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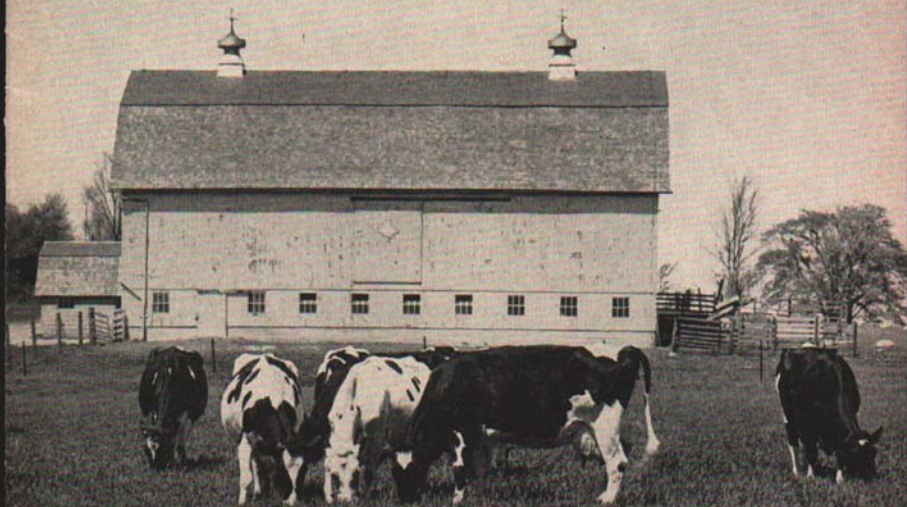
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A Start in DAIRY FARMING in Michigan

By Earl Weaver, Donald L. Murray,
and W. W. Snyder



MICHIGAN STATE COLLEGE
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A Start in Dairy Farming in Michigan

By EARL WEAVER,¹ DONALD L. MURRAY,²
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Shall I go into dairy farming? Hundreds of times each year this question is asked of staff members of the Dairy Department of Michigan State College. To give the correct answer is difficult. The individual circumstances confronting each man who asks the question, and the conditions under which he would have to operate, are extremely variable.

However, this fact has been observed. Men who ask the question can usually be placed in one of four groups—depending on background, experience, age, available finances or family circumstances.

MEN WHO CONSIDER THE QUESTION

Group 1 — Young or middle-aged men with experience

The men in this group may already be employed on family farms, or even engaged as hired men. They are usually confronted with the problem of capital or labor, or both. With their own experience, aided by the counsel of older persons, they are usually able to exercise sound judgment whether a start in dairying fits their circumstances. Those who make the start are generally successful.

Group 2 — Young men with little or no experience

Some young men with little farm background—and usually with limited finances—are attracted to the possibilities they can see in dairy farming. When such young men are alert to do things right, and are willing to accept the guidance of experienced dairy farmers, they often succeed in creditable fashion.

Group 3 — Middle-aged city men who were reared on a farm

This includes men who were reared on farms, became established in some type of factory or other city employment, have growing children, and are of only moderate means. They often develop a

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yearning to leave their city work and embark on dairy farming. Such men generally know the problems which will confront them in transplanting a city family onto a farm. They also have quite valid judgment of the problems and opportunities in dairy farming.

While a great many contemplate such a move, and continually talk about its attractiveness to them, it is probably fortunate only a few ever actually take the step. Most of those who do, enjoy reasonable success and contentment in their dairy work.

Group 4 — Middle-aged or older men with financial resources

These are the men from the city who have considerable financial resources. They may already possess farm property, or have a farm under consideration for purchase. Of course, they expect to operate largely or entirely with hired help, or with a tenant or partnership arrangement. The men of this group who proceed carefully, and use the same sound judgment in their dairy activities as made them succeed in their city businesses or professions, can usually be expected to do reasonably well.

Those who "plunge" into dairying beyond reason—with enormous expenditures for buildings, landscaping, equipment, and high-priced cattle—can likely enjoy some pride in a "show place" but they seldom enjoy any substantial net incomes from their operations.

DAIRY FARMING IS A BUSINESS

Dairy farming is a highly specialized business requiring many skills. The dairyman must have some understanding of breeding, feeding, management, and disease control of dairy cattle. He must have some knowledge of soils and soil management, crops and crop rotations, pasture and pasture management, seeds and proper seeding. Also he must know how to operate and maintain expensive machinery and equipment. In short, the dairyman must know two things. First, how to provide high-quality pasture, hay, silage and grains for his cattle. Second, how to carry out the entire farming operation aimed at economical milk production.

The primary purpose of the dairy herd should be to provide acceptable returns for the feed, labor and investment necessary. This is done (1) by proper management of the entire farming operation, and (2) by careful marketing of milk or other dairy products so that the highest possible returns may be realized.

It should be apparent that dairy farming becomes an involved business. The most successful dairyman is a specialist in several fields of agriculture. In addition, he must have the ability to conduct a profitable business.

MICHIGAN'S DAIRY HERDS

A man starting a dairy herd in Michigan can well direct some attention to the status of the enterprise in the state.

According to the latest census, Michigan has 155,589 farms. There are milk cows on about two-thirds of these farms. About one-third of those farms having cows keep only 4 cows or less, largely as family cows. These farms do not play important parts in the dairy enterprise.

About a second one-third of the Michigan farms that have cows maintain herds of only 4 to 9 cows. These play some part in our dairy business. In some sections of the state, herds of this size produce most of the milk and cream that is marketed. The successful operation of such a herd means a great deal to the owner, and to the dairy enterprise in the state.

But major problems in dairy herd operations arise with the herds that contain 10 cows or more. Again, this is about one-third of the Michigan farms that have cows. While this is only a third of the farms, these have 60 percent of our milk cows and produce 65 percent of the state's income from the sale of milk and cream. In addition, these larger herds receive a relatively higher portion of the returns from the sales of cattle for dairy and breeding purposes. The success in managing these larger herds determines to quite an extent the benefits Michigan enjoys from her dairy enterprise.

Michigan farmers seldom specialize entirely in dairy

On most Michigan farms even with the larger number of cows, the dairy enterprise, though of major importance, is only one phase of the general farming business. Dairying in this state is not characterized by large herds. Only 5 percent of the milking herds in Michigan contain as many as 20 cows or more. On a few of our farms, the dairy enterprise is so developed that it affords upwards of 90 percent of the total income. In most cases, however, the portion of the income that is received from dairy sales runs from 50 to 70 percent of the total farm income.

Among a few persons, some recent interest in specialized, commercial dairying has developed in Michigan. It is their thought that near our better milk markets, large commercial herds on limited size farms or even small acreages can be profitable. This has proved to be true in certain other sections of the country.

In such a dairy farm organization only a few, if any, of the young stock would be grown out; cow replacement would be by purchase. Little, if any, feed would be produced on the small farm. Even pasture might be omitted; probably silage crops would be grown. Though this extreme specialization in dairying has never developed in Michigan, there are reasons to believe it has some possibilities.

THE PLACE OF DAIRYING IN MICHIGAN

Dairying is by far Michigan's leading farm enterprise. Thirty percent of the farms in the state are classed as "dairy." By census definition, a "dairy farm" is one on which 50 percent or more of the total farm income is from dairy sales. "Cash grain" farms constitute the second most numerous type of farm in the state. There are about a fourth as many farms classed as "livestock" as there are dairy farms.

Another guide to the magnitude of dairying in Michigan's agriculture is the return from the enterprise. Through the sales of milk and cream—plus dairy animals sold for beef—dairying accounts for 36 percent of the state's total farm income. The dairy income is greater than that from all the cash grains and hay combined. It is nearly twice that from other livestock and livestock products, and more than twice that from horticultural products.

FACTS TO CONSIDER BEFORE STARTING

There are several important facts a man should consider before he starts in a dairy enterprise. Some of these are:

1. *The capital investment is high.*
2. *Income is steady and dependable, but not spectacular.*
3. *The labor requirement is considerable. And it must be capable and regular.*
4. *The owner-operator's family must be adaptable to dairy farm life.*
5. *The non-resident owner must have a competent manager, tenant, or operator.*

6. *A reasonably fertile and productive farm is desirable.*
7. *The available market for milk greatly affects income.*
8. *Other unforeseen factors can modify success in the enterprise.*

ADVANTAGES IN DAIRYING

Farmers who are already engaged in dairying, or men who plan to start in this enterprise, do so in the belief it has some advantages under their circumstances. The more important advantages are:

1. *The total income year after year is comparatively high.*
2. *The income is steady, and dependable.*
3. *Available labor can be utilized throughout the year.*

Comparatively high income

It is generally realized that over a period of years the dairy business in Michigan affords favorable financial returns. There are some important reasons for this. In the first place, dairy farming is seldom over-done to the point of huge surpluses that continue to mount for prolonged periods. The enterprise has certain disadvantages that keep some men out of it. Other men shun dairy farming because of a personal distaste for it. All of this tends to afford the enterprise some natural protection against over-production. It is also a distinct benefit to those farmers who are avowed dairymen.

A second reason dairy farming in Michigan usually affords quite favorable returns is that dairy cows are notably efficient in converting coarse, farm feeds into human food.

Steady income

Aside from the total amount of income from dairying, the regularity of the income—a milk check every two weeks or every month—has an appeal for many farmers. This is often a special advantage for the man just starting in the enterprise.

Labor used throughout the year

The possibility in dairy farming for utilizing labor throughout the year is a reason some persons are attracted. Dairy chores take less time in the summer than in winter. The herd on pasture can be handled more quickly than is possible in winter when the barn feeding, cleaning, and care of young stock have to be done each day.



Fig. 1. A father-son partnership can give the younger man a promising start in dairying.

Michigan dairy farmers usually have other enterprises in addition to the dairy herd. Many other enterprises have highest labor demands in summer. Hence, dairying along with the other enterprises can give effective use of labor.

Since dairying is an intensive type of farming and does not demand large acreages, it is often adapted to the family-size farm. In many circumstances an older son, who may have a family of his own, finds greatest advantage in a partnership arrangement so he may remain on the farm with the father. In such cases if the volume of business is large enough, both the father and son and members of their families may thus have full employment and good incomes.

SOME SERIOUS DISADVANTAGES

Any man who contemplates a start in dairy farming must be aware of the two disadvantages that are usually emphasized; namely, *the high capital investment* necessary and *the exacting labor demands*. In some instances a man starting in dairying has sufficient capital available. In most instances satisfactory agreements can be executed wherein a man who lacks the necessary finances can embark on a

contract or partnership with an owner. This will spare him the burden of excessive indebtedness, but permit him gradually to acquire a financial interest in the herd.

Partnership can reduce high capital investment

Often a young man with limited finances finds it possible to start by taking over his father's farm and herd. This can prove an excellent arrangement. But in every case a signed agreement or lease should be executed, spelling out the responsibility each party is to assume and the benefits he is to enjoy.

Sad instances can develop when a father-son arrangement is left in an indefinite state. No son should be expected to devote his time and interests—and those of his own family—in an enterprise unless assured he shall eventually enjoy major benefits of such efforts. A legal document is especially urgent if there are others who would be involved as heirs of an estate.

It often develops that a young man furnishes a part or all the cattle under a partnership arrangement with a farm-owner. This can provide an excellent opportunity for both parties. At the same time it can develop into an intolerable situation. The young man is primarily interested in the income he can obtain; the farm-owner of means may not be so urgently concerned with the income.

The latter's chief objective may be to have a diversion from his city business, maybe a country home for his family, or a show place to impress his friends. If the farm is expected to support these latter objectives the income will likely be greatly impaired. The two partners with contradictory objectives thus are likely to find the arrangement unsatisfactory. Serious disagreement can be averted if the problems can be foreseen and thus avoided by the proper type of agreement.

Labor demands are exacting

Some men find the dairy enterprise attractive because it can use a large amount of labor that may be available and affords the continuous, steady employment that may be desired. However, most persons contemplating a start with a dairy herd can well deliberate on the question whether the labor demands can be met. To many persons, the most objectionable feature of dairy work lies in the fact that dairy chores must be performed twice each day throughout the year, and thus become too monotonous. There is little likelihood that this objectionable feature of dairying can ever be overcome.

Many other men, from their experiences, feel the most objectionable feature of dairy work lies in the fact that the dairy chores often have to be done early in the morning and late at night, in addition to a full day's work in the field or on some other activity. This is the drudgery in dairy work. It can be greatly reduced by proper farm and herd management.

Men who are considering a start with a dairy herd should realize the amount of labor required nowadays is far less than was the case as recently as 10 or 12 years ago. Formerly, an average milk cow took each year about 150 hours of man labor for her care. That was in dairy chores only; it did not include the work in producing feeds.

Today it can be expected that 100 hours of labor will suffice for a cow each year. Of course, this presupposes there are at least 16 to 18 cows in the herd, that attention has been given to proper chore routes in performing the work, that "managed" milking is done, that the equipment is reasonably adequate, and the man is reasonably adept in dairy work.

In some Michigan herds the number of hours required each year to handle a cow has been reduced to 60 or 70. Unfortunately in other herds the number of hours spent per cow is still far too high.

THE OUTLOOK FOR DAIRYING

A man contemplating a possible start with a dairy herd can expect one thing in his favor. In the years ahead dairying will likely continue to rank quite favorably in comparison with other farm enterprises. The traditional handicaps in the dairy business—capital and labor demands—will continue to plague many men, and thus exclude them from the business. This is a rather effective safeguard against over-production, which in turn helps assure a substantial demand for dairy products.

It is in order to recognize another factor that has come into the dairy picture since the start of World War II. For two reasons people are consuming far less butterfat than previously. Substitute products, using vegetable fats, are produced more cheaply than dairy products and can be purchased at attractive prices. And there is a noticeable decline in the amount of fats and oils of all kinds that consumers are using.

Recognizing that these trends will likely never be interrupted, the dairy industry is at present modifying some of the policies that have always been followed. Less emphasis than formerly is being placed on the commercial and nutritive values of milk fat. There is a definite trend to evaluate milk on its total solids content, instead of fat content alone. In sales of dairy products to consumers more emphasis than formerly is being placed on the superior nutritive values and economy in the proteins, minerals and vitamins.

The rapid increase in population in this country is further assurance of a continuing demand for dairy foods—as well as most all agricultural products. If the usage of dairy foods per person continues even at the present level in the years ahead, the increase in population will necessitate that the volume of milk produced must be expanded by 3 percent each year. Heretofore dairy production has never increased this much per year over any extended period. The prospects in demands for dairy foods are promising.

ATTRIBUTES FOR SUCCESS IN DAIRY HERD OPERATION

There are certain qualifications in a man which encourage the belief he can operate a dairy herd successfully. They are: experience, energy, and ability to direct others in dairy work.

Experience

The man who has had some successful previous experience in operating a dairy herd can well be expected to succeed if he starts again. Most important of all, such a man is able to anticipate the many problems that may confront him. With good judgment, he may prevent some of the problems or at least handle them more expertly.

It is important here to emphasize that the man who is inexperienced with dairying may not be successful in this enterprise. His chances for success are no better than an inexperienced man who had assumed the operation of a manufacturing plant, a big store, or some other large business.

Energy

A successful operator of a dairy herd has to be energetic and industrious. Dairying at best involves an enormous amount of exacting labor. Furthermore, a herd demands careful observations,

study and planning. A man who is indifferent, or who lacks alertness, will omit too many important duties and decisions. Such neglect shows up quickly in a dairy herd, where highly sensitive and even temperamental animals are involved.

Directing others

Despite the fact most men are confident of their abilities to direct other workers, such is usually not the case. In a smaller dairy herd, the owner or partner may perform most of the dairy chores, with some assistance from other members of the family or from a hired man. But in the rush of farm work most of the chores may have to be handled by others. They must be carefully guided and instructed ahead of time so serious mistakes can be avoided.

In the largest herds, the herd manager—whether he is the owner, partner or a hired employee—will likely find it advisable to organize the operation in such a way the actual chores are performed by other employees. This is a big challenge in handling help. Too often the owner or manager of a herd assumes the philosophy that it is easier to perform duties himself than to expect others to get them done properly. If this philosophy is carried too far it encroaches on the time the manager should devote to his own special duties.

In addition to experience, there is another qualification necessary in order for a manager to handle help satisfactorily. He must be tolerant of an employee's justifiable viewpoint. Men today—even the children in a family—cannot be expected to work as long hours as was considered customary a few years ago. They can also expect better working and living conditions than were tolerated in years past.

After deciding to start in the dairy farming business there are at least six questions as related to the dairy herd that must be answered. These questions are:

1. *Which breed should be kept?*
2. *Should purebreds or grades be used?*
3. *How large should the herd be?*
4. *Is it better to start with heifers or cows?*
5. *Where can dairy females be purchased?*
6. *What warranties should a buyer expect?*

WHICH BREED SHOULD BE KEPT?

Often the situation is such that there is no question which breed of cattle will be kept. Maybe a herd is already established on the farm under consideration, or one of the parties to a partnership already has a herd that is to be used. If such herds contain good, productive, profitable cows a change of breeds is questionable. The quality of the animals in a herd is far more important than their breed.

Some factors to consider when selecting a breed are (1) the breed most common in the community, and (2) personal preference.

The breed most common in the community

The dairyman whose breed is common in his community enjoys advantages he could otherwise miss. He can be associated with his neighbors in the herd breeding program, in the local association work, in sales, and in building the community reputation.

Also a predominant breed has probably gained its status through its adaptation to the local market for milk or dairy products. With this breed the dairyman's chances of success are much greater than if he becomes an individualist engaged in his isolated activities. It is true that in some communities there is no predominant breed. Here, the decision has to be based on other factors.

Personal preference

Personal preference for a given breed will naturally receive attention. Such preference can be a useful guide if based upon experience, sound judgment, and valid appraisal of a breed's advantages and limitations. It is true that a dairyman might do a better job with the breed of cattle he likes. But personal preference is often too superficial to justify a final decision on as important a matter as a dairyman's breed of cattle. Sometimes the preference is based only on scant impressions or bias.

PUREBREDS OR GRADES?

Observations over a period of several years lead to one conclusion. In most instances a beginner in dairy farming had better start with grade females rather than purebreds. This is especially true of the man with limited capital and experience.

Grades have definite advantages

There are three important reasons for this. Grade females are less costly by 25 or 50 percent than purebreds of similar producing ability. Then there is considerable risk with dairy cows from various diseases and ailments. The beginner who lacks experience is more likely to encounter serious difficulties here. If he loses a grade cow by death, or has to sell one at beef prices, his financial sacrifice is less than with a more costly purebred. And the third reason lies in the fact a purebred requires considerable attention to breeding dates, records of identification, registration, and production testing. A beginner with no experience in handling these matters may make costly errors.

Advantages of purebreds

On the other hand, a herd of purebred dairy cattle has some definite advantages over grades. The average purebred cow will produce at least 10 percent more milk and fat than the average grade. When a purebred herd becomes established, and achieves some note for the quality of its cattle, the sales of breeding stock—both males and females—can afford a source of substantial income not possible with grade cattle.

In addition to these financial advantages in a purebred herd, there is an additional benefit which can be enjoyed by the owner and his family. This is the pride in their good purebred cattle. Thus the herd is managed to better advantage. This stimulates a closer interest in the enterprise by all the family. The sons display more concern for the progress of the herd; they see the possibilities in dairying; they are less likely to desert the farm to move into city employment.

Changing from grades to purebreds

Many—but not all—capable dairymen can well aspire to become purebred breeders. In most cases it is better to make the change gradually from grades to purebreds. A few good purebreds, either heifers or cows, can be added to the herd of grades. With success in getting heifer calves from the purebreds these can eventually replace the grades. However, a dairyman in his enthusiasm to have only purebreds may move too fast. It is not advisable to cull out an excellent grade cow that is highly profitable just to replace her with an ordinary purebred.



Fig. 2. The interest and pride of the entire family in good purebred cattle is an advantage of dairy farming.

There is no valid reason for owning a herd of purebreds rather than grades unless the owner is qualified and determined to take full advantage of the benefits the purebreds can provide.

The future for purebreds

The future for the purebred business is reassuring. Only 6 percent of the 800,000 head of dairy cattle in Michigan are purebreds; this is about 48,000 head. Of the remaining 752,000 head, about 80 to 85 percent are grades possessing definite characteristics of one of the dairy breeds. We still have about 75,000 head classified as dairy cattle, but of unknown ancestry and commonly called scrubs.

Many of the grades are excellent and profitable producers. For years these good grades will continue to carry a major share in milk production. But it must be realized that such merit as these good grades possess is due to the superior inheritance they obtain from purebred ancestry. That superior inheritance for creditable milking ability is established largely through good purebred herds.

Artificial insemination is exerting an increasing influence for good. It is disseminating choicest inheritance into dairy herds—both grades and purebreds—throughout the country. This entire program depends upon good bulls. Breeders of purebred dairy cattle have an obligation and opportunity to supply these bulls.

There is an urgent need and enormous opportunity to expand the purebred dairy cattle enterprise with sound, progressive methods.

HOW LARGE SHOULD THE HERD BE?

The man who has decided to go into dairying is often confronted with the question of size of herd. The desirable size will depend largely on four factors as follows:

1. Finances available
2. Supply of feed
3. Barn space
4. Available labor

More profits from larger herds

That larger herds are generally most profitable is proved by research studies as well as by the experience of dairymen. Table 1 shows that in larger herds the milk yields per cow are higher and the costs for labor, building use, and equipment are lower. Most important of all the labor return per hour is considerably higher.

TABLE 1—The larger dairy herds are most profitable*

	Cows per herd				
	Less than 12	12 to 17	18 to 23	24 to 29	30 and over
Number of herds.....	119	177	93	36	25
Cows per herd.....	9.6	14.8	20.3	26.8	36.3
Yield of 4% milk per cow (lb.).....	7,763	7,559	7,819	8,274	8,282
Hours labor per cow per year.....	134	118	117	111	102
Hours labor per cwt. milk.....	1.7	1.6	1.5	1.3	1.2
Labor charge per hour.....	\$0.84	\$0.88	\$0.86	\$0.91	\$0.94
Costs per cow:					
Labor.....	\$112	\$104	\$102	\$101	\$ 96
Building use.....	12	11	8	10	9
Equipment.....	8	7	6	6	6
Total of above costs.....	\$132	\$122	\$116	\$117	\$111
Labor, buildings and equipment cost per cwt.....	\$1.70	\$1.61	\$1.48	\$1.41	\$1.34
Return per hour labor.....	.91	1.01	1.11	1.18	1.21

*From a study made on dairy herds in southeastern Michigan, 1945-49, by the Michigan Agricultural Experiment Station. (See Special Bulletin 373, *Dairying for Profit in Southeastern Michigan*.) While the dollar values have changed somewhat since that period, the relationship of costs and returns expressed by the table remains valid.

The dairyman with fewer than 12 cows is confronted by some serious problems under present costs. It is realized a great number of Michigan herds are small. The owners of these smaller herds have to be content with a lower return per hour for the labor which they and the family members expend on the cows.

In general, a Michigan dairyman who expects reasonable success should aim to have at least 15 or 16 cows in his herd. Up to 20 or more cows can be a more profitable unit. The additional cows do not increase the required labor as much as commonly believed. This is especially true in barns with some of the labor-saving devices that are rapidly becoming common.

Finances available

With limited finances, a beginner in dairying may not be able to acquire at first all the cows he would eventually desire. However, it should be recognized that an investment in good cows, so as to give a profitable unit, is generally to be considered about the soundest investment dairy farmers can make. Unless making interest payments would constitute a serious burden, a beginner could well consider a loan to purchase the desired number of cows.

Feed supply

In most cases, Michigan dairy farmers have succeeded best when they have been able to grow most of the feeds for their herds. This has been especially true in respect to the roughages. Generally, too, the dairyman who has grown his own grain has enjoyed benefits. It must be realized, however, that circumstances often justify a herd of a size greater than the farm can entirely support with feed. Here the purchase of feeds is justified. A dairyman who has available the labor and equipment sufficient to handle a herd of 25 or 30 cows should not limit his herd to 15 or 20 cows merely because his supplies of farm-grown grain feeds may be limited.

Taking into consideration the acreage of his various feed crops and the likely yields, a dairyman can calculate quite closely his total supply of feeds that will be available. This feed may go entirely to the dairy herd or partly to some other livestock; often an excess of some feed can go for cash sales at a decided advantage. But the dairy herd must have sufficient quantities.

Table 2 gives the approximate feed needs of dairy cattle for a year's feeding. The amounts of roughages will vary with the different

size breeds; and the quality of the roughage will modify to some extent the amounts of concentrates needed.

TABLE 2—Amounts of feeds needed per head per year by dairy cattle

	Concentrates			Roughage			
	Corn (Ground ear)	Oats	High Protein	Total	Hay	Silage	Pasture
	bushels	bushels	pounds	tons	tons	tons	acres
Cow yielding:							
7,500 lb. 4 percent milk.....	12	20	50	0.75	2	2.5	1.5
10,000 lb. 4 percent milk.....	20	36	200	1.25	2	2.5	1.5
12,500 lb. 4 percent milk.....	28	50	400	2.00	2	2.5	1.5
15,000 lb. 4 percent milk.....	32	68	600	2.50	2	2.5	1.5
Heifer—over 1 year old.....	3	6	...	0.20	1	1.5	0.5
Heifer—under 1 year old.....	7	14	50	0.50	0.5	0.8	0.1
Bull—2 years old or over.....	10	22	100	0.75	3	1.5	0.5

In Table 2 no effort is made to carry columns for all the grain a farm might produce. In general there is a wide range of possibilities for substituting other grains for either corn or oats. The total amounts of concentrates proposed, for cows of varying levels of production, are somewhat lower than amounts actually known to have been used by many dairymen in recent years.

Especially when milk prices are favorable and a dairyman has his own supply of grain, he is tempted to over-feed on concentrates. This curtails roughage consumption; it is not believed to be a profitable practice under most situations. The one and one-half acre of pasture per cow is entirely adequate in most seasons on those farms of reasonably good fertility. One acre per cow often is sufficient. An acre of alfalfa-brome or of sudan or rye can easily yield 175 to 200 cow-days of pasture.

The needs of a herd for bedding are not indicated in the table, but these are the approximate amounts. A cow in a stanchion barn needs about a ton of bedding per year. Most of this will be used during the winter season of 6 or 7 months. If housed in a pen barn, each cow will require 1½ tons of bedding. A bull in a pen needs 2 tons, a yearling heifer ¾ ton and a younger heifer ½ ton.

Barn space

Usually the number of stanchions in the barn will determine the size of herd feasible. If a barn is over-crowded during the winter—with a cow here and there in horse stalls, corners, pens or sheds—the labor to handle the herd is excessive.

To a great many dairymen today the idea of a pen-type barn, with separate milking room, has an appeal as a plan to enlarge barn space at the lowest cost. This type of housing is being quite widely accepted.

Labor available

In most cases, the amount of labor available has more effect than any other factor in determining the size of a dairy herd. It is an important item. However, too often dairymen in the desire to avoid what they believe may be an excessive labor demand curtail the number of cows to an inefficient, unprofitable size. In many such cases it would be preferable for farmers to depend upon some other enterprise rather than a herd of cows that is too small.



Fig. 3. These cows get their hay at the self-feeding manger on the south side of the hay barn. This reduces the labor.

IS IT BETTER TO START WITH HEIFERS OR WITH COWS?

In some cases a beginner in dairying has a herd already available, or is able to procure another herd intact. This is usually a fortunate situation if the herd is of acceptable merit. In many cases, however, a new herd has to be built up. The question arises whether heifers or cows should be purchased. Even the man starting with

a herd already established often faces the need to add, as soon as possible, extra females to enlarge the herd; or to replace some of the least desirable cows. He faces the same question.

Advice to a beginner in this situation cannot be too definite. The proper decision rests largely on the circumstances. If the income from the milk seems necessary from the very start, the acquisition of cows already in milk or of springers will accomplish this need.

Fresh cows and springers usually cost more

This caution is offered, however. Fresh cows and springers are often priced at relatively high figures. At most all seasons of the year they are in great demand. An established dairy farmer with cows to sell for dairy purposes usually offers his fresh cows or springers because he knows they bring the premium; cows look most promising then. Insofar as the sale of dairy females at this stage offers the seller a decided advantage, it can be reasoned with considerable logic that from the buyer's standpoint it is a questionable stage to make the purchase. Too often the buyer has to pay an exorbitant premium.

The beginner who selects his cows from among those that are pretty well along in lactation—say 6 to 8 months—will get most value in producing ability for each dollar he spends. With such a cow there must be the warranty that she is in calf; then she will be fresh in a few months to afford the needed income. At this stage a buyer can judge with more accuracy than at any other time a cow's likely producing ability. When a cow is midway along in a lactation, the examination of her udder for soundness can be more dependable than at any other stage.

Young cows are more valuable

With few exceptions the young cows—under 5 years old—are far more valuable than older cows. After a cow passes the age of 5 years her likely remaining years of productivity decline rapidly; depreciation on her can run quite high. It is true that a purebred breeder can sometimes purchase at a relatively low figure an older cow of desired breeding and type, and enjoy some benefit through a good calf or two she may produce when beyond her productive life in milk yields.

Springing 2-year-old heifers are especially attractive to buyers. These heifers are usually in good flesh and the udders are quite

promising. Often when a cow past 3 or 4 years old is offered for sale, a prospective buyer suspects there is some fault in her that the owner has learned about and is thus prompted to sell her. A buyer thus feels some handicap.

With springing 2-year-olds, the prospective buyer feels he has an equal chance with the seller and is more generous in evaluating the younger animal. But these springing heifers often look much less attractive, and give far less promise, at a date some 3 or 4 weeks after they have freshened. The judicious buyer of dairy females can likely get more value for the money he expends if he resorts to some other age than springing 2-year-olds for his purchases.

The value of heifers

Heifers from 12 to 20 months of age are often the best buy. They are frequently at an awkward, ungainly stage; maybe they have not been too well grown; the younger ones are not yet bred. At this stage it is difficult to decide the potentiality of a heifer—but by and large even if she is a grade she will likely increase in value by 8 to 10 dollars each month. Even if she proves entirely unsatisfactory as a milk producer, and has to be sold for beef, the monetary loss on her will not be too high.

It is frequently recommended that the purchase of unbred heifers be avoided, because such a plan necessitates the prompt purchase of a bull to get them bred at the proper time. Actually, this is not a very important factor. At best, bull service is generally necessary a short time after females are purchased. Often some heifers thought to be in calf come in heat again and have to be rebred. Also, if springers are bought they will freshen in a few days or weeks, and within three or four months will have to be bred again for the next calves.

Nowadays, in nearly every section of Michigan a dairyman can take advantage of the practice of artificial insemination. He will not need a bull at any time.

How about records on cows to be purchased?

If a dairyman expects to improve his herd year after year he must do continuous production testing. He uses the records to evaluate his individual cows and the cow families he may have in the herd, and the herd sires he has used. He can make dependable use of the records because he knows the conditions under which they are made.

However, in buying cows a different situation exists. The buyer is often totally unable to learn exactly the conditions under which the records were made. Those conditions—the feeding and management—can modify greatly the record of an individual cow or a herd.

Only about 5 percent of the cows in Michigan have production records. There are many good cows that do not have records, and they are entirely worthy of a buyer's attention. And it must be realized that cows with records are invariably priced at a premium.

Men who have had experience in buying cows do not insist that the cows they consider shall have records. Even a beginner in dairy farming, who is just establishing his herd, likely can get greater value from the money he expends if he enlists the advice of a competent dairyman—and does not insist that the cows to be purchased shall have records.

Importance of experience and good judgment in buying

Any man who purchases as many as 10 to 20 dairy females will almost invariably find later he has made mistakes in his selecting of a few of them. They may not measure up to the standards he sets; they may have some habit or ailment that materially reduces their value. But the man experienced in handling cows with good judgment will make far fewer mistakes than the novice. And some cows likely will turn out better than anticipated.

An experienced man probably will concern himself first with those characteristics of the cow which he feels will indicate something of her producing ability. And his judgment on this is far more dependable than usually recognized. This man also will ascertain the age of the animal. Then he will learn her latest freshening date, whether she is bred again, and when the next calf is due. The regularity in her previous calvings helps establish whether a cow has been a "sure breeder" or a problem case. All possible facts on the health history in the herd from which a cow comes are helpful.

In considering a purebred female a man will give attention to her breeding, especially her sire and dam. The sisters of an animal can give some guidance as to her abilities. If she is an older cow, a man will desire to see or learn about her earlier calves—how they have developed.

In buying grade cows less attention is given to these latter points. If, however, the facts are available they can be used to advantage.

WHERE CAN DAIRY FEMALES BE PURCHASED?

In general, there is wisdom in the plan of trying to find animals for purchase in herds located not too far distant. Of course, this cannot always be done. Another step that frequently works well is to purchase some herd intact—thus avoiding the travel, expenses, and work of assembling a herd from various sources. Here again such a possibility may not exist.

There are various men of repute in each state, engaged in buying and selling dairy cattle, who know of the location of cattle that may be purchased. Their services may be obtained. Also officers and fieldmen of breed associations often have information of value, and are usually eager to be of help to beginners.

Private sale or public auction?

Whether it is preferable to buy dairy cattle by private negotiations, or through a reputable auction sale, depends upon many circumstances. By private sale a buyer can be more deliberate and careful in his selection and in the negotiations. He is not subjected to the atmosphere of excitement and high pressure that is built up at an auction sale. Furthermore, a buyer in private sale can obtain more facts about an animal—especially the unfavorable facts—than he could hope to obtain from a sale catalog or at an auction sale.

The purchase of cattle at an auction sale can spare a buyer the expense and work of visiting several herds—maybe widely scattered—to procure the number of head he desires. Also the trucking of a larger number from one location to his own farm is less costly than hauling one or two at a time from scattered locations.

WHAT WARRANTIES SHOULD A BUYER EXPECT?

In purchasing dairy cattle, the facts to consider are identical—whether the cattle be grades or purebreds—with one exception. The one difference is that matters of registration are involved with purebreds. Dairy cattle breeders usually carry out transactions involving their cattle on a high plane of ethics. They try to insure that a buyer of one of their animals must be satisfied in every reasonable way. Frequently a good breeder will go so far as to make adjustments in cases where no legal claim exists. These breeders realize such is not only a good policy from the standpoint of ethics, but also from the standpoint of business relations.

There are certain warranties which a buyer of dairy cattle can justly expect. The National Purebred Dairy Cattle Association has proposed for public and private sales a code of ethics which indicates the warranties that should be granted a buyer, whether it be purebreds or grades involved. While it is not mandatory that those persons who conduct auctions or offer their own animals for sale shall adhere to the proposals in this code, the code does establish quite definitely a standard of ethics that should prevail.

For most public sales of purebred dairy cattle, catalogs are compiled and distributed. The catalogs usually describe the "terms and conditions" for that sale. These should be read and understood by a prospective buyer. For private sales, complete understanding of the warranties should be reached before a transaction is completed. Auctions of grade dairy cows seldom provide the catalogs—but even at such auctions, or at private sales of grades, a buyer can rightfully expect the protection of customary warranties.

SIX POINTS OF IMPORTANCE

The proposed code of ethics that is designed for use throughout the nation is not applicable in every respect under Michigan conditions. But it does direct attention to six matters of importance. The parties in a dairy cow transaction should give attention to the following before the transaction is completed: Clear title, soundness, that the animal is a breeder, tuberculin test, brucellosis test, and in the case of purebreds, registration and transfer.

1. Clear title

This matter is so obvious that no one questions the justice of it. But a prospective buyer should be aware that a few sellers may offer animals to which they can not give clear title.

2. Soundness

It is proposed in the code—and it is a policy generally accepted—that an animal sold at auction is warranted as sound, unless a statement otherwise is made. But no aspect in dairy cattle transactions has more possibilities for disagreement and dissatisfaction than the judgment on soundness and what it includes. A seller is often reluctant to admit too much. A buyer is often aggrieved to learn later of some condition he feels is an unsoundness, but which was never admitted to him. It is, after all, a buyer's responsibility not to make

too many mistakes in his purchases. The importance of experience is most apparent here. The safest procedure is for each party to display an attitude of complete honesty and frankness.

3. A "Breeder"

A buyer can expect that an animal he purchases is a "breeder." But only in part can this term be spelled out with some precision. Any female that is pregnant when sold, or that has freshened within 60 days prior to the date of sale, is considered a breeder. It must be recognized by the buyer that a female which is presumed to be pregnant at the time of purchase may later prove not to have been in calf. An adjustment here can be expected. There is no warranty that a pregnant animal will carry her calf full term or will deliver a live calf. The cow that had freshened within 60 days may never conceive again. But these are risks a buyer assumes, unless other agreements have previously been made.

With females other than these just described as breeders, doubts and disagreements may arise. Recommended procedures for a buyer and seller to follow are described in the code, and in most sale catalogs. These are generally understood by men with experience in dairy cattle transactions. At best these procedures are involved and often costly.

With the proper attitude exhibited by both parties, each questionable case can be handled satisfactorily. A buyer must not be unreasonable in his demands. Then it is easier for a seller to fulfill the usual policy that "the buyer must be satisfied."

4. Tuberculin test

Tuberculosis is not nowadays a matter of great concern to dairymen. It has been largely eliminated from dairy herds. Nevertheless, reactors do appear from time to time and the possibility in spreading the disease must not be ignored.

The proposed code specifies that an animal for sale shall have passed a negative test for tuberculosis within 30 days, and shall be accompanied by a certificate to this effect. While such a procedure may be demanded for an animal to be shipped into another state, the test within 30 days and the certificate are not commonly required, nor expected, in transactions involving the interchange of cattle from one Michigan herd to another. This is due to the fact that the entire state of Michigan is a modified, tuberculosis-free accredited area.

5. Brucellosis test

A buyer can properly expect that each dairy animal he purchases shall be accompanied by the certificate that the animal has passed the blood test for brucellosis. Or if it is a young, officially vaccinated animal, a certificate to the effect shall be furnished. The code proposed by the National Purebred Cattle Association specifies also that a complete statement be printed in a catalog, or be announced, to reveal the health condition of the entire herd from which a sale animal originates. Information of this nature about a herd can be of far more value to a buyer than is commonly realized.

Michigan law prescribes that cattle over 12 months old—except steers and cattle sold for slaughter—shall not be sold unless accompanied by a "Certificate of Record." The certificate shows that the animal has passed an official test for Brucellosis, or that under certain other specified conditions is considered by the State Veterinarian not to be a health hazard from the standpoint of this disease. It is the responsibility of a seller, or his agent, to procure this certificate from the State Veterinarian and furnish it to the buyer.

6. Registration and transfers of purebreds

The code of ethics for sales recommends that the seller of a purebred shall have had, or will have, the animal registered and will have it transferred at his own expense. The seller thus furnishes the buyer the completed certificates. This is commendable either at an auction or a private sale.

A buyer of a purebred should obtain positive assurance the animal is, or can be, registered. If only a private sale is involved, the seller should be willing to accept only a partial payment until the certificate of transfer (or at least the signed application for transfer) is delivered to the buyer. In most public sales full payment is usually required immediately, and before the animal is moved. In this case a buyer can usually anticipate that the recording and transfer will be properly done.

SOME POINTS USUALLY OMITTED IN WARRANTIES

It will strike many persons as peculiar that the code of ethics previously mentioned makes no reference to any warranty on mastitis. There is difficulty in phrasing any proposal regarding mastitis that is entirely equitable and fair to both parties to a transaction. In some sales the milking cows are tested for mastitis on sale day and the

results announced. This is most commendable—unless the test used is one of doubtful value. The service of a competent veterinarian to collect the sample and conduct the test is strongly recommended.

A buyer should realize that mastitis can be a serious hazard. He should take every possible step to insure that a female he may purchase shall not infect his herd.

A man buying dairy cattle should recognize that there is usually no warranty the animal is free of bad habits such as sucking, kicking, or nervousness at milking. No commitment will usually be made whether she is a hard milker. Certainly a seller cannot be expected to guarantee that any cow will attain a certain level of production.

In some cases at private sale a seller if requested might guarantee an animal in respect to these points, but such will be unusual. The buyer is usually dependent solely upon his judgment.



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