

SHALL WE *Move to the Country?*

|| A statement of the oppor-
tunities and problems met
in acquiring and managing
a small farm.

Circular 479

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Shall We Move to the Country?

A Statement of the Opportunities and Problems Met in Acquiring and Managing a Small Farm

A SMALL FARM means different things to different people, and it means different things in different localities. Perhaps the areas most commonly spoken of as small farms consist of 3 to 40 acres, tho in many farming localities an 80- to 100-acre tract would be considered a small unit. Acreage indeed forms a very imperfect measure of a farm unit because of differences in topography, in productive capacity, and in adaptability to specific uses. A highly productive 10 acres may grow a greater volume of products than an unproductive 40 acres. In this circular chief emphasis is given to the problems encountered on the smaller "small farms"—those ranging from about 5 to 20 acres.

Small farms in Illinois are widely distributed. The heaviest concentrations are in and near suburban areas, or in mining regions, where some employment off the farm is available for at least part of the year.¹ Usually on the smaller of these farms the families produce not more than enough for their food supply, whereas on the larger ones the entire family maintenance may come from the farm.

Interest in the possibilities offered by small farms as means of reducing costs of food and shelter and providing more adequate diets, relatively certain income, and a safe investment for savings, has come to the fore among certain classes of urban residents in recent years. This pull of the land is likely to be particularly strong during and after periods of depression, when usual lines of employment have been broken or rendered uncertain, and in periods of rising prices, when expenses increase more rapidly than incomes. The uncertainty of employment during depression and the difficulties that older workers find in competing with younger men for jobs, have placed at a premium those occupations which offer a reasonable measure of security.

¹In 1935 there were 50,849 farms in Illinois having less than 50 acres each—22 percent of all farms in the state (U. S. Census of Agriculture, 1935).

According to a study made in 1933 of 3,090 part-time farms in eleven areas in Illinois, 39 percent were less than 3 acres in size, 43 percent consisted of 3 to 20 acres, and 18 percent consisted of 20 to 50 acres.—W. W. Rose, "Self-Sufficing and Part-Time Farms in Selected Areas in Illinois. With Special Reference to Tenure and Valuation, 1929-1934." Unpublished thesis, University of Illinois, 1933.



A small farm that is well located and well kept offers an attractive and healthful place to live



During the industrial depression of the first half of the present decade many urban residents moved to the farms. At the beginning of 1935 there were residing on farms in Illinois 61,019 persons five years old and older who had lived in nonfarm residences five years earlier.¹ While much of this shift in population may be temporary, and a shift cityward may occur when labor demands of city industries improve, some of these people will no doubt remain on the farms.

Many of those who live on small farms are dependent upon off-farm sources of income for part of the family living. To the extent that large city industries are broken into smaller units and plants are established in smaller centers, factory employment becomes available to rural dwellers. Automobile transportation and improved roads have widened the areas from which industrial workers may be drawn. At the same time, reductions in number of hours of work per week permit some time to be given to other work. Small farms thus tend to become more attractive to industrial workers. In some cities real-estate firms have advertised small farms as a means of disposing of outlying holdings.

OPPORTUNITIES ON THE SMALL FARM

Besides the opportunity to reduce the cost of rent and food, or to have a more abundant food supply by producing a large part of it at home, a small farm offers a satisfying variety of slack-time employment, including work with growing things and living creatures.

If the small farm is well located, it will likely be a healthful place to live, free from city noise and smoke. And because of less congested surroundings a better opportunity for rearing children and developing intimate family associations may be found here than in the city.

Furthermore if the farm is well selected, the investment may bring one the security that is associated with home ownership—an objective that appeals to older people particularly.

LIMITATIONS OF THE SMALL FARM

Small farms in general have certain definite limitations. These assume greater or less importance, and tend to outweigh or be outweighed by the advantages, according to the location and nature of the particular farm, or the desires and habits of those who live upon it, or contemplate living upon it.

¹Special report, U. S. Census, 1935.

Considerable cash outlay is involved in getting even a small farm started. If the farm is purchased, there must of course be an investment in real estate. And whether the place is rented or bought, there will be expenses for equipment and livestock, seed, feed, and other items, and for the family living for a considerable period until products are ready for sale.

Returns from the farm will vary from year to year. They should therefore be calculated on the basis of average production for a period of years, keeping in mind that adverse conditions, such as drouth, flood, or hail may cause near or total crop failures in some years. Even in favorable years the volume of produce must necessarily remain small, because of the small size of the farm. Profits from sales will consequently be limited. And not infrequently in such favorable years the local markets will be oversupplied when surplus products are ready for market, and prices will consequently be low.

Furthermore a small farm is poorly suited to make the most efficient use of labor and farming equipment. If the kind of equipment that is usually used on larger farms is purchased for the small farm, the operating expenses per acre will necessarily be high. On the other hand, if very little farm machinery is used, the work must be done by hand and the labor input will consequently be particularly heavy. To meet these heavy acre-expenses (whether of cash or of labor), intensive methods of production are necessary, and these in turn are likely to increase the hazards from diseases and insects. In general, farming involves hard work, and may leave little leisure time, particularly at some seasons.

Tho the small farm itself may have some desirable features in contrast to the city as a place to live and rear a family, there are often undesirable features as well, particularly when the community in which the farm is located is considered as a whole. The various conveniences and commercial amusements to which city dwellers are accustomed are usually quite limited for dwellers on farms. Or those amusements which are available may be undesirable—dance halls and "taverns" that lower the moral conditions of the community. The church to which the family is accustomed may not be easily accessible. School standards may be lower than in cities. And health conditions may be questionable because of lack of supervision of water supplies and sanitation.

And finally, unless the farm provides all the income, the availability of enough outside work to supply the needed additional income becomes an important problem.

PERSONAL REQUIREMENTS FOR SUCCESS

Some knowledge of farming, some previous farm experience are highly desirable for those who set out to operate a small farm. Farming successfully today demands much more technical knowledge than was required a generation ago. Soils have become depleted and require skilful management to restore their fertility. Insects and diseases have become more prevalent and must be controlled by appropriate measures if crops and livestock are to be grown at reasonable costs. Breeds of livestock and varieties of crops have been greatly improved, and proper selection is necessary to meet competition. Wrong choices or overinvestment in equipment can easily defeat the purpose of the small-farm dweller.

Willingness and ability to work hard when rush periods come are also essential to success in farming. A plentiful supply of family labor is valuable at such periods, and helps to keep down cash operating expenses. If several members of the family are of working age, arrangements usually can be made so that no one will be unduly burdened. Necessarily, however, the tasks of the homemaker on a small farm are many and heavy, and good health on her part is an important item in the success of the venture.

Family cooperation is called for, also, in the gathering, preserving, and storing of food supplies. Since much of the production is seasonal, a surplus must be grown for use during the rest of the year. This normally involves considerable work in the home.

CAPITAL REQUIREMENTS

Enough capital should be available to those getting started on a small farm to cover the original investment and to provide a reserve sufficient to meet the expenses in operating the farm and maintaining the family until returns begin to come in. Land and buildings represent the major part of the investment. When very little capital is available, it is usually best to rent the real estate and to use the available capital for stocking the farm and buying needed equipment. If debts are incurred in making the investment, the extent of the indebtedness should not be so large but that the anticipated net income will be large enough to pay the interest and to repay the loan, in addition to meeting the current living expenses of the family.

Expenditures for buildings on small farms vary greatly, depending upon the size of buildings, the kinds and local prices of materials, and the amount of labor which must be hired for construction. New materials of satisfactory quality for a cottage type of dwelling 24 by 24 feet in size usually cost about \$1,500. The materials for a poultry

house 12 by 16 feet for housing a flock of 50 hens cost from \$75 to \$100. For a house for a 250-hen flock the cost would be slightly cheaper in proportion, or about \$275 to \$350. The materials for an A-type hog house cost from \$8 to \$10. A satisfactory shelter for housing a cow, feed, tools, and an automobile would cost about \$150 for materials. For each additional cow (up to 3 or 4) an additional cost of \$50 to \$75 would be required. Whenever possible the lumber, gravel, and stone should be obtained locally, or salvage materials from old buildings should be used, as means of reducing expenses.

The costs of construction, if all labor is hired, would amount to about as much as that of the materials. A man who is handy with tools and can devote sufficient time to it can do much of the necessary work by getting some plans¹ and specifications.

SOURCES OF CREDIT

Farmers often use credit to supplement their own capital in getting established on a farm or in carrying their enterprises thru difficult periods of crop failure or losses from other causes. Under favorable circumstances it is sometimes possible to borrow as much as 75 per cent of the appraised value of farm property. Debts should be kept to the minimum, however, in order to keep the payments on interest and principal as low as possible.

Long-term loans on an amortization plan at a low rate of interest may be secured from the Farm Credit Administration to purchase or improve land, provide buildings, or refinance indebtedness. Semiannual payments are made on the interest and the principal, and the principal is thus gradually reduced. Applications for these loans should be made to the nearest national farm loan association or to the Federal Land Bank in St. Louis. Loans for similar purposes, altho the amounts obtainable will probably be smaller, may also be secured from life-insurance companies, individuals, and from some banks.

Shorter loans for the purchase of livestock and equipment and for the production and harvesting of crops are available from several sources. The Production Credit Division of the Farm Credit Administration, local banks, individuals, and some selling agencies make such loans. In emergency situations when the credit basis is impaired, credit may sometimes be obtained thru government agencies. Information concerning available credit of this type may be obtained from the county farm adviser.

¹Plans for various sorts of farm buildings are available at the Department of Agricultural Engineering, University of Illinois. Plans are likewise included in many of the publications listed on pages 29 to 31 of this circular.

When the farm enterprise is under way, an accurate record of the farm business provides a constructive basis for securing credit, as well as a means of determining the efficiency and profitableness of the farm. Such a record also provides a means of recording and studying the family living expenses. An account book designed for the farm business is published by the Illinois Agricultural Experiment Station, University of Illinois, Urbana. Particulars will be sent on request.

CHOOSING A SMALL FARM

A farm should be selected according to the kind of farming to be carried on. Among the basic considerations that should be taken into account are size of farm, nature and quality of soils, the topography or "lay of the land," the improvements on the farm, the kind and quality of roads, markets, and social institutions in the community, and the present and probable future rate of taxation.

Size of farm. The acreage needed on a small farm depends upon (1) whether the unit will be expected to provide only the family food supply, or to produce a considerable surplus for market; (2) the kind of crops to be grown; (3) the amount of livestock to be kept, and whether the feed for the livestock is to be produced on the farm or purchased; and (4) the fertility of the soil and the intensity of culture to be used. Altho the amount of produce usually obtained from an acre of land under ordinary farming practices can be greatly increased under intensive methods, such methods require a considerable amount of skill and an increased expenditure of money or effort or both.

Texture and fertility of soils. A farm should not be chosen for rental or purchase unless it is clear that the soil or soils are adapted to the use to which the land is to be put. Soils vary widely in their suitability for different uses. A strongly sloping hillside in some parts of the state, for example, might be excellent for alfalfa but not suited to corn, while in other sections a similarly situated slope might be best adapted to timber.

Descriptions of soils in most parts of Illinois may be obtained free of charge from the Illinois Agricultural Experiment Station at Urbana.

In choosing a farm, the most important considerations to be given to soils are the following:

1. *Texture of the soil particles.*—If the soil particles are very fine, the soil will be hard to work. If they are coarse, the soil will very likely be drouthy. For the most part, the upland soils of Illinois have a desirable texture. In the larger bottoms, however, some soils are so fine-textured as to be undesirable, particularly for a small farm.

The texture of soil that is desirable for some crops is not so suitable for others. The most productive and most durable soils in Illinois are the fine-textured, very dark-colored clay loams. These soils excel for corn but should not be chosen for vegetables, fruits, or for a small tract to be used for a variety of purposes. The coarse-textured soils found mainly in sandy areas, such as those in Kankakee, Mason, Henderson, and Whiteside counties, are commonly undesirable.

2. *Permeability.*—Soils should be sufficiently permeable to permit ready penetration of water and roots, but not so permeable as to be drouthy. Soils that are too impermeable to be generally satisfactory for the production of crops may be found in the southern and northeastern parts of Illinois. Soils that permit too rapid penetration of water are also very undesirable, but they occur much less commonly in Illinois than do "slow" soils. The soils that are too rapid occur in the northeastern part of the state, in the sandy regions, and on terraces bordering bottomlands along streams.

3. *Organic-matter content, acidity, and supply of nutrient elements.*—These are important factors in determining the producing capacity of soils. They are not so fundamentally important, however, as texture of soil particles and permeability, for organic-matter, plant-nutrient deficiencies, and acidity can be corrected, but neither texture nor permeability can be changed. Organic-matter content can be judged by the color of the soil, the darker-colored soils usually containing the most organic matter; and tests can be made to ascertain acidity and content of nutrient elements.

Soils of high fertility require care in the cropping and cultural practices employed, the return of plant-food materials, and the control of washing, if their productive capacity is to be maintained. In many parts of the state the original fertility of the soil has already been seriously depleted; and on such soils considerable expense, work, and time for improvement must be expended before maximum production can be expected.

On land that is moderately to steeply rolling, erosion is likely to cause heavy losses of fertility. One who contemplates buying or renting such land should not fail, therefore, to consider some of its limitations. Contour cultivation (plowing, planting, and cultivating across rather than up and down the slope) will, for example, be necessary; also the growing of crops that do not require frequent cultivation, and on some lands the construction of terraces.

Improvements. The adequacy or inadequacy of the improvements should be appraised thoroly when a farm is being selected, and

the probable need for and cost of new improvements and remodeling should be taken into consideration. On a small farm the investment in buildings and other improvements may easily equal or exceed the investment in the land. Overinvestment in buildings, necessitating heavy expense for maintenance and depreciation without increasing returns, is an error in judgment made by many small-farm owners. Buildings to house livestock and tools should be ample for the purpose to be served but need not be elaborate. Portable shelters, for example, are more desirable for poultry and hogs than permanent structures, for they may be moved more easily to clean ground.



The number and kind of buildings on a small farm vary greatly according to the type of farming to be carried on, and except on the larger small farms their cost may exceed the cost of the land

Old buildings sometimes may be remodeled to furnish adequate and suitable shelter for livestock, tools, and feed. Or salvage materials from old buildings that are being torn down in the community may sometimes be purchased at a cost much less than that of new materials.

Fencing costs likewise may be kept at a minimum by limiting the fencing to the areas used by livestock, or by using temporary fences. On the other hand, if garden areas also are fenced, these and the poultry lots may be rotated, a practice that is valuable in controlling garden insects and poultry diseases.

The size, structural material, and style of the dwellings on small farms vary greatly, according to the tastes and financial resources of the families. In suburban areas electricity and municipal systems of running water and sewage disposal may be available to small farms. In other locations such conveniences may be provided on the farm itself, but to do so usually requires a considerable outlay of money and labor.

Roads. Location on an all-weather road is almost a necessity for most small-farm dwellers. Part-time farming requires ready access to outside work so that time may be used advantageously. The type of roads over which one must pass and the distance he must travel to reach a church, school, hospital, and a market must be considered when a farm is being chosen.

Markets. Adequate and accessible markets are essential to a reasonable cash income from surplus production, and they are especially necessary if perishable products which command a price premium if marketed fresh at frequent intervals are to be produced on a commercial scale.

Surplus production on small farms usually consists mostly of vegetables, poultry products, and dairy products, for all of which frequent marketing is essential. Rarely does the volume of products justify shipping to a central market. Cooperative marketing associations providing wider marketing outlets on a basis of graded products are sometimes available, and if enough products are marketed, membership in such associations may prove valuable. For most small farms, however, markets will probably be limited to local outlets, in which competition is likely to be keen during the usual marketing periods. Products that are superior in quality or are produced out of season may have greater demand, but production of this type is more difficult.

Social institutions. The availability of various social institutions has an important bearing on the attractiveness of a location. Easy access to a good school, to adequate hospital facilities, and to a church of one's own choice are considerations which should not be overlooked in selecting a small farm.

Taxes. The tax rate, the basis of assessment, the bonded indebtedness of the community, and the dates for retirement of bonds should be carefully ascertained before property in a community is purchased. Tax rates on farm property lying inside the corporate limits of villages and cities are usually considerably higher than the rates on property outside such limits. The higher rates prevail even tho the farm inside the corporate limits may be too far away from the village or city itself to use the facilities for which the higher rates are assessed.

PRODUCING THE FAMILY FOOD SUPPLY

Families having incomes from off-the-farm employment sufficient to meet cash expenses usually confine the production of the farm to supplying food for the family, making little or no attempt to develop the enterprises of the farm commercially. The discussion in the present section is intended primarily for such families, tho it will be of interest also to those engaging in commercial production (discussed in the following section, pages 21 to 28), for the production of the family food supply is the basic problem for both groups of families. By careful planning, a large portion of the food needed by the family can be produced at home.

The first step in organizing the small farm for the production of food is to form a fairly accurate estimate of the yearly needs of the family, how much of the various kinds of foods that can be produced and preserved at home will be needed. The approximate amounts that are needed by a family of four (a man, a woman, and two children 8 and 3 years of age) are listed on page 14.¹ The various amounts listed should be sufficient for the average farm family, but they may of course be varied to meet individual needs and preferences.

The production of the family food supply is discussed here on the basis of enterprises, any or all of which may be combined on the individual farm.

Vegetables and fruits. Vegetables and fruits commonly grown in Illinois are grouped in the table on page 15,¹ on the basis of their place in the diet and the amounts of each to plant *per person*, for a fresh supply and for storing and canning.

For a family of six, an abundance of vegetables and small fruits, including the winter supply of potatoes and sweet potatoes and other vegetables to be stored and canned for winter use, can be grown on one acre of fertile land under intensive methods of culture. Intensive culture includes liberal fertilizing, planting as closely as the nature of the given crop will permit (assuming that much of the tillage will be done with wheel hoes and other hand tools), thoro tillage, and succession cropping of certain vegetables.

Information on kinds of vegetables, recommended varieties, planting dates, distances for planting, and methods of storing food for winter use, may be found in Illinois Circular 325, "The Long-Row Farm Garden." A few vegetables included in the garden plan in that publication, such as watermelons and winter squash, which occupy a

¹Issued also as a wall chart by the Department of Home Economics, University of Illinois, and available on request.

The Farm Family Food Supply

Foods	Servings per person weekly or daily		A liberal supply per person per year			
	Adults	Children	Active man or boy over 14	Active woman or girl over 12	Child 8 years	Child 3 years
<i>Dairy products</i>						
Milk.....	1 to 2 pts. daily	1 qt. daily	gals. 70 to 90	gals. 70 to 90	gals. 90	gals. 90
Cream and cheese....	Part of the above milk may be used in these forms					
Butter.....	¼ lb. weekly	⅙-¾ lb. weekly	lbs. 40	lbs. 30	lbs. 25	lbs. 10
<i>Vegetables</i>						
(Fresh, canned, or dried)						
Tomatoes.....	6 times weekly		100	100	100	75
Green, leafy.....	6 times weekly		70	70	70	50
Root.....	6 times weekly		100	100	100	50
Dried beans, peas.....	2 times weekly		10	5	3	..
Potatoes.....	2 times daily	1-2 times daily	180	110	110	90
Others.....	3 times weekly		60	60	60	25
<i>Fruits</i>						
Fresh, canned, or dried	2 times daily		220	220	220	125
<i>Poultry and eggs</i>						
Chickens, ducks, etc....	Once weekly		25	25	25	5
Eggs.....	10 weekly	1 daily	dos. 40	dos. 40	dos. 30	dos. 30
<i>Meat and meat products</i>						
Beef, veal, lamb, fresh or canned.....	3 times weekly		lbs. 55	lbs. 55	lbs. 40	lbs. 7
Pork, fresh, salted, smoked, or as sausage	4-5 times weekly	1-4 times weekly	80	70	25	3
Lard.....	Moderate amounts in cooking		25	15	5	..
<i>Cereal products</i>						
Flour.....	As bread, biscuits, etc., every meal		145	55	25	15
Cereal.....	For breakfast daily; frequent use in combination dishes		100	75	50	32
<i>Sweets</i>						
Sugar (including that used in canning and preserving), molasses, sirup.....	Moderate amounts	Small amounts	80	60	30	7
<i>Miscellaneous</i>						
Beverages, condiments, baking powder, etc. Since these items will be used in variable quantity and must be purchased, no estimate is given.						

The Home Garden and the Year's Food Supply
How Much to Plant, to Eat Fresh, to Preserve

Foods	Servings per person		Quantity per person per year	Methods of preserving		Amount to plant per person (with fair yields under favorable conditions)			
	Weekly	Yearly		Preferred method	Other methods	Spring	Fall		
Vegetables									
Tomatoes.....	6	300	30 qts.	Can	{ Catsup Chili sauce	15 plants			
Cabbage	6	310	{ 40 lbs. 10 lbs.	Pit Kraut	.....	18 plts.	18 plts.	
Lettuce			9 ft.	6 ft.	
Spinach			40	6 pts.	Can	15 ft.	15 ft.
Carrots	6	315	120	30 lbs.	Pit	Can	15 ft.	15 ft.	
Turnips			60	15 lbs.	Pit	10 ft.	15 ft.	
Beets			60	10 lbs.	Pit	Can	10 ft.	10 ft.
Parsnips			15	10 lbs.	Pit	6 ft.		
Onions			60	12 lbs.	Dry place	20 ft.		
String beans	1 to 2	80	50	8 qts.	Can	{ Salt Pickl. }	60 ft.		
Asparagus			10	.....	.....	.....	8 crowns
Broccoli			10	4 plts.	4 plts.	
Celery			10	8 plants		
Peas	3	120	30	4 pts.	Can	Dry	45 ft.		
Beans (dried)			40	7 lbs.	Dry	.....	105 ft.	
Corn			50	{ 10 pts. 1 lb.	Can Dry	.....	100 ft.	
Potatoes (white)	14	765	685	3 bu.	Cellar	.....	400 ft.	
Potatoes (sweet)			50	3/4 bu.	Dry place	.....	50 ft.	
Squash.....			30	10 lbs.	Dry place	.....	1 plt. | 3 plts.	
Fruits									
Apples	10	510	360	2 bu.	{ Cellar Can	Use also for jelly, marmalade, conserve, jam, butter, spicing			
Peaches			100	12 qts.	Can				
Pears			50	9 qts.	Can				
Cherries	3-4	170	30	4 qts.	Can				
Plums			30	5 qts.	Can				
Rhubarb			50	4 qts.	Can				
Berries			60	4 qts.	Can				

large area for the amount of food produced, would perhaps be omitted from the small-farm garden. Suggested small-fruit plantings include 20 grapevines, 250 strawberry plants, 40 black raspberry bushes, 30 red raspberry plants, 25 blackberry plants, 10 gooseberry bushes, and 12 currant bushes. At full production these should provide about 250 pounds of grapes and 340 quarts of small fruits.

Not too much should be expected from tree fruits on the small farm. Several years are required from time of planting a fruit tree until it is large enough to bear, and even then production is likely to be uncertain and irregular. Unless the trees are properly sprayed, insects and diseases are likely to ruin the crops. Suitable equipment for spraying trees is expensive; tho sometimes power spray outfits are available for hire, and hand outfits may be used.

If fruit trees are planted for home use, probably not more than one-fourth acre should be devoted to them. The one-fourth acre should be in addition to the area provided for vegetables and small fruits. Six apple trees, three each of pear, peach, and plum, and two each of sour cherry and sweet cherry make a planting well adapted to family needs. Each tree should be a separate variety adapted to the locality and the trees should be so selected that successive crops will ripen thru the fruit season.

Canning equipment. Since one of the purposes of the small farm is to produce the family food supply, large amounts of fruit, vegetables, and perhaps meats, will be canned for winter consumption. A steam-pressure cooker should therefore be considered a very desirable piece of home equipment; in fact, it is practically essential if meats are to be canned safely. If tin cans are to be used, then a tin-can sealer must be added. (See Circular 394, "Home Canning of Foods for Family Use," for further information on these points.)

Poultry and eggs. A flock of 50 hens should supply enough eggs for the family's needs and provide a surplus for sale during part of the year. Such a flock should produce ten dozens of eggs per hen for the entire year, an average of 16 eggs daily. For about four or five months, from September to January, probably fewer than a dozen eggs would be obtained daily.

A 50-hen flock requires a total of about 12 pounds of feed a day, or nearly 400 pounds a month. The poultry house for 50 hens should be large enough to provide approximately 200 square feet of floor space.

The loss by death during the year in a flock of 50 hens may be

expected to fall between five and ten hens. Sometimes, however, the loss is much heavier, amounting to as many as half the flock.

Not more than half, and often not more than one-third of the hens will be worth carrying over for a second year of egg production. Most commercial operators plan to replace about two-thirds of the laying flock each year. The most economical method of maintaining a small flock is to buy baby chicks and raise the pullets from them. At least 100 day-old chicks will be needed, for one-third will probably be lost and half the remainder will be cockerels. The male birds may be used for part of the meat supply of the family. At about 2½ pounds weight they make good broilers, at about 4 pounds fryers, or they may be caponized and carried to heavier weights. Hens culled from the laying flock also can be used for meat.

Dairy products.¹ A generous supply of dairy products in the family diet reduces the total cost of other foods, increases the nutritive value of the diet, and aids in the preparation of many other foods. Properly managed, the production of the family supply of dairy products will reduce materially the total cost of food, for milk and butter, particularly if they are purchased, are large items of expense in the food budget. For a liberal supply of dairy products for a family of five or six, about 400 to 500 gallons of milk and 90 to 175 pounds of butter are needed yearly.

During the first part of the lactation period, a good dairy cow well fed and cared for may be expected to provide all the fluid milk and cream and two-thirds of the butter needed by an ordinary family. But inasmuch as there is a decline of about 10 percent a month in the milk production of a cow after the first month or two following freshening, the milk supplied by one cow toward the close of the lactation period would usually not be sufficient to meet the needs of the family. If only one cow is kept, milk and other dairy products would need to be purchased during this period and for a month or two while the cow is dry. Keeping two good cows and breeding them so that they will freshen about six months apart, is an arrangement that will provide an adequate supply of dairy products thruout the year. Skim milk and buttermilk may be used for food or for feeding poultry or hogs.

A cow, to do well and produce a satisfactory flow of milk, must be kept in comfortable, clean quarters. Someone must devote time at regular periods every day to feeding and caring for the animal and

¹Much of the material in this section is abstracted from Farmers' Bul. 1753, U. S. Department of Agriculture.

to milking. A suitable supply of feed must be provided, and the family must be able to use all the milk or sell any surplus.

An inexperienced person should not attempt to buy a cow unaided. The farm adviser or some competent farmer should be called upon for advice and help. The cow selected should have a sound udder, free of lumps and hardened tissue. She should be an easy milker, and have teats of good size. The milk should be free of clots, flakes, or



A good cow is a much better investment than a poor one

strings. The cow should show no evidence of bad habits, such as kicking, self-sucking, or breaking thru fences, and she should be free from tuberculosis and abortion disease. Unless she is definitely known to be free from these two diseases, buy her only subject to test for them. There should be no trouble in finding tuberculosis-free herds from which she may be selected.

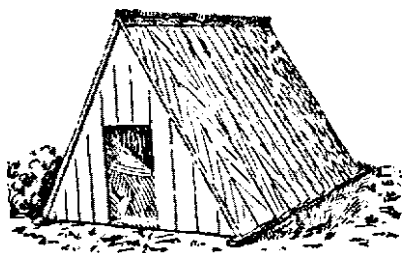
If any disease is suspected in the herd from which the cow has been purchased, the milk for family use should be boiled, or pasteurized by holding it at a temperature of 145° F. for 30 minutes. These precautions should be taken until the cow has been shown by proper tests to be free from these diseases.

Milk goats are sometimes used to produce the family milk supply, especially if the family is small. (For information on milk goats, see Farmers' Bul. 1753, U. S. Department of Agriculture.)

Meat supply. A considerable part of the family meat supply can be produced on the small farm by using cockerels and culled hens from the poultry flock and by raising pigs. On most small farms one or two pigs can be raised and fattened largely on surplus garden crops, table scraps, and dairy by-products, without a great deal of grain. But if it is necessary to feed pigs entirely on grain purchased at

retail prices, it probably would be more economical to buy a fat hog for butchering.

Thrifty pigs, which have been raised on clean ground and are free from parasites, should be bought, preferably in the spring at the age of 8 to 10 weeks. They may be kept and fed in a small lot, altho they will do best when given access to legume pasture, such as alfalfa or clover, or to other green forage. Almost any type of shelter which provides a dry floor, shade in summer, and protection from rain and snow in winter is suitable. If fed liberally, pigs should reach a weight



Built from new materials, an A-type hog house ample for sheltering one or two hogs, costs from \$8 to \$10

of 200 pounds at 6 to 8 months of age, and should produce dressed carcasses of about 150 pounds each.

Acreage and feed requirements. The acreage needed to produce the family food supply will depend of course upon the productivity of the land and whether the farm-grown feeds for the livestock are raised or purchased. The approximate quantities of feeds that will be needed and the acreage that will ordinarily be required to produce the feeds, are listed on page 20.

If all the feeds except the mill feeds and protein concentrates are grown on the farm, about 8 or 9 acres of average quality central Illinois farm land would be required. Mill feeds and concentrates must be purchased. The amount of protein concentrates needed for poultry and pigs may be reduced somewhat if skim milk or buttermilk is available for feed and if the pigs have access to alfalfa pasture. Surplus and by-products of the garden will also provide some feed.

Some land will of course be needed in addition to that required to produce feed for the livestock. Approximately 2 acres will be needed for vegetables, for fruit (if grown), and for lawn and build-ings. Thus if most of the feed is grown, a total area of about 10

**Feeds Needed for Poultry, Cow, and Two Pigs
And Acreage Required to Raise the Feeds**

Livestock	Corn	Wheat	Oats	Mill-feeds	Protein concentrates	Hay	Straw	Range or pasture
	<i>bu.</i>	<i>bu.</i>	<i>bu.</i>	<i>lbs.</i>	<i>lbs.</i>	<i>tons</i>	<i>tons</i>	<i>acres</i>
50 hens.....	27	12.5	24	500	500	...	...	...
35 pullets ^a	6	3	5	135	100	...	.5	.25
35 chicks ^b	2.5	1	2	55	40	...	...	...
1 cow.....	18	...	13	...	260	2	1	2-3
2 pigs ^c	23	...	3	...	65	...	.2	.25
Total feed.....	76.5	16.5	47	690	715	2	1.7	...
	<i>acres</i>	<i>acres</i>	<i>acres</i>			<i>acres</i>		
Land required ^d	2	1	1 $\frac{1}{4}$	...	...	1	...	2.5-3.5

^aFrom chicks to laying age.

^bFrom chicks to 2 pounds weight.

^cFrom 40-pound weights to 200-pound weights.

^dBased on average central Illinois land producing about 40 bushels of corn an acre. On poorer land the acreage necessary should be increased by one-half.

acres will be necessary. If less land is available, it may be desirable to purchase part of the grain or hay needed for feed.

Rotation and fertilization must be practiced in order to maintain the productivity of the soil.

Tools and equipment. Capital requirements for the buildings and equipment needed for the care of livestock on a small farm were discussed on pages 7 and 8. It is important that expenditures for such purposes be kept down to reasonable figures.

No discussion of the power supply for field work is included here, for as a rule on small farms where production is planned merely to supply food for the family, such work can be done most advantageously by hire. The horses or tractor, and the plows, disks, mowers, rakes, and other such machinery would probably not be used enough to justify the purchase of them.

In the care of the garden a few hand tools will of course be needed, such as a combined garden seed drill and wheel hoe, hand hoes, and rakes. Watering equipment for livestock and self-feeders for poultry should be provided. The latter can be made on the farm. Some equipment (extra boxes or bins, and scales) will be needed for mixing feeds if the feeds are mixed at home. For small flocks of poultry the purchase of ready-mixed feeds may be preferable to paying for the grinding and then mixing the feed at home.

COMMERCIAL PRODUCTION ON SMALL FARMS

Families living on small farms without an income from off-the-farm employment must of course raise a surplus of products over and above the amount needed for the family food supply. Other operators of small farms often prefer to produce some surplus for market. Gaining the entire family livelihood from a small farm of course requires intensive methods of production and careful and wise marketing.

Unless the particular conditions justify emphasis upon some specialty crop, the initial setup and choice of enterprises for commercial production will be much the same as that described in the foregoing section, for the family food supply is still a primary consideration. Beyond that point, some or all enterprises must be expanded in order to provide a cash income.

Vegetables and fruits for market. Facilities for marketing and the special demands of the available markets must be carefully considered before an attempt is made to grow vegetables or fruit for sale. In some locations and with some products a roadside market can be

developed to advantage; in other locations and with other products the attempt would be futile. In some places products may be sold to grocery stores. In locations adjacent to small towns and villages fresh vegetables frequently may be sold direct to consumers, particularly if such distribution can be combined with the regular retailing of dairy and poultry products.

Growing a few special products of high quality will probably bring better returns than an attempt to operate a general market garden.



A combined seed drill and wheel hoe is a useful tool in the small-farm garden, whether the garden is only for family use or is on a commercial scale

Among vegetables and small fruits, tomatoes, muskmelons, sweet corn, strawberries, and raspberries probably offer the best opportunities for developing a special trade in high-class products. Adapted varieties must be chosen for planting, and special attention must be given to cultural methods and to preparation of the product* for market in order that the customer may be pleased. Publications dealing with the culture and marketing of special garden products are listed on page 29.

In most parts of Illinois tree fruits are not well adapted to commercial production on small farms.

Poultry and eggs for market. The size of the flock to be maintained for commercial egg production will depend largely upon the extent to which the operator desires to make poultry raising a specialty enterprise. For a flock of 250 hens the feed required would be five times the amount listed in the table on page 20. Other figures given for the 50-hen flock discussed on pages 16 to 17 may be multiplied by

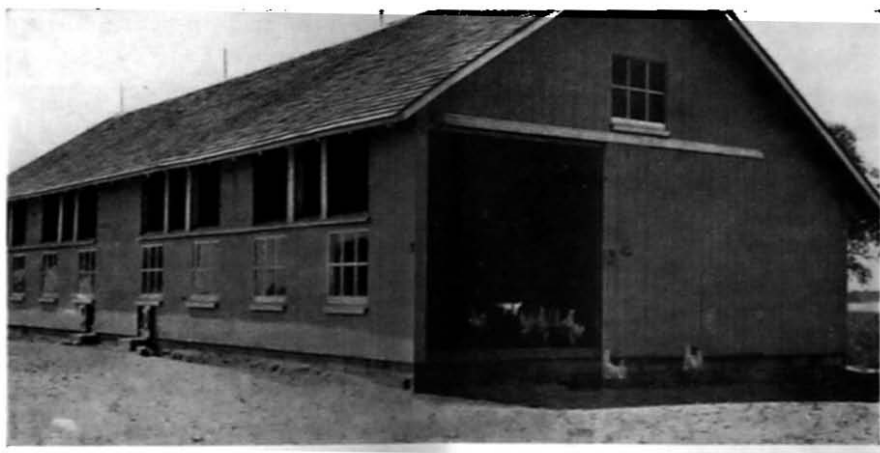


A brooder house on skids, that may be moved to clean ground, will help to keep down chick losses

five to adapt them to the requirements of a 250-hen flock. Approximately 1,000 square feet of floor space would need to be provided in the poultry house. And if, on the average, each hen lays 10 dozens of eggs a year, there would be about 1,800 dozens of eggs for sale yearly, or a little more than one case a week (the standard egg case holds 30 dozen eggs). Not all of these eggs, of course, will bring the top market price, for some will be either too large or too small and others will be dirty or have thin shells. A well-managed flock of 250 hens may, however, be expected to return a labor and management wage of about \$250 to the owner-operator.

If two-thirds of the laying flock consists of pullets, about 500 baby chicks will be needed each spring to provide the pullets for replacements. About 160 to 170 cockerels also would be raised from these chicks. The cockerels can usually be sold to best advantage as broilers at about $2\frac{1}{4}$ pounds live weight.

If the death loss in the laying flock is 35 hens a year, and if one-third the remainder are carried over into the second year, about 135 old hens will be culled and marketed or used for part of the family food supply. In a well-managed flock the culling of low-producing hens will be carried on over a considerable period so that the expense of keeping nonlaying hens may be avoided as much as possible.



Good housing for the laying flock is an important item in the successful production of poultry and eggs

Dairy products for sale. As a commercial enterprise on the small farm, dairying may be based upon the sale of whole milk for retail consumption or upon the sale of butterfat in the form of cream. The largest gross income can be secured by bottling and delivering the milk to consumers, but the market must be easily accessible, and considerable equipment and the expenditure of a great deal of time and effort on the part of the family are required. The simplest method of marketing whole milk is to sell it in cans to a distributor. Selling in bulk to hotels and restaurants or selling bottled milk to grocers are other possibilities. Any sanitary regulations governing the market to be supplied should be investigated.

When markets for whole milk are not readily accessible, or if there are sanitary regulations for whole-milk marketing that cannot profitably be met on the farm, the sale of cream affords an easy method of marketing dairy products, returning a smaller but a steady income. Many areas in Illinois are now served by truck routes hauling cream to the central markets.

If the dairy enterprise is based upon the sale of cream, a cream separator is essential. The skim milk can be fed to advantage to chickens, pigs or calves.

The number of cows which can be kept profitably will depend upon available market outlets, available equipment for caring for the cows and handling the milk, the skill and experience of the operator, the amount of time he and the family can give to the dairy enterprise, and the available feed supply. It may be necessary to purchase a considerable portion of the feed if several cows are kept. Only cows of fairly high production should be considered, for they will produce more milk for the amount of feed consumed than would low producers.

Raising hogs on commercial scale. The feed supply is the important consideration in determining the practical limits to the raising of hogs on a commercial scale on the small farm. Nearly 16 bushels



Not much space or equipment, but plentiful amounts of feed, are needed for raising hogs on a commercial scale

of corn per pig, in addition to other feeds, are required to keep the sow and to grow and fatten the pigs. The small farm is thus definitely limited in hog production unless feed is purchased. Corn that is purchased should be bought in quantities direct from the grower, if possible, rather than on a retail basis.

Not a great deal of time, space, and equipment are required for raising hogs. Sufficient space should, however, be available to provide legume pasture for the pigs. One acre of *good* alfalfa will provide pasture for as many as 20 pigs thru the summer and will in addition

produce some hay. Changing the pasture, or the portion of it grazed by the pigs, to fresh ground each year helps to control parasites. Individual portable houses provide suitable shelter.

In his plan of production, the hog producer must choose between an early market (August or September for spring pigs), or a later market (October to December). Production for the earlier market means early farrowing, with risk of heavier losses. It requires better equipment, but at farrowing time the special attention demanded comes into less conflict with other work. To strike as early a market as possible, the pigs must be pushed to make rapid gains. They are of course finished on old corn. Pigs for the later market may be farrowed later, pushed less rapidly, and may be finished on new corn.

Two litters can be produced each year, one in the spring and the other in the fall. Early farrowing, tho somewhat of a disadvantage from the standpoint of caring for the pigs in the spring, is an advantage in the fall. Fall pigs usually require more feed in relation to gains than do spring pigs, because of less favorable weather and less forage.

Specialty enterprises. One or more specialty enterprises on a small farm occasionally will be justified by available markets or particular conditions. Among such enterprises may be mentioned the production of watercress, forcing rhubarb, Witloof chicory, honey, squabs, and rabbits. Specialty enterprises generally require particular knowledge of production methods and an understanding of market outlets for the product. One should thoroly acquaint himself with these things before undertaking them.

Combinations of enterprises. Intensive production is essential if a small farm unit is to provide, in addition to the family's food supply, an income sufficient to defray operating expenses and leave a margin for cash living expenses. The combined enterprises that are chosen should utilize as fully as possible the available labor and equipment.

The manner in which the land should be utilized will depend upon the farm area, its productiveness, and the choice and size of enterprises. The various enterprises compete to some extent for the time of the operator and also for space. Livestock compete for the available feed supply, and their development to the point where they will justify the time expended will necessitate the purchase of some feed.

The development of a few enterprises on a commercial scale may be more profitable for many operators than the development of too many lines. The choice in each case will depend upon market outlets,

available equipment, the adaptability of the land, and the ability and experience of the operator.

Crops, both in field and in garden, should be selected and rotated to maintain fertility, to reduce erosion, and to control weeds and insects. For these purposes, alfalfa for hay and sweet clover for pasture are deep-rooted legumes that are valuable.

Equipment required for commercial production. The kinds and amounts of buildings, fences, tools, and livestock necessary for commercial production on a small farm depend much upon the kinds of enterprises that are carried on and the extent or intensity to which they are pushed. Adequate housing and equipment are necessary, of course, for poultry and dairy enterprises, but the need for caution and the exercise of good judgment to avoid overinvestment is just as urgent when production is on a commercial scale as when it is confined to furnishing only the family food supply (page 21). Care must be given to the arrangement of the buildings and lots to avoid waste of time in doing chores, to conserve land for productive uses, and to provide for sanitation and the comfort of animals.

The small farm is poorly adapted to make economical use of power, and the source of power, therefore, is an important problem on such a farm. Only seldom is the capital investment and expense of keeping even a small tractor justifiable. On very small farms the heavier work such as the plowing and preparation of the soil can usually be done by hire more cheaply than the power and machinery can be maintained (see page 21). If machinery is purchased, the investment should be kept low. Used machinery which will serve the purpose may sometimes be bought cheaply.

As a source of power one horse is inadequate if there is much heavy work (plowing, disking, etc.) to be done. If a team can be hired when it is needed, the cost will be much less than the expense of keeping horses thru the year. Some small-farm operators keep one horse and hire another when it is needed. Each horse should perform the work on 20 to 25 acres of cropland.

The feed requirement of horses varies considerably, according to the amount of work done. An average farm horse working from 60 to 80 full days per year consumes annually 2,500 to 3,000 pounds of grain (corn and oats), a ton of hay, a ton of other roughage, and an acre of pasture. The amount of grain fed may be reduced considerably when less work is done, but feed requirements per horse are likely to take the entire production of from 2½ to 4 acres, depending upon yields.

Marketing facilities. Good marketing facilities are very important when the enterprises on the small farm are on a commercial scale. The marketing facilities vary according to the location and the kind of product to be sold. The degree to which the market is able to absorb the supply, the extent of competition for products raised, the distance from the market as it affects the cost and frequency of marketing and the cost and availability of transportation facilities, must all be considered. The farmer should know also the demands of the market with respect to quality of product, time and method of marketing, and packaging. It usually pays well to market only products of high quality.

SOURCES OF FARMING INFORMATION

No attempt has been made in the foregoing discussion to describe in detail how work on a farm is done. Information of this kind can be obtained from the bulletins and circulars of the AGRICULTURAL EXPERIMENT STATION and EXTENSION SERVICE at the UNIVERSITY of ILLINOIS, URBANA, and the bulletins of the U. S. DEPARTMENT OF AGRICULTURE, WASHINGTON, D. C.

Single copies of a limited number of the Illinois publications will be sent free of charge on request. Only titles for which there is immediate need should be ordered at one time.

Requests for U. S. Department of Agriculture (USDA) publications should be sent direct to Washington, D. C.

The Family Food Supply

A plan for the farm family food supply. *Chart.*

The year's food supply and the home garden. *Chart.*

Some ways to use foods commonly raised on the farm (milk, apples, cabbage, tomatoes, pork, eggs). *Mimeo.*

Home canning of foods for family use. *C-394*

Some ways of cooking and using whole and cracked wheat. *C-382*

Ways of using corn as a low-cost food. *C-399*

Ways of using soybeans as food. *Mimeo.*

Garden and Orchard

The long-row farm garden. *C-325*

Saving garden crops from insect injury. *C-437*

Diseases and insects of garden vegetables. *FB-1371 (USDA)*

Growing and marketing muskmelons. *C-405*

Onion culture. *C-410*

Growing tomatoes in Illinois: Problems in producing for market and canning. *C-451*

Growing potatoes in Illinois. *B-344*

Sweet potato growing. *FB-999 (USDA)*

Growing sweet corn for the cannery. *FB-1634 (USDA)*

Asparagus culture. *FB-1646 (USDA)*

Pop corn. *FB-1679 (USDA)*

Strawberry culture in Illinois. *C-453*

Bramble fruits. *C-427*

Directions for spraying fruits in Illinois. *C-447*

Practical sanitation for apple orchards. *C-443*

Pruning apple trees in Illinois. *C-349*

Soils

Test your soil for acidity. *C-346*

Testing soils for available phosphorus. *C-421*

The Illinois potash test. *Mimeo.*

Limestone the key to soil building and higher yields. *C-375*

County soil reports (available for 74 counties as complete reports or as unbound soil maps).

Field Crops and Feeds

- Growing alfalfa in Illinois. *B-349*
- Sweet clover in Illinois. *B-394*
- Soybean production in Illinois. *B-310*
- Seed treatments for farm crops. *C-444*
- Late-sown emergency feed crops for Illinois. *C-423*

Care and Feeding of Livestock

- Livestock for small farms. *FB-1735 (USDA)*
- Utilizing the soybean crop in livestock feeding. *C-369*
- The feeding of mineral supplements to livestock. *C-411*

Poultry

- Raising chicks at a profit. *C-329*
- Keeping the farm flock healthy. *C-374*
- Feeding for egg production. *C-275*
- Incubation and brooding of chicks. *FB-1538 (USDA)*
- Culling for eggs and market. *FB-1112 (USDA)*
- Marketing poultry. *FB-1377 (USDA)*
- Marketing eggs. *FB-1378 (USDA)*
- Diseases and parasites of poultry. *FB-1652 (USDA)*
- Lice and mites on poultry. *FB-801 (USDA)*
- Fowl pox. *C-430*
- Pullorum disease of chicks. *C-432*
- Capons and caponizing. *FB-849 (USDA)*

Dairy Cattle

- Selecting dairy cattle. *C-422*
- Feeding the dairy herd. *C-440*
- Silage crops for dairy cattle. *C-463*
- Dairy farming for beginners. *FB-1610 (USDA)*
- Dairy cattle breeds. *FB-1443 (USDA)*
- Care and management of dairy cows. *FB-1470 (USDA)*

Hogs

- Feeding hogs on Illinois farms. *C-395*
- Cheaper and more profitable pork thru swine sanitation. *C-306*

Horses

- The farm horse—Its feeding, care, and breeding. *C-424*

Dairy Products

- Producing high quality milk. *C-341*
- Care of milk utensils on the farm. *FB-1675 (USDA)*
- Making butter on the farm. *FB-876 (USDA)*
- Making and using cottage cheese in the home. *FB-1451 (USDA)*

Buildings and Equipment

- Poultry farm equipment. *C-333*
- A colony brooder house that starts chicks right. *C-291*
- Directions for building a straw-loft hen house. *C-412*
- Poultry house construction. *FB-574 (USDA)*
- Movable hog houses. *C-320*
- Building and remodeling dairy barns. *C-478*

Other

*Illinois home account book.

*Illinois farm account book.

Farm accounts that count. C-362

Selecting and financing a farm. (*Circ. 14, Farm Credit Administration, St. Louis, Mo.*)

*Distribution limited—write for particulars.

THE OPPORTUNITY to reduce the cost of rent and food, or to have a more abundant food supply, is one of the strongest attractions of the small farm to an urban dweller. Slack-time employment is another consideration.

- Those to whom the small-farm idea makes a strong appeal should not, however, fail to consider the limitations of such a venture, as well as its advantages.

- This circular indicates what some of the limitations of a small farm are; and for those who decide that the advantages outweigh the disadvantages, it explains the problems met in successfully organizing and managing such a farm.

- No attempt is made to describe in detail how farm work is done—that is left to other publications.