types and models available) (2) Corn or potato planter (3) Grain drill
- Transplanter (1-2 row)
- Trowels, bulb setters
- Small greenhouse, cold frame or hot bed for plant production
- Germinating-growing mediums, including top soil, peat moss, perlite, vermiculite, sand or peat-lite mixtures

Equipment and materials for culturing crops:

- Cultivator (tractor mounted)
- Sprayer-duster (hand or power)
- Irrigation equipment (type and extent varies with scale and type of enterprise)—(1) Sprinkler (2) Trickle
- Mower
- Plastic film or other mulches like straw, sawdust, wood chips or newspapers
- Fertilizer-lime — as prescribed on soil test report
- Stakes, cages, trellis, poles (for crops such as beans, peas, tomatoes, raspberries, grapes)
- Fuel
- Pesticides
- Bird scare devices (for sweet corn and some fruit crops)
- Protective clothing, pesticide safety equipment
- Pruning equipment (hand pruners, lopping shears, bow saw, saw)
- Hand tools — hoes, rakes, shovels, cultivators



A visit with local implement dealers and farmers exchange and hardware store managers can be helpful in determining equipment needs and capital requirements for small scale fruit and vegetable production.

Harvesting and handling equipment and materials:
- Pick-up truck
- Tractor and wagon or trailer
- Mechanical digger, harvester, knives (depending on crop to be harvested)
- Crates, cartons, baskets
- Conveyors
- Pallets-bulk bins
- Ladders

Grading, handling, storage:
- Graders—may be done by hand initially
- Washing equipment (can vary from small holding tank to flushing type systems)
- Bagging-cartoning equipment (may be done by hand)
- Refrigerated storage
- Scales
- Marketing containers

Maintenance: Small farm shop with appropriate equipment—the local vocational agriculture teacher can provide assistance in this area. A tour of the school farm shop may be made to get ideas.

Office—business equipment:
- Filing cabinet
- Adding machine or small calculator
- Record books

Other Items as Per Manager Discretion—An excellent listing of equipment and materials for fruit and vegetable production is found each year in the July issues of both The American Fruit Grower and The American Vegetable Grower magazines (see Appendix). Also, managers of the local farmers exchange, hardware and garden center can be helpful in providing essential production equipment and supplies.

Determining the Cropping System

Important considerations in selecting crops to be grown on a farm include the following:

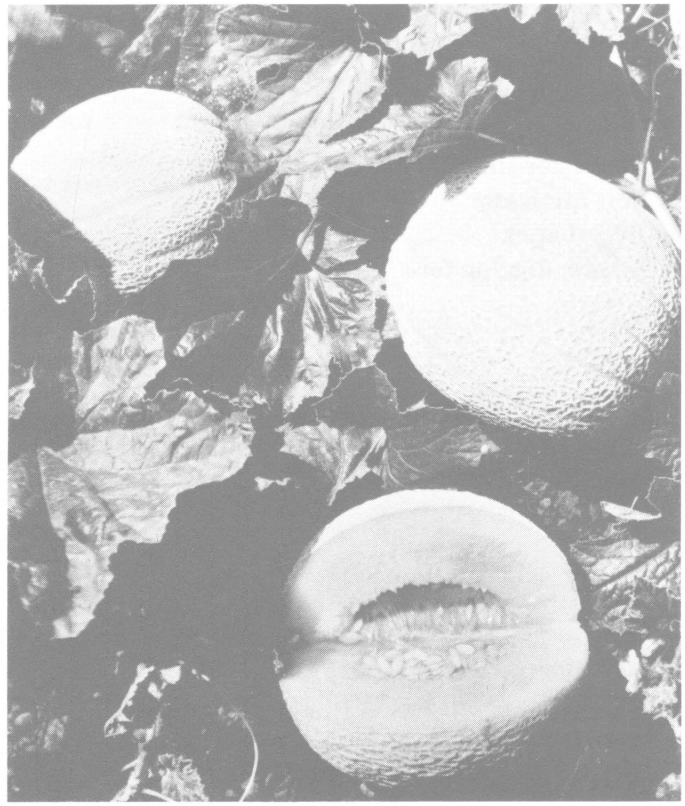
Market potential—It is imperative that a good market outlet be available for the crops produced; otherwise, the enterprise may be destined to failure. Suggested fruits and vegetables for growing on a small farm are as indicated in the section Fruit-Vegetable Crop Maturity Time and Yield Expectations.

Cultural requirements—Some crops are easier to grow than others. In general, tree fruit, grapes, melons and cucumbers are very demanding in terms of cultural requirements.

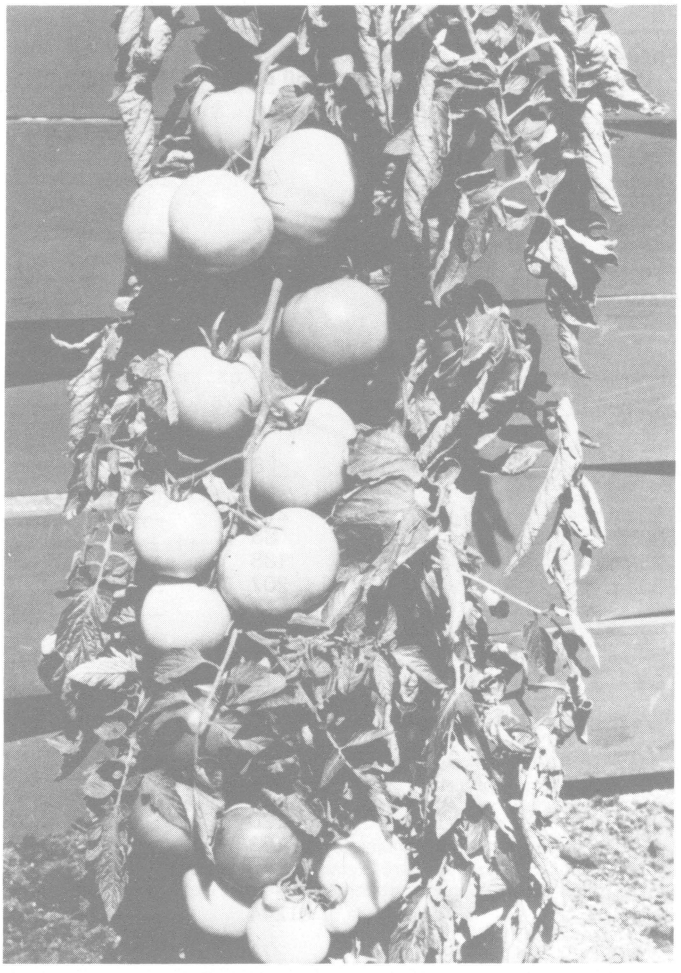
Crop value—Some crops are higher valued than others. Crops like cabbage, radish and turnips tend to be low per unit value crops. Crops like asparagus, melons, strawberries, blueberries and raspberries are examples of high per unit value crops.

Perishability and storage requirements—Crops like asparagus, sweet corn, peas, strawberries and melons are highly perishable. Crops like potatoes and apples are suited to long term storage; thus, immediate marketing is not of great urgency.

Production costs—Some crops are more expensive to produce than others. For example, it costs much more to grow an acre of staked tomatoes than it does an acre of sweet corn.



Muskmelons are a productive and potentially profitable crop. However, they are subject to a number of insect and disease problems and sometimes pollination failures, which result in poor fruit set.



For best results, tomatoes should be supported by staking, caging or trellising. Unsupported plants often produce much unusable fruit due to rot from soil contact.

Personal preference—The choice of crops to be grown depends to some extent on personal preferences. Growers tend to do a better job with crops they like to grow and have some experience and success with in growing.

Production Costs: Expected Returns for Fruit-Vegetable Crops—In determining the cropping program for the farm, it is important to do some budgeting to determine anticipated production costs and returns.

For some fruit and vegetable crops, enterprise budgets have been prepared. The strawberry and sweet corn budgets taken from the 1980 Ohio Enterprise Budgets for Specialty Crops are presented in this publication as examples of the budgeting procedure. Some modifications in the budgets will be necessary to reflect crop production and handling practices on a small scale. Some items of expense like ice for packing sweet corn may not apply to the small scale producer. Also, the small scale operator will likely pay more for some production supplies like seed and fertilizer because of the small quantity purchased. Some small farm family operators may elect to control weeds by use of mechanical means and mulches rather than by use of herbicides.

References listed in this publication can assist the grower in preparing budgets for crops for which no Ohio budgets exist.

Fruit-vegetable maturity time and yield expectations

CROP Vegetables	Approx. Time From Planting to Harvest (weeks)	Plant Spacing[a]	Approx. Yield Per Acre[b]
Snap beans (bush)	7-8	4"x24"	200 bu.
Lima beans (bush)	10-12	6"x24-30"	125 bu.
Cucumbers	8-9	15"x60"	400 bu.
Muskmelon	11-14	30"x60"	250 crates
Peas	9-10	1"x18"	175 bu.
Peppers	10-12	18"x24"	500 (bell type)
Potatoes (late)	16-18	12"x48"	500 bu.
Pumpkin (vining)	14-16	60"x84"	15 tons
Squash (summer)	7-8	36"x60"	550 bu.
Squash (winter)	14-16	60"x84"	15 tons
Sweet corn	9-13	9"x30-36"	1,000-12,000 doz.
Tomatoes (staked)	9-12	24"x36-48"	300 bu.
Turnips	6-7	3"x18-24"	12 tons (topped)
Watermelon	14-17	96"x96"	800 fruits
Asparagus (perennial)	36	18"x48-60"	2 tons

[a] Row spacing depends upon method of cultivation.

[b] Yields per acre can vary considerably from year to year depending upon weather varieties used, attention to details and managerial skill.

Fruit Trees	Months to Full Production	Yield Plant[a] (lbs.)	Plant Spacing	Plants/A[b]
Apple (dwarf trees) (M.9 rootstock)	36-48	75-100	10'x15'	290
Cherry, red tart (full size trees)	36-60	75-90	20'x25'	90
Cherry, red tart (genetic dwarf)	24-36	25-40	15'x20'	145
Pear (full size tree)	48-60	120-150	20'x25'	90
Plum (full size tree)	48-60	100-120	20'x25'	90
Small				
Blackberry	24	3	4'x10'	1100
Blueberry	36-48	6	6'x10'	725
Grape	36-48	20-25	8'x10'	545
Raspberry (red, black)	24	2	2'x8'	2725
Strawberry (June bearing)	15	1	1½'x4'	7260
Strawberry (everbearing)	4 (1st crop during season of planting)	½	1'x1'	43,560

[a] Yields per acre can vary considerably from year to year depending upon weather, varieties used, attention to cultural detail and managerial skill.

[b] One acre is 43,560 square feet of land area.

1981 Sweet corn budget — hand harvest

Item	Explanation	Price Per Unit	Yield/Acre 1,000 doz.	Yield/Acre 1,250 doz.	Your Budget
Receipts		$ 1.00/doz.	$1000	$1250	$_____
Variable Costs					
Seed	10 lbs.	2.50/lb.	25	25	_____
Fertilizer[1]					
N	150 lbs.	.25/lb.	37	37	_____
P_2O_5	75 lbs.	.30/lb.	23	23	_____
K_2O	60 lbs.	.15/lb.	9	9	_____
Lime	1000 lbs.	12.00/T.	6	6	_____
Chemicals					
Herbicide					
Bladex	3 lbs.	3.00/lb.	9	9	_____
Insecticides					
Sevin[2] (8 applications)	16 lbs.	2.00/lb.	32	32	_____
(Soil) Dyfonate 200	5 lbs.	1.52/lb.	8	8	_____
Marketing[3]					
Containers	200, 250 boxes	1.10/box	220	275	_____
Ice	20 lbs./box	35.00/T.	70	88	_____
Hydro cool & pack	5 doz. box	.75/box	150	188	_____
Hired Labor[4]	44, 46 hrs.	4.50/hr.	198	207	_____
Fuel, oil & grease			18	18	_____
Repairs			17	17	_____
Miscellaneous[5]			12	12	_____
Interest on oper. cap.[6]	9 mo.	12.0%	18	18	_____
Total variable costs			852	972	_____
Fixed Costs					
Operator labor charge	4 hrs.	4.50/hr.	45	45	_____
Mach. & equip. charge			44	44	_____
Land charge			120	120	_____
Management charge	5% of gross income		50	63	_____
Total fixed costs			259	272	_____
Total Costs			1111	1244	_____
Return Above Variable Costs			148	278	_____
Return Above Total Costs			111	3	_____

[1] Maintenance fertilizer only.
[2] Or equivalent.
[3] For direct marketing (stands), reduce budgets by marketing costs. If irrigation is used, add about $120 per acre to total costs under each system (direct or package marketing). Yields may be up by 20 to 30%, also.
[4] The labor charge includes social security and workers compensation.
[5] Includes supplies, utilities, soil tests, small tools, crop insurance, etc.
[6] Does not include interest on marketing or labor costs.

1981 Strawberry budget[1] (irrigated — per acre harvested)

Item	Explanation	Price Per Unit	Picking Hired	Picking Your Own	Your Budget
Receipts	8500 lbs.	$.82 .60	$6970	$5100	$_____
Variable Costs					
Preplant fumigation[2]	custom hired (prorated-3 yrs.)	850.00	283	283	_____
Plants	5500/A. (prorated-3 yrs.)	65.00/1000	119	119	_____
Fertilizer[3]					
N	360 lbs.	.25/lb.	30	30	_____
P_2O_5	75 lbs.	.30/lb.	8	8	_____
K_2O	75 lbs.	.15/lb.	4	4	_____
Lime	1500 lbs.	12.00/T.	3	3	_____
Chemicals[4]					
Herbicides					
Sinbar	.75 lbs.	17.00/lb.	13	13	_____
Dacthal	12 lbs.	4.00/lb.	48	48	_____
Devrinol	8 lbs.	5.46/lb.	44	44	_____
Tenoran	8 lbs.	6.00/lb.	48	48	_____
Fungicides					
Captan	20 lbs.	1.80/lb.	36	36	_____
Benlate	1.5 lbs.	10.25/lb.	15	15	_____

(continued on next page)

1981 Strawberry budget[1] Continued

Item	Explanation	Price Per Unit	Picking Hired	Picking Your Own	Your Budget
Insecticides					
Kelthane	2.5 lbs.	$ 3.50/lb.	$ 9	$ 9	$
Plictran	2 lbs.	16.50/lb.	33	33	
Guthion	2 lbs.	5.00/lb.	10	10	
Malathion	6 lbs.	1.30/lb.	8	8	
Straw mulch	3 T.	60.00/T.	180	180	
Containers & misc.[5]			500	300	
Marketing			150	100	
Hired labor	400, 50 hrs.	4.50/hr.	1800	225	
Fuel, oil & grease			61	61	
Repairs			75	75	
Interest on oper. cap.[6]	9 mo.	12%	92	92	
Total variable costs			3569	1744	
Fixed Costs					
Operator labor charge	75 hrs.	4.50/hr.	338	338	
Mach. & equip. charge[7]			330	330	
Land charge			120	120	
Management charge	5% of gross income		349	255	
Total fixed costs			1137	1043	
Total Costs			4706	2787	
Return Above Variable Costs			3401	3356	
Return Above Total Costs			2264	2313	

[1] Based on an operation of four acres with three acres bearing and one acre being established annually. Berries sold at or near place of harvest.
[2] Preplant fumigation is essential to achieve yields specified and to maintain bearing acreage for three years.
[3] P_2O_5, K_2O and lime all at time of establishment, nitrogen applied 60 lb. at establishment, plus 100 lb./A. annually in years two, three and four. Pounds are total, cost is prorated over three acres producing each year.
[4] Refer to Extension Bulletin 506, "1981 Commercial Fruit Spray Recommendations for Ohio," Ohio State University, for additional pesticide recommendations on strawberries.
[5] Includes supplies, utilities, soil tests, small tools, crop insurance, etc.
[6] Does not include interest on containers, marketing or hired labor.
[7] Based on 50 acre operation, 30 of small fruit and 20 of tree fruit; $35,000 investment in machinery, plus cost of irrigation for frost protection.

Crop Production Procedures

Cultural practices used for growing various fruits and vegetables depend chiefly upon the nature of plant and type of products desired. As providing specific technical information for growing particular fruits and vegetables is beyond the scope of this publication, the reader is referred to the various publications listed in the Appendix on page 10. Publications listed give specific details for producing and marketing the various commodities.

To be successful in growing fruits and vegetables, the grower needs to be concerned with the following aspects of crop production:

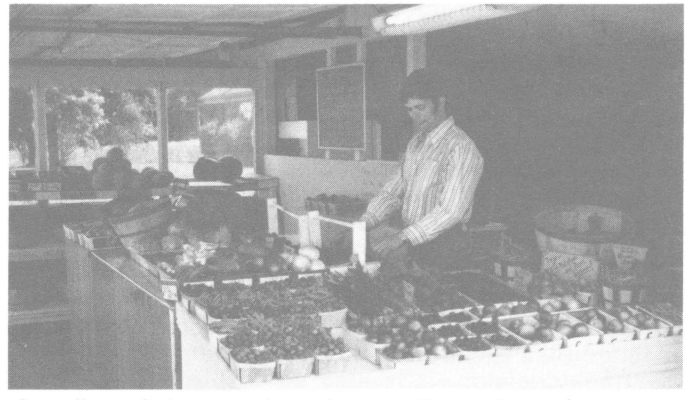
- Site selection
- Varieties (cultivars and hybrids)
- Seed and nursery stock
- Soil-preparation, fertility maintenance and improvement
- Planting techniques
- Cultural practices
- Harvesting, handling and storage
- Marketing

Marketing the Crop

Possibilities for marketing produce from the small farm based on greatest opportunity for dollar return include the following:

- Retailing from roadside market
- Community farmer's markets
- Combination pick-your-own-roadside market
- Pick-your-own operations
- Wholesaling to large area farm markets, local grocery stores or wholesale commission houses

The grower of fruits and vegetables on a small farm should carefully analyze and determine the best approach to marketing produce from his farm. This may well be done in conjunction with a marketing specialist. Attendance at the Annual Ohio Roadside Marketing Conference can provide many ideas as to appropriate marketing techniques. The local county Extension agent can provide additional information on this conference.



On well traveled state and county roads, the small roadside market offers possibilities for marketing fruits and vegetables produced in the small farm family program.

Appendix

Buyer's Guide for Evaluating Small Acreages

Lately many have experienced a strong urge to move to the country. Ready evidence of this movement is seen around towns and small cities and near major metropolitan areas.

People want freedom from smog, dirt, crime and traffic. Many look for open space, quietness, trees, a garden spot and perhaps room for a horse. Many people find country living ideal, but others run into problems.

Whether or not one wants to move to the country is a personal matter, and those considering it have any number of reasons. Some time their move to coincide with a major change in life, such as retirement. Others move intending to seek employment there. Sometimes plans call for commuting to jobs in a metropolitan area. Some may be interested in buying undeveloped land for recreational use and development. Others may limit their search to property they can move into immediately.

After a careful examination of reasons for wanting to move, one should then specify as closely as possible a *type* of property and an *area* consistent with reasons.

If one does make the decision to move, he should go into the change prepared to avoid costly disappointments that may stem from a misrepresentation of the property or simply a lack of background and knowledge needed for country living.

He also would be wise to study and evaluate the many possible social, physical and economic changes that he is likely to experience. These can create considerable difficulties if he has have never lived in a rural area or if he has been away from such an area for a long time. There may be a long list of inconveniences or lack of services he has not experienced before, the necessity to change habits and living routines and a number of nuisances that he neither knew about nor expected.

Factors to Consider

One of the first steps to take before buying in the country is to learn what to look for and how to evaluate property. Open land often costs more than one might expect. If there are buildings or a house on the land, the price may seem high in view of the distance to town.

If you are thinking about buying land in a recreational development or rural subdivision marketed across state lines, ask for and study carefully the property report the developer must file with the Department of Housing and Urban Development (HUD). Avoid hasty decisions. Best protection against an unwise investment decision is to make sure the property is right for you before you make a commitment.

Buying property is similar to making any other investment, for few properties are free from risk or uncertainty. It may help to consult people who live in an area or who have had experience and first-hand knowledge about real property values and construction. Talk to people ... potential neighbors, recent arrivals, established members of the community, local shopkeepers, the banker, schoolteachers and others with whom you will be dealing before you decide to live in a specific area. If time permits, subscribe to the local newspaper or schedule a vacation in the area. When you approach the final decision, it is also advisable to seek legal counsel and make sure the sales contract spells out details of any improvements that may have been promised.

The checksheet below also will help you make decisions based on facts, thereby reducing the possibility of making a bad investment. In using the checksheet, judge the property as it stands, not as it might be after improvements. Additions, changes or remodeling may influence a later decision but should not affect your concern now.

Read through the entire list first to help you relate the various catagories to each other. The list may also suggest other factors important to you that you will want to add.

Neighborhood:

_____ Landscape of the area
_____ Direction and location of property in relation to major trading center
_____ Acreage size of the most recent plots sold
_____ Presence of nuisances
_____ Distance from city or towns
_____ Possibilities of future annexation to nearby towns or cities

Adverse Factors:

_____ Presence of a threat from floods
_____ Undesirable zoning laws in county
_____ Unfavorable deed restrictions
_____ Easements and incumbrances that could interfere with use of the land
_____ Possibility of air pollution problems
_____ Lack of adequate fencing
_____ Possibility of future nuisances in the area

Community Services:

_____ Good roads
_____ Adequate water supply
_____ Availability of sewers or possibility of septic tanks if soil is appropriate
_____ Availability of utilities such as gas, electricity, phone and mail service
_____ Reasonably priced utilities
_____ Schools within reasonable distances
_____ Rural police protection
_____ Dependable and nearby fire protection
_____ Churches
_____ Nearby hospitals and medical care centers
_____ Snow removal on main roads
_____ Good routes to place of employment

Cost Factors:

_____ Area cost of living
_____ Special tax assessments
_____ Real estate taxes
_____ Upkeep on property
_____ Transportation costs
_____ Costs of special equipment or services
_____ Fire and liability insurance rates

Dwelling Characteristics, If Available:

_____ Lot size
_____ House location in respect to total acreage
_____ Well-drained land
_____ Trees
_____ Good exposure to sunlight
_____ Reasonably level yard with potential for landscaping—if not already landscaped

Dwelling Design:

_____ Compatibility of architecture with environment
_____ General attractiveness
_____ Number and size of rooms
_____ Adequacy of closet space
_____ Adequacy of storage space for miscellaneous items
_____ Length and steepness of stairs
_____ Convenience of dwelling traffic pattern
_____ Adequacy of kitchen size in terms of family needs
_____ Arrangement of kitchen for saving steps
_____ Adequacy of cabinet space
_____ Suitability of total design for ease in maintenance, repair or additions

Each prospective buyer will need to consider the items on the checklist in his or her own way. Some of the property attributes are much more important to some people than to others. A nearby school may be worth much to a family with small children but viewed as unimportant to a retired couple.

Some factors may affect values so intensely as to disqualify the property for your purpose. For example, property susceptible to frequent flooding could offset desirable features on all other factors.

Those who wish to apply the guide to unimproved land (no buildings) can skip the dwelling questions and substitute other criteria as desired. And it may be desirable to make inquiries at the county courthouse with the planning commission and the county road department, with utility companies and at any other place where information might be available on potential changes in roads, highways, utility lines and so forth. Finding, for example, that a narrow, winding two-lane state or county highway fronting on the property will be straightened and widened to a four-lane highway could affect not only your decision—it could cost you your front yard.

Source
USDA Fact Sheet 1-1-1, Office of Communication, Washington D C 20250

References and Resources for the Small Scale Fruit and Vegetable Producer

Fruit References

Ohio Cooperative Extension Service publications: Room 23, Agricultural Administration Building, 2120 Fyffe Road, Columbus, Ohio 43210.

Bulletins: 411 Growing Bramble Fruits, 436 Growing Strawberries, 458 Fertilizing Fruit Crops, 506 Ohio Commercial Fruit Spray Guide, 509 Grape Growing, 526 Mulches for the Home Grounds, 528 Pruning and Training Fruit Trees, 559 Bee Pollination of Crops in Ohio, 591 Growing and Using Fruit at Home.

Leaflets: L-1 Backyard Fruit Sprays for Insects and Diseases, L-274 Fruit Varieties for Ohio Home Gardens, L-249 Soil Fumigation.

Newsletters: (1) Buckeye Fruit Tips — A timely newsletter for Ohio fruit growers. Distributed twice a month during the growing season through county Extension offices. (2) Bug Dope—Published regularly during the growing season (subscription fee). (3) Plant Pathology Notes—Published regularly during the growing season.

Department publications, College of Agriculture and Home Economics, The Ohio State University:

Agricultural Economics and Rural Sociology: MM389 "Ohio Crop Enterprise Budgets, Specialty Crops," EC937 Going Into Farming Part Time, L-74 Farm Custom Rates, ES0663 Farm Machinery and Equipment 1980 Cost Estimates.

Agricultural Engineering: Ohio Drainage Guide.

Agronomy: Bul. 472 — Agronomy Handbook — Current Edition.

Entomology: Entomology Department Series, 74-3 — Orchard Sprayers—Use and Calibration.

Out-of-state publications: Michigan Cooperative Extension Service, 10 Agricultural Hall, Michigan State University, East Lansing, Michigan 48824.

Bulletins: E-1246-SF16 Pick-Your-Own, E-1145-SF13 Roadside Marketing for Beginners, E-927 Growing Tree Fruits for On-the-Farm Markets, E-114 Cost of Strawberry Production in Southwestern Michigan, E-1016 Economics of Peach Production in Southwestern Michigan.

Leaflets: No. 28 Hints on Growing Blueberries.

Maryland: Agricultural Experiment Station, University of Maryland, College Park, MD.

Miscellaneous publications: No. 922 An Economic Comparison of Several Small Fruit Production and Harvest Systems in Maryland, 1975.

United States Department of Agriculture: Superintendent of Documents, Washington, D.C. 20402.

Farmers bulletins: No. 1028 Strawberry Culture: Eastern United States, No. 1043 Strawberry Varieties in the United States, No. 1893 Control of Grape Insects and Disease in the Eastern United States, No. 1897 Establishing and Managing Young Apple Orchards, No. 2123 Growing American Bunch Grapes, No. 2125 Making and Preserving Apple Cider, No. 2140 Strawberry Diseases, No. 2160 Growing Blackberries, No. 2165 Growing Raspberries, No. 2184 Strawberry Insects: How to Control Them, No. 2208 Controlling Diseases of Raspberries and Blackberries, No. 2254 Commercial Blueberry Growing, Agr. Info.-Growing Fruits and Nuts Bul. No. 408.

Home and garden bulletins and leaflets: No. 119 Storing Vegetables and Fruits in Basements, Cellars, Outbuildings and Pits; No. 207 Thornless Blackberries for the Home Garden; No. 172 Why Fruit Trees Fail to Bear; No. 407 Dwarf Fruit Trees; No. 525 Growing Black Walnuts for Home Use.

Yearbooks; 1977 Yearbook of Agriculture, Gardening for Food and Fun; 1978 Yearbook of Agriculture, Living on a Few Acres.

Fact sheets: AFS-1-1-1 A Buyers Guide for Evaluating Small Acreages.

Newsletters: Small Farm Family Newsletter.

Industry Publications

Periodicals: The American Fruit Grower. Published monthly by Meister Publishing Co., Willoughby, Ohio; The Packer. The national weekly newspaper of the fruit and vegetable industry. Publication office: 7950 College Blvd., P.O. Box 2939, Shawnee Mission, Kansas 66201; The Great Lakes Vegetable Grower News. Published monthly: Official publication of the Michigan Vegetable Council Inc., P.O. Box 128, Sparta, Michigan 49345; The Ohio Vegetable Grower. Published 10 times a year, as a joint publication of the Ohio Agricultural Marketing Association and the Ohio Vegetable and Potato Growers Association, P.O. Box 479, 35 E. Chestnut St., Columbus, Ohio 43216.

Tennessee Valley Authority, Muscle Shoals, Alabama 35660, Bulletin V-148 Marketing Alternatives for Small Farmers: Fruits and Vegetables.

Fruit nurseries: Current catalogs.

Books: Childers, Norman. Modern Fruit Science. Rutgers — The State University, Horticultural Publications, Current Edition; Westwood, Melvin N. Temperate Zone Pomology. San Francisco. W.H. Freeman and Co., 1978.

Short courses and field days:* Strawberry Short Course, Small Fruits Day, Orchard Day, Fruit School, Annual Meetings Ohio Fruit Growers Society, Ohio Roadside Marketing Conference.

* Contact county Extension office for dates. Some events held on a biennial basis.

Industry Organizations: Ohio Fruit Growers Society. Contact Executive Director, 35 E. Chestnut St., Columbus, Ohio 43216.

Vegetable References

Ohio Cooperative Extension Service publications:

Bulletins: 287 Home Vegetable Gardening, 459 Vegetable Insect and Disease Control for Commercial Growers, 498 Home Vegetable Garden Insect Control, 526 Mulches for the Home Grounds, 555 Let's Take a Look at Organic Gardening, 559 Bee Pollination of Crops in Ohio, 589 Potato Late Blight: Questions and Answers.

Leaflets: L-100 Vegetable Varieties for the Ohio Home Gardens, L-258 Ohio Potato Production Guidelines, L-249 Soil Fumigation.

Mimeographs: MM256 Tips on Growing Bedding Plants (also includes vegetable transplants), MM246 Herbicides for Weed Control in Vegetable Crops.

Newsletters:
Horticulture, entomology, plant pathology: (1) Commercial Vegetable and Potato Growers Newsletter. Published regularly during the growing season. Department Publications, College of Agriculture and Home Economics, The Ohio State University; (2) Bug Dope. Published regularly during the growing season (subscription fee); (3) Plant Pathology Notes. Published regularly during the growing season.

Agriculture economics and rural sociology: MM389 Ohio Crop Enterprise Budgets: Specialty Crops, EC937 Going Into Farming Part-Time, L-74 Farm Custom Rates, ES0663 Farm Machinery and Equipment 1980 Cost Estimates.

Agricultural engineering: Ohio Drainage Guide.

Agronomy: Bul. 472 Agronomy Handbook—Current Edition.

USDA publications: Superintendent of Documents, Washington, D.C. 20402.

Farmers bulletins: 2232 Commercial Growing of Asparagus, 2086 Growing Pumpkins and Squash, 2200 Controlling Tomato Diseases.

Home and garden bulletins: 202 Growing Vegetables in the Home Garden; 046 Insects and Disease of Vegetables in the Home Vegetable Garden; 119 Storing Fruits and Vegetables in Basements, Cellars, Pits and Outbuildings; 180 Growing Tomatoes in the Home Garden.

Leaflets: LF544 Protecting Honeybees from Pesticides, 360 Growing Table Beets.

Marketing bulletins: 59 How Fresh Tomatoes Are Marketed.

Yearbooks: 1977 Yearbook of Agriculture, Gardening for Food and Fun. 1978 Yearbook of Agriculture, Living on a Few Acres.

Miscellaneous publications: A Guide to Energy Savings for the Vegetable Producer.

Out-of-state publications:

Indiana: Department of Horticulture, Agricultural Experiment Station, Purdue University, West Lafayette, Indiana. Station Bulletin 223 Small Farm Costs and Returns: Pick Your Own Vegetables.

Industry publications:

Periodicals: The American Vegetable Grower. Published monthly by the Meister Publishing Co., Willoughby, Ohio; The Packer. The National Weekly Business Newspaper of the Fruit and Vegetable Industry. Publication Office: 7950 College Blvd., P.O. Box 2939, Shawnee Mission, Kansas 66201; The Great Lakes Vegetable Grower News. Published monthly. Official publication of the Michigan Vegetable Council Inc., P.O. Box 128, Sparta, Michigan 49345; The Ohio Vegetable Grower. Published 10 times a year as a joint publication of the Ohio Agricultural Marketing Association and the Ohio Vegetable and Potato Growers Association, P.O. Box 479, 35 E. Chestnut St., Columbus, Ohio 43216.

Books: Knott's Handbook for Vegetable Growers. Available from John Wiley & Sons, Inc., One Wiley Drive, Somerset, New Jersey 08873, Current Edition; Tennessee Valley Authority. Bulletin V-148 Marketing Alternatives for Small Farmers: Fruits and Vegetables. Muscle Shoals, Alabama 35660.

Short courses and field days:* Bedding Plant School — Annual meetings of the Ohio Vegetable and Potato Growers Association, Potato Field Day, Potato Short Course, Sweet Corn Short Course, Several Area Schools and Twi-Light Meetings.
* Contact county Extension office for dates.

Industry organizations: Ohio Vegetable and Potato Growers Association. Contact Executive Director, 35 E. Chestnut St., Columbus, Ohio 43216.

Seed companies: Current Seed Catalogs.