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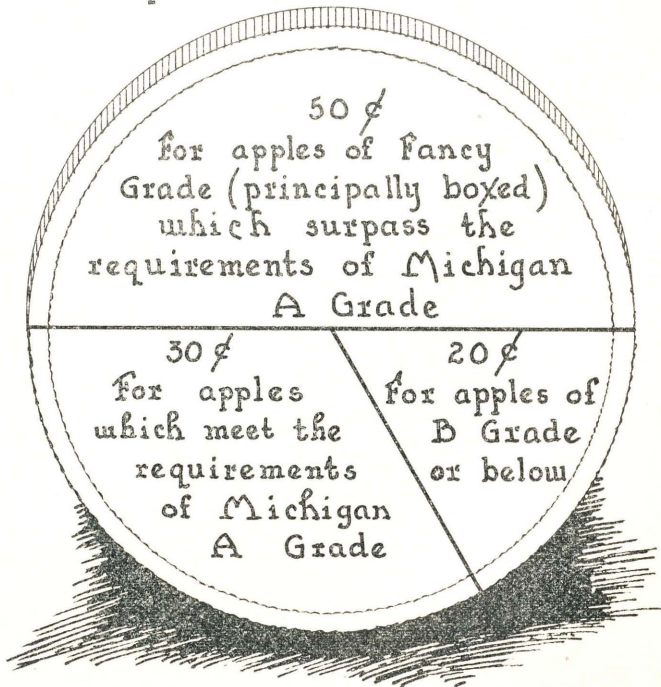
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CONSUMER DEMAND FOR APPLES IN MICHIGAN



AGRICULTURAL EXPERIMENT STATION
MICHIGAN STATE COLLEGE
Of Agriculture and Applied Science
SECTION OF HORTICULTURE
East Lansing, Michigan

How the apple buyer in Detroit,
Michigan's largest market,
spends her dollar



CONSUMER DEMAND FOR APPLES IN MICHIGAN

H. P. GASTON

1. PURPOSE OF STUDY

Michigan, with its large industrial population, is a first class apple market, and any one not familiar with the facts would assume that before seeking distant markets, Michigan growers and dealers would make sure that local markets were liberally supplied with home grown fruit. However, in the average year, approximately 40 per cent of the commercial crop or about 1,300,000 bushels of apples are moved by rail to out of state markets. On the other hand, apple shipments from out of the State into the city of Detroit alone amount to approximately 1,200,000 bushels annually. If the other cities and towns of Michigan, which annually buy thousands of bushels of apples grown elsewhere, were taken into account, it is evident that rail shipments of apples into Michigan exceed the movement of Michigan-grown apples to out of State markets.

Because of the difference in transportation costs, the Michigan consumer who buys out of State apples pays more for them than would be necessary if he bought home grown fruit. On the other hand, the Michigan grower who sells in a distant market receives less for his product than is being paid by Michigan consumers close at hand. It is obvious that something is wrong. Opinions differ as to why Michigan apples do not flow more naturally and easily into Michigan markets. It would appear, however, that the Michigan apple, as now grown, packed, and marketed, does not meet the requirements of Michigan consumers. A thorough knowledge of consumer requirements and preferences is of obvious importance.

Apple sales depend upon supplying what the consumers demand. It follows that a sound production program must be based on a knowledge of the demand situation. Unfortunately, demand is transmitted to the producer through a succession of marketing agencies and often reaches him in a form which he does not recognize. For example, a change in demand may be expressed by a change in the total volume consumed or possibly by a change from one grade to another. Demand may also be expressed in many other forms, such as complaints about price, quality, or appearance. It is practically impossible for growers, with ever present production problems to solve, to study and analyze the complicated demand situation.

In carrying on the study here reported, an effort was made to ascertain what consumers know about apples, what they want, and how, when, and where they want them. The observer tried also to find out how a knowledge of and a desire for apples on the part of the consumer,

can be fostered and increased. Steps were taken to discover how efficiently present marketing machinery is functioning with respect to supplying consumer demand, and how it can be made to function more effectively. This bulletin, then, presents the results of a study, the object of which was to obtain results which would be of value in developing a more effective production and marketing program for the Michigan apple.

2. METHODS EMPLOYED

The United States Department of Agriculture, and other agencies have compiled much valuable information on various phases of the apple industry. Some of these data throw light on the apple situation in Michigan and are included in this report. The demand study should mean much more when presented against this background of facts on production and distribution.

The salesman has opportunity to see exactly what people buy and how they buy it. If he can induce his customer to talk, he can usually learn much of what is going on in the consumer's mind and can discover what, how, and why he buys. Believing that no other source of information could compare with that obtained while actually selling apples, much of the writer's time was spent in acting as clerk. An effort was made to spend some time in all types of stores where apples are sold to ultimate users. Most of the time, however, was devoted to those establishments which sold comparatively large volumes of apples. In each case, the observer was presented to the trade as merely a new clerk who had been added to the sales force.

When possible, customers were usually allowed to choose from an assortment of grades and varieties, with very few suggestions from the salesman. Once the choice had been made, the observer tried, by tactful questioning, to discover the reason for the choice. During the course of the study, many thousands of individual apple sales were made, all classes of customers were served, and detailed records of many sales kept.

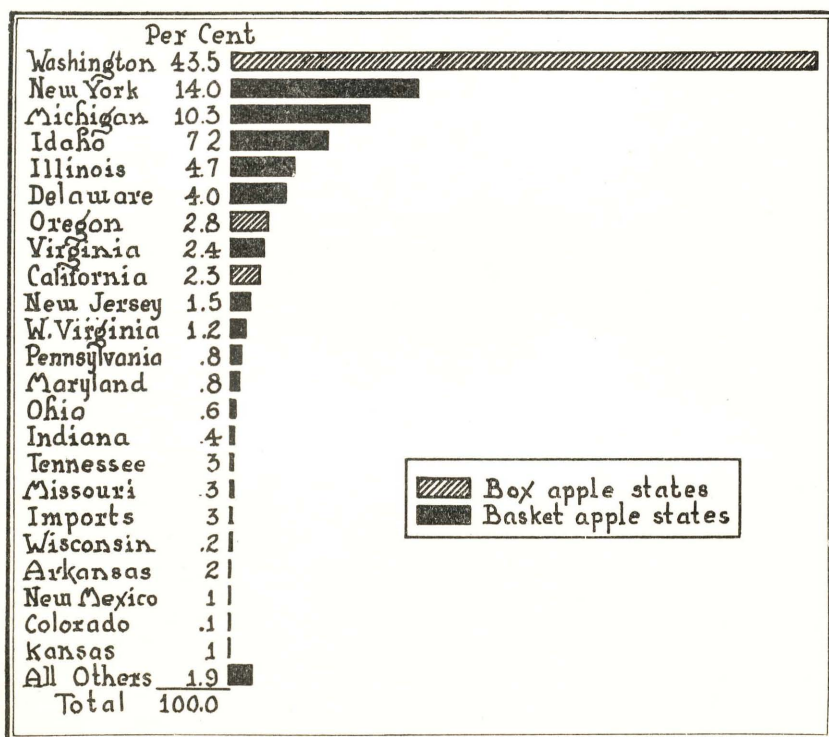
The varieties, sizes, and colors of apples commonly offered for sale at most retail outlets are somewhat limited. If the nature of the preferences of the consumer are to be ascertained, he must be allowed to display these preferences. For this reason, whenever possible special displays of different grades, colors, sizes, and varieties were arranged. This gave the customer an opportunity to choose from an assortment and it resulted in the accumulation of much valuable information. As practically none of the customers realized that their preferences and habits were being observed and recorded, there is every reason to believe that the data obtained afford a true picture of what is going on in the Michigan apple market.

An effort was made to become acquainted with carlot receivers, jobbers, hucksters, and peddlers. When possible, actual assistance was rendered in the carrying out of the routine work of the establishment. Many of the men engaged in this type of business are at first suspicious and even hostile toward an investigator, but by making them feel that he was really one of them, the observer was often able to get facts and figures and expressions of opinion which it would otherwise have been impossible to obtain.

In determining the wants of such large scale consumers as hotels, restaurants, and pie factories, it was necessary to rely for the most part on the information supplied by the purchasing agents of these concerns. Fortunately, these men usually have very definite ideas on the subject, and they are willing to make definite, concise statements of their requirements.

In predicting trends, it is important to have a knowledge not only of present conditions but also of past events. There are in the State a number of fruit exchange managers, inspectors, State employees, and others who have had many years experience in the apple business. Realizing the value of information and suggestions from such men, the writer made an effort to interview and obtain expressions of opinion from many of them. A number of the suggestions thus obtained were of value in determining the course of study as it progressed and in arriving at possible solutions for some of the marketing ills that are being encountered.

Figure 1.—Car-lot unloads of apples at Detroit, by State of origin, four-year average, 1926-1929.



Data from Table 1 of the supplement. In the Detroit market Michigan is outranked by two States and closely followed by several others.

3. SOURCE AND NATURE OF MICHIGAN'S PRESENT APPLE SUPPLY

Generally speaking, an individual or group is supplied with that for which he or they are willing to pay. It follows that, if we know what is being supplied to a given market, we know what that market is demanding. What a particular market has been and is demanding is an excellent indication of what it is likely to demand in the future. For that reason, some data dealing with the nature and source of Michigan's apple supply are here presented. As the apples consumed in Detroit differ considerably in character and source of supply from those consumed in other parts of the State, the city of Detroit and the balance of the State are considered separately.

Source and Nature of Detroit's Apple Supply

Figure 1 (based on Table 1 of the supplement shows graphically the States of origin of the car-lot unloads at Detroit on the basis of a four-year average. We find that in what might be called Michigan's own market she is outranked by two other States, Washington and New York. She is closely followed in order of importance by several other States and in the average year supplies hardly more than 10 per cent of the car-lot unloads at this market.

Car-lot unloads of apples at Detroit

The United States Department of Agriculture¹ recently reported that only about 10 per cent of the apples unloaded in Detroit during the 1926 season came in by truck. A similar survey made by the writer revealed the fact that the corresponding figure for the 1928 crop was approximately 11 per cent (see Table 2 of the supplement). These figures can be only approximate, but it is safe to say that in the average year certainly not more than 12 per cent of the apples unloaded in Detroit go into that city by truck. Car-lot receipts are therefore of major importance; and supply studies, even though they be based entirely on car-lot unloads, are indicative of existing conditions.

Car-lot unloads of apples compared to estimated local receipts at Detroit

In some markets, a considerable proportion of the car-lot arrivals are diverted to other markets. If true for Detroit, this factor might influence some of the conclusions drawn. In Market Supplies and Prices of Apples,¹

Proportion of car- lot apple receipts redistributed in surrounding trade territory

the United States Department of Agriculture reports that of the 1926 crop only about five per cent of the boxed apples and two per cent of the bushelled stock were redistributed in surrounding trade territory. Since dealers say that these figures are still approximately correct, this factor is at best of only minor importance. Furthermore, in recording totals, percentages, and other data for Detroit, car-lot unloads rather than car-lot arrivals were taken into account, and in this way the possibility of error due to this factor was almost entirely eliminated.

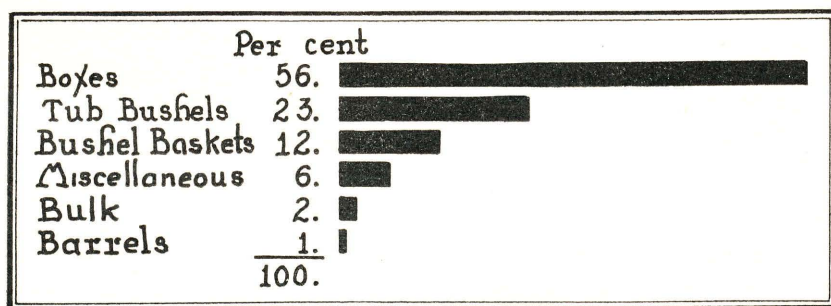
Detroit is a boxed-apple market. The United States Department of Agriculture found¹ that of the total unloads in Detroit in 1926, 55 per cent

¹Park, J. W.—Market Supplies and Prices of Apples.—U. S. D. A., Circ. 91, 1929.

were packed in boxes, six per cent in barrels, 29 per cent in bushel baskets, seven per cent in miscellaneous packages (mostly bushel crates), and three per cent in bulk. In a check of the package situation made by the writer in 1929, it was found that the proportion of apples packed in boxes had increased slightly, to 56 per cent, that the barrel package had been practically eliminated, that not quite so many apples came into the city in crates and in bulk, that 23 per cent came in tub bushels, and an additional 12 per cent in round bottom bushel baskets (figure 2 and Table 3 of the supplement). These data show three things of significance: first, the box is the package of major importance; second, the tub or straight-sided bushel is rapidly displacing the round-bottomed bushel; and third, the barrel has been practically eliminated.

The relative importance of various apple containers in the Detroit market

Figure 2.—Relative importance of various apple containers in the Detroit market.



Data from Table 3 of the supplement. Boxes and bushel baskets (especially tub bushels) are the important packages in the Detroit market.

The figures for 1926 do not segregate the tub and the round-bottomed bushel basket but it is safe to say that most of them were of the round-bottomed type. The straight-sided bushel is becoming more popular every day and bids fair to eliminate the old-style bushel in the near future. The box package will probably continue to gain in favor but the rate of change to the box is not likely to be rapid. Boxes and tub bushels are undoubtedly the packages which are, and will probably continue to be, in demand in the Detroit market.

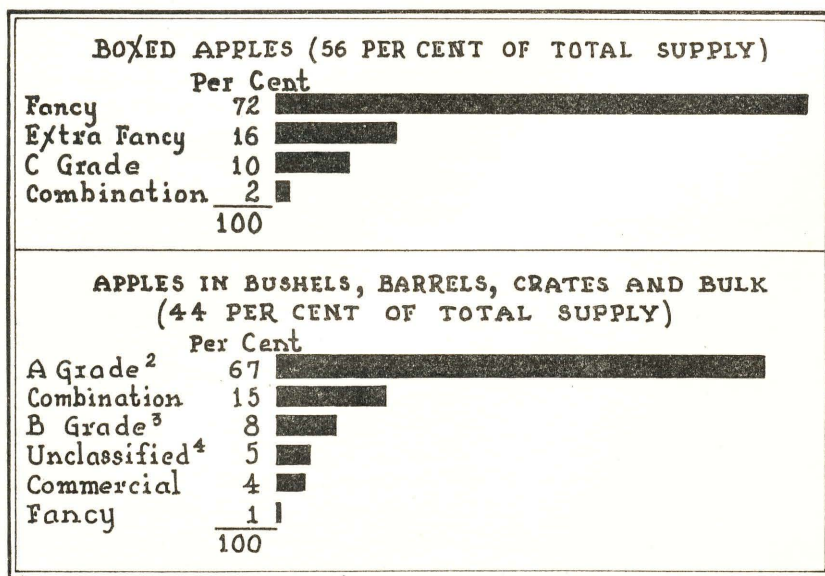
It must be remembered that several factors operate to determine the popularity of packages. The barrel has been practically eliminated because its size made it inconvenient to handle and because many retailers prefer to buy in smaller units. The tub bushel is becoming popular primarily because the package is more rigid and fruit packed in this container is less likely to be bruised than if packed, shipped, and stored in the old-style round-bottomed bushel basket. Though the box is a rigid package of convenient size, the uniformly high quality of the apples ordinarily packed in boxes undoubtedly has more to do with their popularity than do the merits of the package itself.

The grower or organization who plans to ship to a given market must know not only what package to use, but also the grade of fruit which is

most likely to meet with the approval of consumers at that market. Approximately 72 per cent of the boxed apples which arrive in Detroit by rail are of the Fancy grade, 16 per cent are Extra Fancy, 10 per cent are C grade, and two per cent are Combination grade. Although almost 90 per cent of the boxed apples now arriving in Detroit are either of the Fancy or Extra Fancy grades, those who have been for a long time in touch with the situation say that not many years ago most of the boxed apples consumed in Detroit were of C grade, and that those of the Fancy and Extra Fancy grades were in the

The relative importance of various grades in car-lot apple unloads at Detroit

Figure 3.—The relative importance of various grades in car-lot apple unloads at Detroit, 1929 season.¹



¹Based on sample consisting of 63 per cent of car-lot receipts.

²Michigan A Grade, U. S. No. 1 and corresponding grades.

³Michigan B Grade, U. S. No. 2 and corresponding grades.

⁴Unclassified and orchard run.

minority. In this change, which has been gradual, we have proof that standards are being constantly raised, and that Detroit consumers have been and are demanding and probably will continue to demand better apples.

The tendency towards better grades is apparent also in apples packed in bushel baskets. Not many years ago hundreds of cars of apples too poor to warrant packing at all came annually, into Detroit in bulk. Cars of bushel-packed apples of B grade also arrived in a never-ending procession. At the present time, less than 20 per cent of the car-lot bushel arrivals fail to meet or surpass the A grade specifications (see Figure 3). The trend towards better grades, regardless of package, means that most of the

growers who market their apples in Detroit must put up a quality pack. In round numbers, upwards of 50 per cent or about 650,000 bushels of the 1,300,000 bushels annually shipped into Detroit must surpass the specifications of the Michigan A grade. Thirty per cent or about 390,000 bushels must meet the requirements of the Michigan A grade, and only 20 per cent or about 260,000 bushels can be of B. grade or below.

The grower who thinks that he can, without altering the character of his fruit, keep up with the changing demand by merely packing it in the attractive and convenient tub bushel of 1930 rather than the ponderous and inconvenient barrel of 1920 is mistaken. The apple within the 1930 package must be as much superior to the apple of 1920 as the tub bushel is superior to the barrel. Very few Michigan growers still use the barrel package but a great many of them still pack the sort of apple which they were putting into the barrel 10 years ago. Growers who cannot or will not put up the grade as well as the package which is in demand, will be forced to seek other markets.

Apple markets are particular not only about the grade of fruit and the package used but also about the variety. Of the several hundred varieties of apples grown in the United States less than a dozen are of importance

**Relative importance
of varieties in
car-lot supplies of
apples at Detroit**

in the Detroit market. The number of carloads of Jonathan, Winesap, Rome Beauty, Rhode Island Greening, Delicious, Yellow Transparent, Gravenstein, Baldwin, Wealthy, Williams and Duchess account for practically 90 per cent of the average

annual car-lot unloads. Reference to Table 4 of the Appendix or to Figure 4, which shows graphically the relative importance of these and several other varieties, will enable the reader to visualize the variety situation. The list of important commercial varieties is constantly getting shorter, and middlemen say that it is increasingly difficult to dispose of apples of any but the recognized standard varieties. The time is not far distant when the so-called odd variety will be practically eliminated from the large city market. Growers who are so unfortunate as to have orchards made up wholly or in part of little known varieties should either have them top-worked to more desirable sorts or should seek outlets other than large city markets.

About 70 per cent of the apples arriving in Detroit by truck are brought in by growers. The remaining 30 per cent are brought in by jobbers who make a specialty of apples, often buying at the orchard and shipping by truck. As the general character of the fruit brought in by growers differs materially from that which is trucked in by other agencies, it must be considered separately.

**Source and nature
of apples arriving
in Detroit by truck**

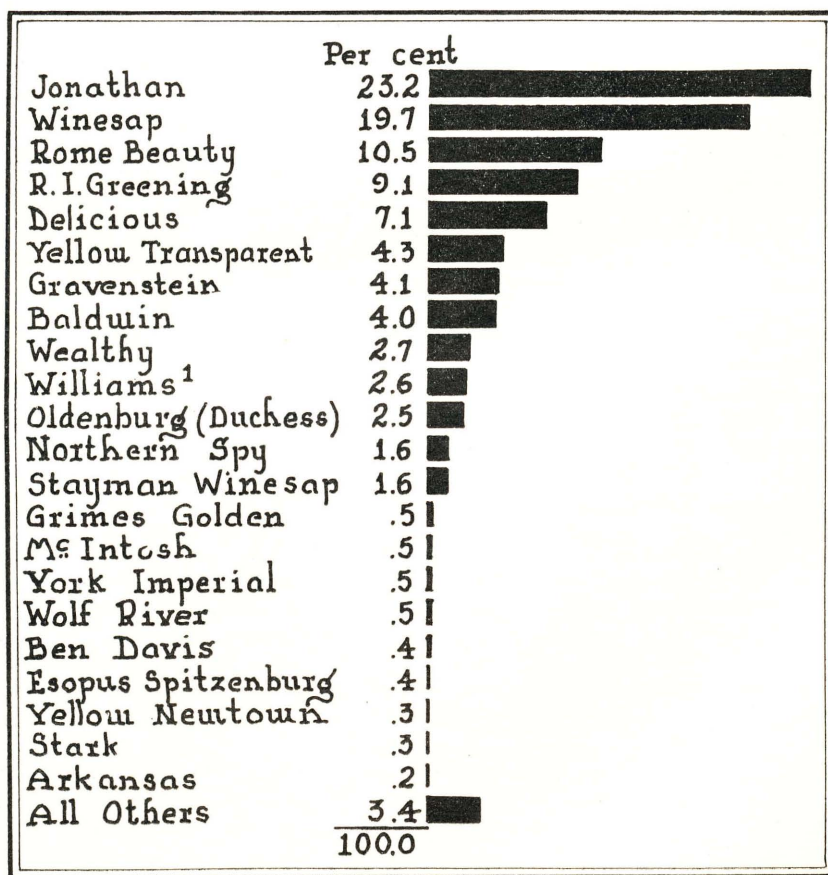
Many Michigan apple growers whose orchards are located in the Detroit area dispose of all or at least a part of their crop at the so-called farmers' markets located in Detroit. From 10 to 30 or more loads of apples are offered for sale at these markets on almost every day of the apple season. Some of this fruit comes from well-cared for orchards, is carefully graded and packed, and compares favorably with the best. Another portion comes from smaller, and often indifferently cared for orchards, many varieties are shown, and most of the fruit is of Commercial grade. Probably less than 10 per cent could be rightly classified as Michigan A grade or better. Though the list of varieties is longer than it should be, and some of the

growers occasionally practice misrepresentation and sharp dealing, the lack of standardization in grading is without doubt the factor which causes most of the dissatisfied customers to seek other sources of supply.

Another factor tending toward the disadvantage of the grower is the common practice of starting the season with fruit of poor grade. Most of the growers dispose of their windfalls and otherwise inferior fruit before offering for sale the better grades and varieties. This practice tends to depress prices and to give the growers' markets a bad name which is hard to overcome when better fruit is later offered.

That the fruit which is trucked into Detroit by jobbers is of a quite different character became apparent when a check of the situation was made

Figure 4.—The relative importance of varieties in car-lot supplies of apples at Detroit, average 1926-1928



Data from Table 4 of the supplement.

¹As the Williams is not an important commercial variety in this section it is probable that one or more other varieties are being marketed under this name. Only a small number of varieties are of importance in the Detroit market.

in 1930. It was found that these men were demanding the better, standard varieties, such as Jonathan, Northern Spy, Baldwin, Rhode Island Greening, and McIntosh. Not only was 90 per cent of the fruit of standard variety but more than 80 per cent of it was Michigan A grade or better. The remainder was practically all B grade, and, in most instances this was purchased not because the buyers wanted it, but because the growers practically forced them to take it along with the A grade fruit from the same orchards. The standards of these men are already high and bid fair to become even higher. Most of these men say that they lose money on the B grade and that in the future they will insist on buying only the A grade and, in case this cannot be done, they will seek other sources of supply. In fact, this tendency has for some time been apparent. One jobber who handles annually more than 100,000 bushels of apples says that a few years ago, when his customers stocked some B grade fruit along with better sorts, he handled practically nothing but Michigan apples, but that as his customers began to demand exclusively the better grades which he found hard to get from Michigan growers, he gradually shifted to boxed and other out of State stock. Now, instead of 100,000 or more bushels of Michigan apples, he draws most of his supplies from out of the State, and in the average year buys only 15,000 or 20,000 packages of Michigan apples.

About 10 to 12 per cent of the apples used in Detroit are brought there by truck. About 70 per cent of the trucked-in apples, which total in the neighborhood of 200,000 bushels, are brought there by producers. Most of this fruit is of Commercial grade and lacks standardization. This lack of standardized grading is, undoubtedly, working to the disadvantage of the growers. The 30 per cent of the truck-lot arrivals brought in by jobbers consists almost entirely of the better standard varieties. More than 80 per cent of this fruit is of A grade, and most of the jobbers say that in the future they will handle the A grade almost exclusively.

If the apple situation in Detroit were put into one sentence, it might read as follows: "Detroit's apple supply consists for the most part of apples of the better grades of standard varieties; these are packed in boxes and tub bushels and arrive by rail from out of the State."

Source and Nature of Apples Consumed in Michigan Cities and Towns Other Than Detroit

Car-lot receivers in cities such as Grand Rapids, Kalamazoo, Flint, and Jackson handle many of the apples which are consumed locally and, in addition, a portion of those which go into surrounding trade territory. For this reason, they occupy key positions. Many of these receivers supplied much valuable information. The data obtained this way were supplemented by figures secured from retailers in small cities and towns. The latter men supplied information as to the proportion of apples obtained from produce dealers as compared to that obtained directly from growers. They were also questioned, among other things, about the grades, varieties, and volume handled.

Source and Nature of Apples Passing Through the Hands of Produce Dealers Located in Small Cities

Apparently, car-lot receivers distribute 60 per cent of the apples which move into consumption in the territory under consideration. In the cities

of moderate size, especially those located at some distance from apple-producing areas, the percentage is somewhat greater. In the smaller towns, located reasonably close to the fruit belt, the retailers do considerable buying from growers. In obtaining apple supplies, the policies of retailers differ, but produce salesmen call on most retailers rather frequently, and the firms represented are usually better prepared to give service than are growers. For these and other reasons, most retailers find it desirable to obtain a considerable portion of their apple supplies from dealers, in spite of the fact that they often have the opportunity to buy from producers.

Retailers obtain a large percentage of their supplies from produce dealers

On the average, about 20 per cent of the apples which pass through the hands of the produce dealers in question are boxed apples originating out of the State. Most of these boxed apples are distributed in the larger towns and cities, such as Lansing, Battle Creek, and Jackson, and but few of them reach consumers in small towns and villages. In addition to the boxed apples coming from out of the State, perhaps 10 per cent of the total volume comes packed in bushel baskets, from other out of State sources. That portion of the supply yet unaccounted for, amounting to 70 per cent of the total, originates in Michigan orchards. Part of this amount is purchased directly from growers and another portion is obtained from co-operative or privately owned exchanges. The important thing is that the fruit is Michigan-grown.

Most of the apples handled by produce dealers are Michigan grown

The trend towards better grades is noticeable not only in large cities but in smaller cities and towns. Receivers deal in those things on which they can make a reasonable profit. They say that on account of shrinkage, high cost of storage space, the difficulty of selling, and other factors, it is practically impossible for them to make a profit on under grade apples. For this reason most dealers push the A grade. At the present time, about 75 per cent of the apples distributed by wholesale dealers are of A grade. Not only this but, when a number of these men were visited in the late spring of 1930, several of them said that though practically all of their A grade apples had been sold, they still had a considerable quantity of Commercial and B grade stock which was moving very slowly and a part of which would probably be sold at a loss. It is only natural that they look with disfavor on the under grade stock. Many of them even went so far as to say that in the future they would buy nothing but A grade apples.

The better grades are favored

Most growers will sell their better varieties only to those dealers who agree to purchase their little known and inferior sorts as well as those of recognized quality. For this reason, most distributors necessarily acquire small lots of the less desirable varieties. Under these circumstances, dealers always discount the prices paid for the better sorts and try in every way possible to limit the number of bushels of undesirable fruit. By refusing to buy at all when the proportion of poor varieties is large, the produce dealer keeps the proportion of undesirable varieties to a minimum. As a result, 90 per cent of the apples passing through the warehouse of the average distributor are standard varieties.

Recognized standard varieties are favored

Nature of Apples Which Michigan Retailers Obtain from Growers and Truckers

It was stated that retailers in outlying districts obtain 60 per cent of their apple supplies from produce dealers. Additional supplies amounting to 40 per cent of the total are obtained directly from growers or fruit exchanges.

Retailers obtain many apples directly from growers and truckers

This figure, of course, varies in different parts of the State. Most retailers in towns located close to large commercial orchards are called upon frequently by growers and asked to buy. Under favorable conditions, a large part of the supply is obtained in this way. Retailers located at some distance from producing areas are less frequently called upon by growers, but they usually have opportunities to buy from truckers, who cover almost the entire State.

Probably 90 per cent of the apples obtained directly from growers are Commercial grade. Consumers in small towns often buy by the peck, half-bushel, and bushel, and are not so exacting about the grade obtained. Most of the apples purchased from growers are of good merchantable quality, but they are not often sorted into different grades. Approximately 15 per cent of the apples distributed in small towns are of little known varieties, as compared to less than five per cent retailed in cities.

The grades, varieties, and packages supplied by growers

Little of the fruit sold by growers to retailers is packed in boxes, bushel baskets, or barrels. It usually arrives at the store in bushel baskets or open crates but it could hardly be said that the fruit had been **packed** as these packages are seldom ring-packed or faced. The retailer is usually prepared to transfer the fruit to his own packages when it arrives at the store.

The term trucker is very indefinite and may be used in referring to very different sorts of individuals. For example, it may indicate a man with little or no knowledge of fruit who is ordinarily otherwise employed but who owns a truck and occasionally purchases fruit at the orchard and sells to retailers anywhere within a radius of 300 miles. The experienced fruit buyer who owns a fleet of large trucks, employs several drivers, and makes regular runs from the fruit belt to distant markets is also referred to as a trucker. Between these two extremes are many more who answer to the same name. Truckers as a class are rapidly becoming an important factor in the distribution of Michigan apples. Many retailers say that they frequently buy from these men.

The Trucker as a distributor of Michigan apples

The way in which most truckers operate makes it practically impossible to obtain an accurate check on the volume and exact nature of the produce handled. Retailers are the best available source of information, and from them it was learned that most truckers are inclined to be "price buyers," who often deal in inferior grades and poor varieties. Fruit exchanges often sell "peeler" stock to these men, and much of this fruit eventually finds its way into retail stores. Varieties which can be marketed through other channels only with difficulty can often be disposed of to truckers, who in turn sell to a certain class of retailers and to individuals who are not very discriminating as to grades and varieties. Truckers usually load their apples in bushel baskets, jumble pack, and may or may not transfer them to other containers when a sale is made.

The grades, varieties, and packages commonly handled by truckers

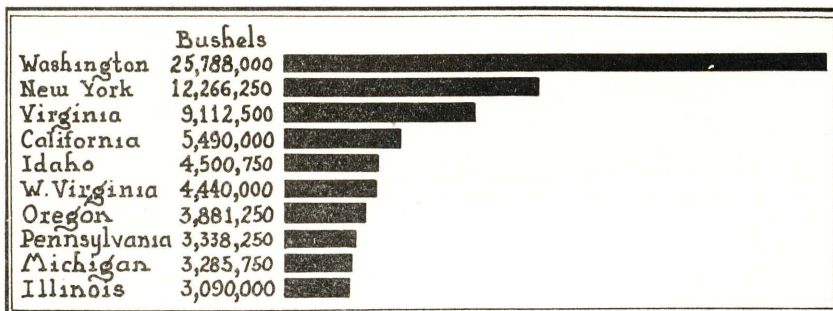
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4. PRESENT DISPOSITION OF THE MICHIGAN APPLE CROP

On the basis of a four-year average (1926-1929), Michigan ranks ninth as a producer of commercial apples. Figure 5 shows graphically the relative importance of the 10 most important States. Michigan is not, and probably never will be, a dominant factor in the national apple market. She has the advantage, however, of being close to large centers of population and should be a very important factor in her own and other nearby apple markets. The estimated average annual per capita consumption of apples is slightly less than one bushel. On this basis, if Michigan produces the right sort of apples, the entire commercial crop, which amounts in the average year to approximately 3,000,000 bushels,

**Michigan's place
among apple pro-
ducing states**

Figure 5.—Commercial apple production as estimated for the ten most important States, four-season average 1926-1929.



Adapted from Table 177, page 721, of the 1930 United States Department of Agriculture Yearbook.

should flow naturally and easily into her own and other nearby markets. If this actually happens, growers will participate in the advantages of comparatively low transportation charges and less complicated marketing machinery. If Michigan apples are going elsewhere, an effort should be made to bring about a readjustment. In any case, the facts should be known.

In spite of the fact that the importance of shipments by truck have been increasing very rapidly, during the last few years, slightly more than half of Michigan's commercial apple crop is still moved to market by rail. Figure 6 shows graphically the proportion. Only about 12 per cent of the commercial crop moves by rail to points in Michigan. Most of the shipments by rail to points outside of Michigan are to towns and cities in Illinois, Wisconsin, Ohio, and Indiana, only a small portion going to more distant markets.

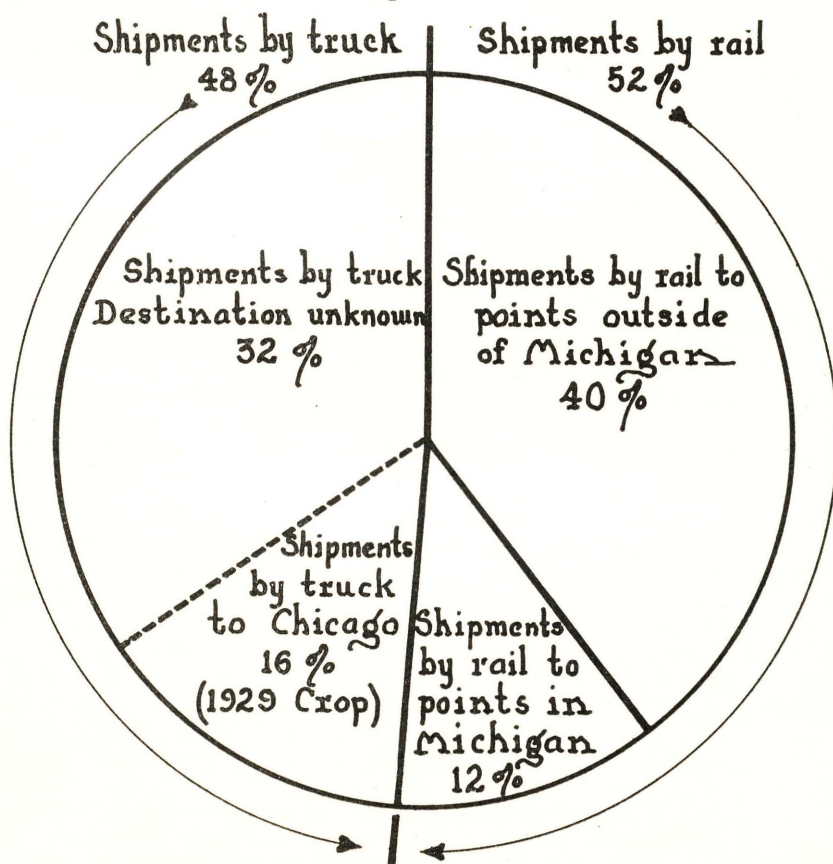
Almost one-half of the commercial crop is moved by truck, (see Figure 6). Unfortunately, there is no accurate check on the destination of truck

**Rail shipments of
Michigan apples**

**Many Michigan
apples are shipped
by truck**

shipments other than those moving into Chicago. Though this carrier has only recently become important, 16 per cent of Michigan's 1929 crop moved into that city by truck, and there is every reason to believe that in the future more and more of the apples going from Michigan to Chicago will be moved there by truck. A considerable part of the crop which is moved by truck to markets other than Chicago is, undoubtedly, unloaded in Michigan. It was stated above that a large percentage of the apples passing through the hands of retailers located in the smaller towns of Michigan originated in Michigan orchards. Most of these are moved to the retailer either directly or indirectly, through produce dealers, by truck. That part of the crop moved by truck and not unloaded in Michigan finds its way for the most part into Illinois, Ohio, and Indiana. Most truckers operate within a radius of 200 to 300 miles, and it is likely that shipments which go to more distant points will continue to move by rail.

Figure 6.—Disposition of Michigan's commercial apple crop, four-season average 1926-1929



Figures adapted from Marketing Michigan Apples Summary 1929 Season, U. S. Department of Agriculture, Bureau of Agricultural Economics. See Table 5 of the supplement.

5. PROBABLE FUTURE DISPOSITION OF THE MICHIGAN APPLE CROP

If in seeking a market for her apples, Michigan goes to the East, she must meet competition from New York, a State which produces more apples and is better equipped with storage and other facilities to merchandise its crop. Michigan apples shipped west must compete with the well-organized growers of the northwestern States. Competition may not be quite so keen in the South, but the commercial crops in Virginia, Illinois, Ohio, and Indiana are large and are usually somewhat closer to centers of population in these States than is the Michigan crop. All this means that the logical market for Michigan apples is at or near home.

During 1918 and 1919, more than 22 per cent of the car-lot apple unloads in Detroit originated in Michigan. Ten years later, in 1928 and 1929, less than 10 per cent of the car-lot unloads came from Michigan orchards.

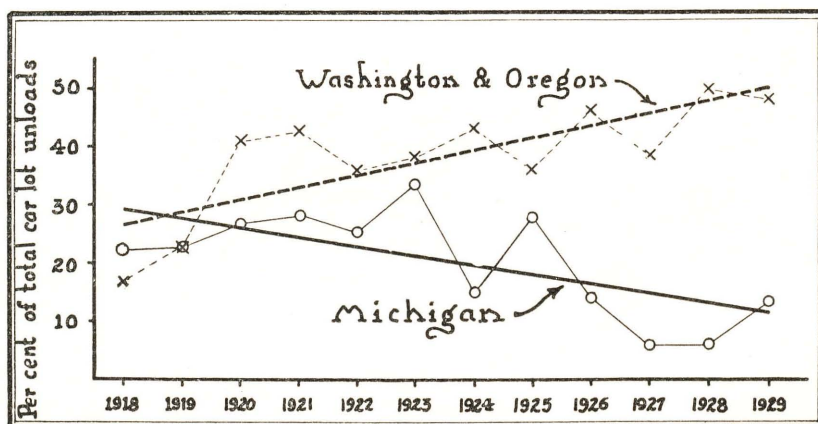
Nearby markets most promising

In nearby cities the trend is away from Michigan apples

Figure 7 shows graphically the trend during the entire period for both Michigan and for the boxed apple States of Washington and Oregon. See also Table 6 of the Appendix. It is evident that in her largest city market Michigan is being displaced by other States.

More apples were brought to Detroit by truck during the latter part of the period in question, but it has been pointed out that shipments by truck amount to only 10 or 11 per cent of the total. It becomes evident that, even after Michigan is credited with the number of apples trucked into Detroit, she is still losing out. Detroit has come to demand a boxed apple which Michigan is not prepared to supply and a bushelled apple of high quality, which Michigan does not supply in adequate

Figure 7.—Per cent of total car-lot unloads at Detroit, originating in Michigan and in Washington and Oregon.



Based on Table 1 of the supplement. See also Table 6 of the supplement. In her own market Michigan is losing out while the boxed apple States are becoming a more important factor.

quantities. Under these conditions, it is only natural that other States should be depended upon for the major portion of the apple supplies. Figures have been presented for Detroit only, but what is true of that city is, generally speaking, true of other large cities in which Michigan apples are marketed. Fruit exchange managers, who have for years marketed large quantities of Michigan apples, say that in recent years Michigan has gradually been losing out in Detroit, Chicago, Milwaukee, and other large city markets.

The majority of city receivers say that they are gradually discontinuing the handling of the Michigan pack and that they are replacing it with boxed apples and with bushels obtained elsewhere. Some of the reasons men-

Produce dealers in large cities look with disfavor upon Michigan apples

tioned for this change were as follows: "Michigan packs too many varieties," "Michigan apples have a bad reputation," "Michigan apples are too small," "Michigan packs too many mixed cars," "Michigan growers are dishonest," "Grading standards are none

too high and Michigan growers use all of the tolerance much of the time," "Michigan apples lack color." A few direct quotations copied from interviews with these men may help us to understand exactly how they feel. "We must have uniformity in each package, and if you take the top off of the average Michigan bushel, you have nothing left." "Michigan growers start the season with poor varieties and grades, which gives Michigan apples a bad name; we want to deal in apples which have a good reputation, so obtain our supplies elsewhere." "In dealing in Michigan apples, each new car means we have a brand new article with which to become familiar and to sell. Our trade demands standardization and uniformity. Can you blame us for not being crazy about the Michigan pack?"

Many of the car-lot shipments of Michigan apples are unloaded in small cities and towns. Without doubt, a large part of the remaining supplies are moved by truck into towns of the same size. Consumers in outlying

In the future Michigan apples will probably be marketed for the most part in small cities and towns

districts do not at present ordinarily demand a fancy apple. There are hundreds of these small cities and towns in Michigan, Ohio, Indiana, and Illinois, which will absorb Michigan apples if they can be obtained for less money than apples of similar grade from competing States. Michigan's strategic location with respect to these markets should enable her to under-

sell her competitors and keep these markets indefinitely. She should not, however, make the mistake of feeling too complacent. Some boxed apples are even now being sold in small towns. Michigan can keep her place in the apple market only if she will supply the apple which is demanded. Even the small towns are constantly demanding better apples and, unless Michigan growers can and will pack better apples and make it easy for consumers to obtain them, at least a part of the small town business will go to competing States.

6. ULTIMATE CONSUMER DEMAND FOR APPLES

When during the course of the study, apple sales were made by the writer, a record was kept showing whether the sale was to a man, a woman, or both together. An analysis of this data, which included several thousands

Women do the apple buying

of sales, indicates that a campaign, either educational or advertising, for the purpose of influencing apple sales to consumers should be aimed at housewives. It was found that in Detroit 86 per cent of the retail apple sales were made to women. An additional four per cent of the sales were made to men and women who came to the store together. In these instances, the women usually made the actual selection of fruit. Not only do women make most of the purchases but the average size of the sale made to women is slightly larger than that made to men. She is usually buying for the family, while the man may be buying only one apple for himself. It would probably be safe to say that more than 90 per cent of the apples consumed in the City of Detroit are purchased by women.

Women also do the apple buying in the smaller cities and towns of Michigan but the proportion is not so overwhelmingly in favor of women. It was found that the housewives made approximately 69 per cent of the purchases, and that, in nine per cent of the sales, the responsibility was somewhat divided between men and women. As in Detroit, the women usually cast the deciding vote as to the nature of the fruit purchased when men and women came to the store together. In small towns, the average size of the sale to men is somewhat larger than that made to women. This can be accounted for by the fact that in small towns some pecks, half-bushels, and bushels are purchased. Since these packages would be difficult or impossible for the women to carry, the men are told what to ask for and are sent for the apples. Though, compared to the city, a smaller portion of the sales are actually made to women, they probably make the decision as to the exact character of the fruit to be purchased in close to 90 per cent of the transactions. In making purchases, men often said that they had forgotten the name of the variety which they had been told to ask for or they indicated in some other way that they had been sent to purchase apples of a specific grade or variety.

In an effort to determine how many of the sales were made to repeat customers, the observer greeted each buyer waited upon on a given day with some such remark as, "Did we have these nice Jonathans, referring to a freshly opened package, the last time you were in?"

Apple sales are made to repeat customers

Or the salesman might say, "You buy most of your apples from us, don't you?" Answers to such questions usually indicated that the customer was a regular patron of the store. Occasionally, the answer made it impossible to say definitely whether or not this was true, and buyers were never pressed if they showed a disinclination to make a definite statement. A number of such tests conducted in different stores revealed the fact that on the average at least 86 per cent of those who buy at a given store go back to the same place frequently to make other purchases. Only about three per cent of the answers indicated that customers were not regular patrons, and it is altogether likely that a good many of those from whose answers it was impossible to be sure were also more or less regular

customers. These data obtained by questioning hundreds of customers in many different stores indicate, then, that more than 90 per cent of the customers to whom apples are sold return to the same store again and again. Whether or not they buy apples a second, third, and fourth time will depend largely upon whether or not the fruit obtained on the first occasion came up to their requirements and expectations. Producers, middlemen, and retailers MUST NOT forget that apples are sold, if at all, to steady customers whose confidence must be developed and retained.

There are a few discriminating housewives who never make purchases without careful attention to such matters as variety, proper season, maturity, and condition of fruit. The vast majority, however, when making purchases on their own initiative consider only the one item of appearance. It must be conceded that, in practice, consumers are usually influenced by factors which result in their buying good apples even though not of fine appearance. For example, the clerk usually

Apples are purchased on appearance

tries to sell a good apple which will bring his customer back for more or the customer may see on a placard or hear from the salesman the name of a variety which he could not recall but which he knows to be a good one, and, for this reason fruit of good quality, though not of the best appearance, is purchased. When not influenced in some way, the buyer usually makes his selection on the basis of appearance alone. A few actual experiences along this line may help us to realize fully the extent to which customers are influenced by this factor.

The writer once discussed the importance of appearance with a trucker who not only maintained that this factor was the only one of importance, but offered to prove his contentions. A short time later this man obtained several truckloads of wind-falls of the Wealthy variety. The fruit had grown on young trees and was of good size. It had been produced in a sod-mulched orchard and had lain on the ground long enough to attain high color. The fruit, of only fair eating quality at best, was over-ripe, and when sold was actually of very poor quality though of fine appearance. The trucker rented a vacant city lot on which he set up a large display and a large sign which read, "Fine Eating Apples." Five large truckloads of apples were sold in as many days, and the observer was forced to admit that the fruit had been sold almost entirely on the basis of appearance, and that this was, under certain circumstances at least, the most important factor.

The writer had another excellent opportunity to observe the importance of appearance when customers are allowed an unrestricted opportunity of choosing from among several varieties. A new store was opened during the height of the apple season, and considerable space was devoted to an apple display. The owner had never before dealt in fruit and had practically no knowledge of varieties. For the opening he had on hand a number of bushels of Northern Spy, Baldwin, McIntosh, Jonathan, and Grimes Golden, varieties which his produce dealer had recommended. Though of good quality, this fruit was deficient in color and was inclined to be somewhat dingy in appearance. The store owner was not entirely satisfied with his apple display and, when the opportunity presented itself to obtain some Ben Davis of fine appearance and unusually good color, he purchased 20 bushels of these apples. They were polished and displayed along with the other varieties. The opening had been well advertised, and many customers came to the store. The observer had charge of apple sales and with the

permission of the owner did not name varieties or make suggestions, but rather disclaimed a knowledge of varieties or of quality and suggested to customers that they make their own choice. The Northern Spy and McIntosh were priced at three pounds for 25 cents, the Baldwins, Jonathans, Grimes Golden, and Ben Davis at four pounds for 25 cents. All sales were recorded, and the results are here presented:

THE PER CENT OF TOTAL SALES BY VARIETY DURING THE FIRST WEEK

	Per cent
Ben Davis.....	72
Northern Spy.....	10
Jonathan.....	7
McIntosh.....	6
Baldwin.....	3
Grimes Golden.....	2
	<hr/> 100

It must be admitted that during the latter part of the week a good many complaints were made and that some customers even went so far as to return the apples purchased. Apple sales fell off sharply, and some customers may have actually been lost, but the trial had definitely proved that the customer buys largely on the basis of appearance when he is not influenced in his choice by the salesman or other factors.

At another time, a few bushels were selected at random from a shipment of Jonathans which were being sold at four pounds for 25 cents. The apples selected were dipped into a pail of muddy water, allowed to dry, and then displayed in second-hand bushel baskets close to clean, bright fruit from the same shipment. The dingy apples did not sell even though they were priced at five pounds for 25 cents. In order to sell this fruit, it was necessary to reduce the price to 6 pounds for 25 cents and even then many customers were inclined to be dissatisfied and insisted that the price should be still lower.

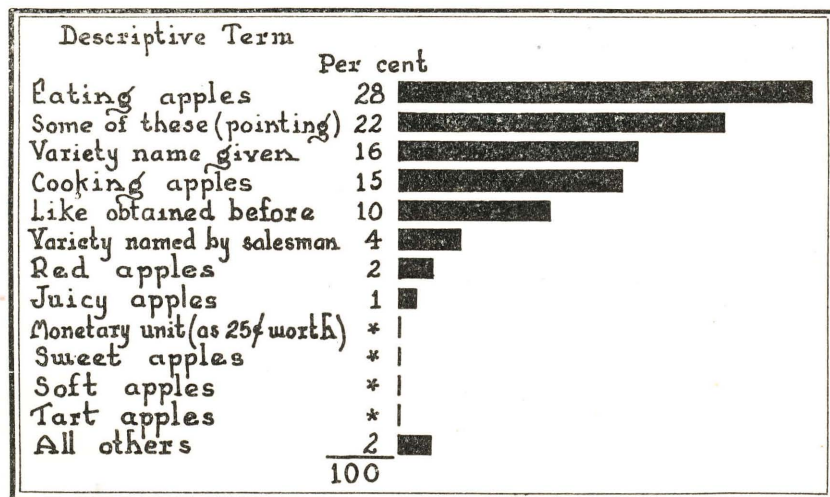
Other factors such as variety name, and the salesman's recommendation, enter into most apple sales but the fundamental importance of appearance cannot be questioned. The bright, clean apple is comparatively easy to sell, and the customer is likely to be pleased and return for more. The wet, dirty apple is hard to sell, and the purchaser is likely to be dissatisfied.

If, in buying apples, consumers would ask for specific grades and varieties, the retailer from whom they made purchases would insist that his produce dealer supply him, the retailer, with exactly what ultimate consumers re-

**The terms used
by consumers to
describe apples
desired**

quired. Dealers would in turn demand from growers only those grades and varieties which moved readily into consumption. This would simplify the situation for all concerned and would probably result in increased sales and greater margins of profit. In actual practice, only about 16 per cent of the sales are made to customers who make definite, concise statements in regard to what they want. The wants, then, of 84 per cent of the customers are stated in indefinite terms which the clerk often misinterprets. A knowledge of exactly how customers describe the apples desired will enable us more readily to understand how much is left to the salesman and how difficult it often is for even the experienced and conscientious clerk to determine from the meager description given exactly what is required. The results of a study of this subject are presented in Figure 8. If the customer's need is wrongly interpreted and if he is supplied with apples which do not come up to his

Figure 8.—The relative importance of terms used by consumers in describing apples which they desire to buy.



*Less than one per cent.

When more than one term was used as "Eating apples like obtained before" the term which received the most emphasis was recorded. If two or more terms were given the same emphasis the one first mentioned was recorded. Only about 20 per cent of the customers use more than one descriptive term.

requirements and expectations, he is likely to try another store the next time. If he has the same experience repeatedly, he is likely to discontinue or at least curtail his apple purchases.

In discussing the terms used by consumers to designate apple varieties, it was said, Figure 8, that only 16 per cent used varietal names. In addition four per cent recognized an occasional name when repeated by the salesman.

The consumers' knowledge of apple varieties

These two groups together make up only 20 per cent of the total. Not only is this total small, but only a part of the group can tell by the appearance of the fruit whether or not they are receiving what they ask for. Most consumers will accept without question any green apple proffered to them when they have asked for Rhode Island Greenings. Yellow Bellflower or other yellow apples will in the same way be accepted by most customers who ask for Grimes Golden. McIntosh are often sold for Snows, and other similar substitutions can often be made without detection. In other words, only a small group of consumers are familiar with varietal names, and a still smaller number associate the name with definite varietal characteristics which enable them to make sure that they are obtaining that for which they have asked.

This lack of knowledge concerning varietal characteristics makes it possible for the unscrupulous salesman to substitute inferior varieties for the good ones ordered. For example, one merchant who operated a temporary open-air market and did not try to build up a repeat business, caused a large sign which read, "Delicious Eating Apples," to be erected over his apple display. Under this sign, he displayed in turn

Wealthy, Jonathan, and Winesap apples. Some customers undoubtedly made purchases thinking that they were obtaining apples of the variety Delicious. This failure to get what they expected probably reacted unfavorably not only on the variety misrepresented, but also on apples in general.

In tabulating consumer knowledge of varieties, all those individuals who were obviously familiar with several varieties as to both name and appearance were listed separately. Only slightly more than four per cent of all customers were so classified. In other words, the number of people who really know varieties is very small.

**Varietal preferences
of those consumers
who have a knowl-
edge of variety
names**

Though only a comparatively small group is represented, some varieties are known and called for. In analyzing the variety situation, it was found that the list of those preferred by residents of Detroit differed somewhat from the varieties called for by residents of smaller cities. For that reason, the preferences of the two classes are presented separately.

THE FREQUENCY WITH WHICH DIFFERENT WINTER VARIETIES OF APPLES WERE CALLED FOR BY INDIVIDUALS FAMILIAR WITH VARIETAL NAMES

Residents of Detroit		Residents of other Michigan cities and towns	
	Per cent		Per cent
Jonathan.....	40	Northern Spy.....	46
Delicious.....	19	Jonathan.....	16
Northern Spy.....	14	McIntosh.....	12
R. I. Greening.....	6	R. I. Greening.....	6
Winesap.....	6	Snow.....	5
Rome Beauty.....	5	Baldwin.....	4
McIntosh.....	4	Wagener.....	3
Baldwin.....	2	Delicious.....	1
Snow.....	1	Tolman Sweet.....	1
Grimes Golden.....	1	Grimes Golden.....	1
All Others.....	2	Russet.....	1
	100	King.....	1
		All Others.....	3
			100

Probably the most significant fact revealed by these data is that the list of varieties known and called for is rather short, and that in every case those preferred are the ones which combine fine appearance with good or excellent quality. The variety situation, then, is briefly this: Only about 20 per cent of the consumers know or even recognize varietal names. The small group which does call for apples by name usually asks for the better sorts. Northern Spy, Jonathan, Delicious, and McIntosh are the ones most frequently requested.

Several other factors which influence sales will be discussed, but too much emphasis can hardly be placed on the fact that quality is of first importance. By quality is meant not size or grade but rather the intrinsic merit of the fruit when it comes to such matters as flavor and texture. A Northern Spy is certainly a quality apple, a Ben Davis lacks quality even though it be of Fancy grade. It could almost be said that the factor of quality is as important as all other factors combined.

In this connection, attention may be called to a few facts already pointed out which indicate that consumers do demand high grade and good quality.

**Quality as a factor
influencing apple
sales**

1. Fifty-six per cent of Detroit's apples come packed in boxes, 88 per cent of which is either of Fancy or Extra Fancy grade. Most of this fruit is of good quality.
2. Twenty-three per cent of Detroit's apples come packed in tub bushels, 68 per cent of which is of A grade or better.
3. The 10 most important varieties received in the Detroit markets are all of good or excellent quality when in season.

It is true that a case was cited in which highly colored Ben Davis sold on appearance, but it was noted that within a week complaints were made, and that apple sales declined sharply. Likewise it was stated that in another instance over-ripe Wealthys sold rapidly, because of their appearance. However, in this case each sale was made to a new customer, and this is very seldom possible for any extended period. Evidence shows that in the main apple sales are made to repeat customers. No permanently located retailer should forget that upwards of 90 per cent of his apples are sold to those who bought apples from him at some previous time and were at least reasonably well pleased. If he begins to sell apples of poor quality, the same group will notice the change, and many of them will express their disapproval by going elsewhere for their apples. Of course, there are different degrees of quality and different ways of expressing disapproval, but let the merchant try to sell fruit of obviously poor quality over a period of time and see what happens. The observer had an opportunity to see exactly what does happen under these circumstances.

A fruit store was featuring medium-sized, red Jonathan at four pounds for a quarter. Apple sales were averaging about \$15.00 per week-day. It became difficult to obtain more Jonathans, so apples of similar appearance, though of much inferior quality, were substituted. When the substitution was made, some of the regular customers noticed the change at once and refused to buy; by the fourth day, those who had bought early in the week in spite of the change began to obtain their apples elsewhere; and by the last of the week, a considerable decline in sales was apparent. By the third week, almost all of the regular customers knew of the change to an inferior variety, and week-day sales amounted to only \$3.00 or \$4.00. For the fourth week, the proprietor obtained more Jonathans. A few of the regular apple buyers who came into the store to make other purchases were informed that Jonathans were once more available and began to buy. During the fifth week, sales mounted slowly as confidence was restored, but it was not until the sixth or seventh week that confidence was fully restored and sales again reached the \$15.00 level. Figure 9 shows graphically how sales were affected. This is only one example of many which could be cited, proving that quality is of first importance.

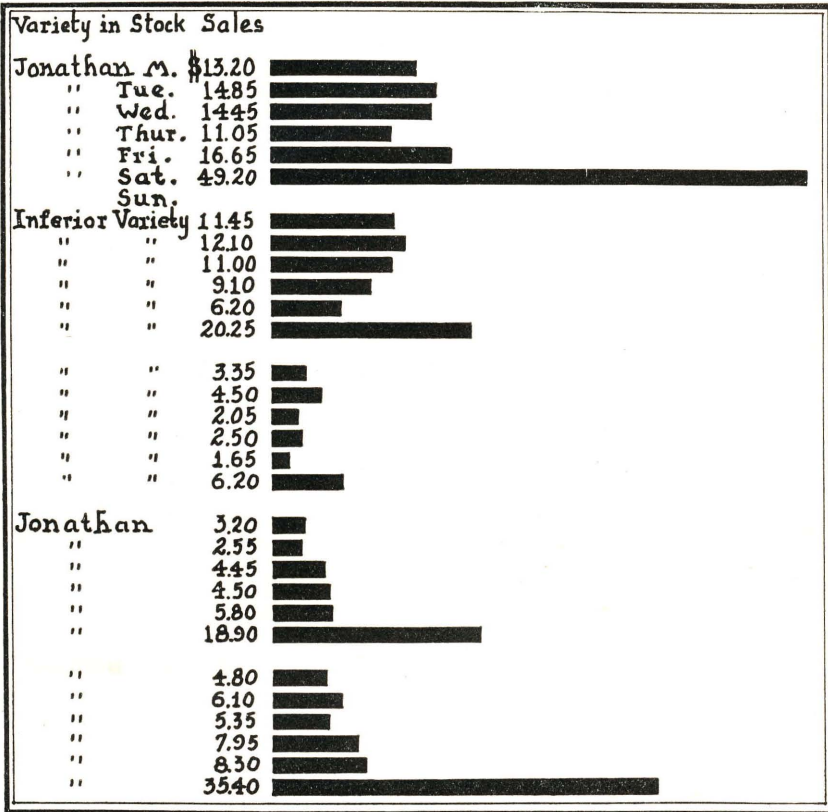
**Color as a factor
influencing apple
sales**

Sales depend first upon quality, but even the quality apple is very hard to sell unless it has color, and by color is meant bright, red color. Color is, of course, a factor in appearance, the importance of which has already been pointed out. Consumers usually think of a green apple as immature or of poor quality. They are constantly expressing in one way or another their preference for bright, red fruit.

For example, a customer will often say, "You may weigh up a peck from this bushel IF you will give me the nice, red ones."

A failure actually to select the red fruit specified may mean the loss of a sale. The individual who purchases a single apple will select one with high

Figure 9.—Apple sales on consecutive week-days preceding, during and after a period when Jonathan was replaced by apples of inferior quality.



color even though it be a little small or slightly bruised or scarred in some way.

In ordering over the telephone, buyers practically always specify, "Nice, red apples."

Red color seems to be associated in the minds of all consumers with desirability. In fact, the fruit grower himself generally selects the reddest specimen for eating.

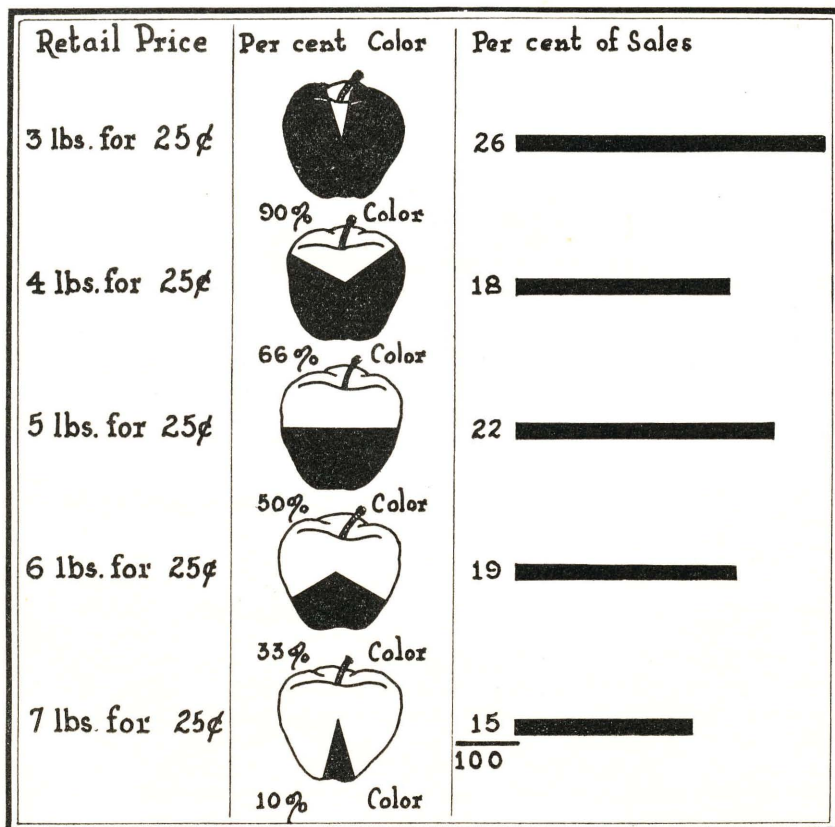
A number of experiments were conducted to determine the importance of color as a factor influencing sales. Mention of a few of them may help in understanding why red apples bring more money, and from the standpoint of the grower are, therefore, so desirable. In one instance Grimes Golden and Jonathan of equal size and grade were displayed side by side daily for a period of two months. To the consumer who asked for eating apples, both varieties were named and recommended as being first class. The salesman took care not to show a preference for either apple and usually ended his description by saying, "They are equally good, and I will be glad to sell you either one." When, at the end of the period the sales were summarized it was found that 97.6 per cent of the apples sold had been of

the red variety. As it is generally admitted that the quality of the Grimes Golden is equal to that of Jonathan, the great difference in volume of sales can only be accounted for by saying that the trade preferred a red apple.

The test just described was verified by using apples of one variety in another trial. Some Jonathans having one red cheek and one yellow cheek were selected. In one basket the fruit was arranged with the yellow cheeks up; apples from the same lot were put into another basket with the red cheek up. The apples from the basket with red cheeks showing sold readily at four pounds for 25 cents. The apples from the basket showing the yellow cheeks moved slowly at five pounds for 25 cents.

Still another trial was arranged with the object of discovering how much more consumers will pay for red than for green apples. Northern Spy apples of uniform, medium-size were sorted into lots according to the percentage of red color present. These lots were priced in direct proportion to the amount of color present and offered for sale. The results obtained are shown graphically in Figure 10. The different lots, it was found, did not sell at exactly the same rate. Those priced at three pounds for 25 cents sold most readily, those priced at seven pounds for 25 cents sold very slowly

Figure 10.—Color as a factor affecting the prices paid for apples.

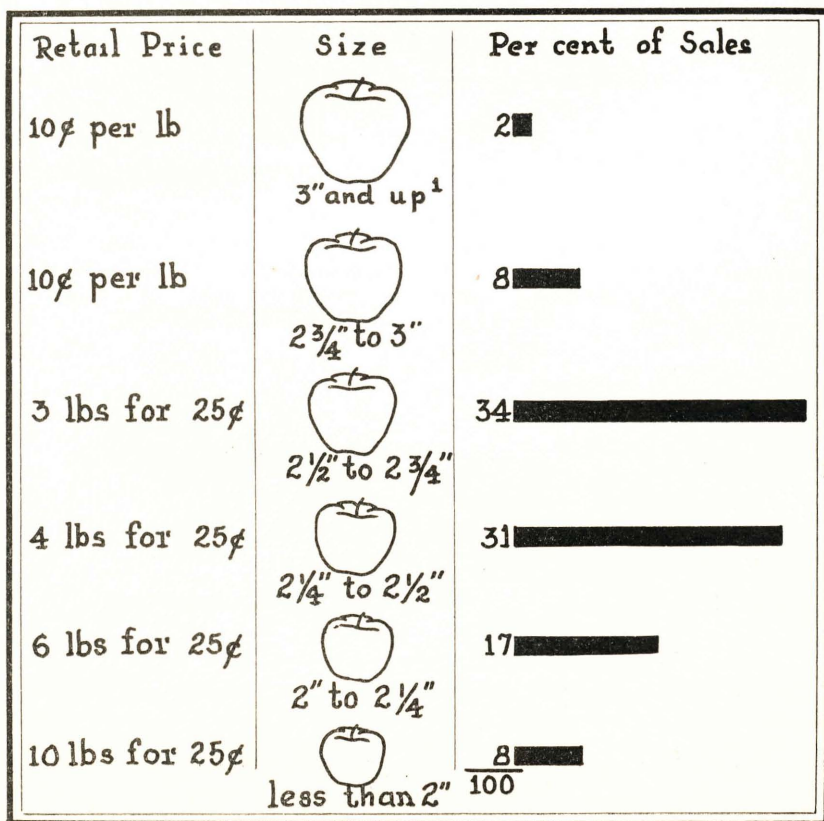


which proved that, though consumers will pay a premium for almost solid red fruit, they purchase green apples sparingly even at considerably reduced prices. Those apples priced at five pounds for a quarter sold a little better than those priced at four pounds for this amount, indicating that while people will pay a premium for solid red apples, those showing 50 per cent color are almost as desirable as those which show two-thirds color. The rate at which the six-pounds-for-a-quarter apples sold indicates that when the fruit shows only one-third color, it is approaching that point at which sales are difficult at any price.

Next to quality and color, size is the factor of most importance in making apple sales. Like color, size is another factor in appearance, and for that reason is important. Green apples, even of good quality, are very hard to sell, but if the fruit in addition to being of good quality, has good color, it will sell, though perhaps slowly, even though of small size. The importance of this factor should, however, not be minimized. Consumers will pay more for large apples.

**Size as a factor
influencing
apple sales**

Figure 11.—Size as a factor affecting the prices paid for apples.



¹This size was not always available.

Jonathan apples of similar character, except as to size, were sorted into lots of different sizes, ranging from three inches and more to those less than two inches. These were priced in direct proportion to size and offered for sale. Lots were given equal display space and were made available for a period of several weeks. The prices asked and the proportionate number of sales made are shown in Figure 11.

The apples of very large size, three inches and up, were first priced at 12½ cents per pound, but did not sell so were later reduced to 10 cents per pound and even at that figure moved very slowly. Apples of large size, two and three-fourths inches to three inches, sell fairly well even at comparatively high prices. Most customers, however, price considered, prefer apples which are two and one-half inches to two and three-quarter inches in size. The two and one-fourth to two and one-half inch apples were almost as popular at a slightly lower price. Apples between two and two and one-fourth inches sold only moderately well even though the price was materially lower. Experience with the apples of two inches in diameter and smaller indicates that fruit of this size moves slowly even at a very low price. Briefly, then, the trial revealed that apples of medium to large size are preferred, but that little, if any, more will be paid for fruit of very large size. When the size drops below two and one-fourth inches, prices must be materially reduced if the fruit is to sell.

Apple price studies carried on in a single store are subject to influences which would make it impossible to say what would happen under somewhat different circumstances in another store. Average results obtained, say, in a group of chain stores with units operating under different circumstances would be much more reliable. The produce buyer for a large chain store organization kindly supplied some interesting information concerning the relation of apple prices and volume of sales. This information was based on a study of prices and resulting sales, extending over several seasons. Though actual records were not available, the statement which follows was made only after a close study of actual happenings.

**Price as a factor
influencing apple
sales**

HOW VOLUME OF SALES IS INFLUENCED BY CHANGES IN APPLE PRICES

Retail Price	Estimated Volume of Sale per Week in Bushels
9 cents per pound.....	2,500
8 cents per pound.....	4,000
7 cents per pound.....	5,000
6 cents per pound.....	6,000
5 cents per pound.....	7,500

There is good reason to believe that when prices are changed, sales do fluctuate about as recorded. Certain it is that people are accustomed to and willing to pay from six to eight cents per pound for apples of good quality, and that when the price is raised to more than eight cents per pound purchases are restricted. If, on the other hand, prices be dropped to less than six cents per pound, a noticeable increase in volume of sales is sure to result.

The observer had many opportunities to see how customers are affected by price changes. If the price is reduced, all is well and good but, if the price be increased, many customers are sure to complain and some may even be lost. As previously stated, most apple consumers return to the same store again and again. They usually desire to obtain fruit similar to that purchased on a former occasion and they expect to pay the same price for it. If apples were five cents a pound yesterday, the housewife can see no reason why they should be six cents a pound today. As the revision of prices upward is resented by practically all customers, it is advisable for the retailer to start the season with prices which he can maintain with the minimum number of changes.

Under the conditions just described, it is only natural that retailers should resist upward revisions of price by growers and dealers. The writer believes that Michigan producers do themselves much harm by starting the season with poor fruit at low prices. Retailers adjust their prices accordingly and, when growers later try to get more for better apples, the price changes are resisted by dealers, retailers, and consumers alike.

Bruises are very hard to measure qualitatively, and their effect upon sales, being usually associated with other factors, is hard to determine. Generally speaking, the smaller the sale the more particular the customer is that his fruit be free from bruises. The buyer who wants from one to a dozen apples to eat out of hand usually insists that they be almost absolutely free from bruises. Strangely enough, in buying a larger quantity of apples, the customer will often accept a small percentage of bruised fruit almost without question. This is probably due to the fact that they do not realize that bruised fruit is present.

Customers not infrequently voice such sentiments as, "A good many of the apples I received the last time were bruised. Please do not give me any more like that."

Bruises probably cause more dissatisfaction after the fruit has been removed from the store than it does at the time of the sale. Briefly, then, bruised apples cannot be sold at high prices, especially for eating out of hand. Customers will continually select apples which are free from bruises, and the salesman must eventually place the remaining fruit in a lower grade. Those purchasing apples in quantities for cooking will accept a small percentage of bruised fruit, probably because they do not notice it at time of purchase.

Under the heading, "The Consumers' Knowledge of Apple Varieties," it was pointed out that only a very small percentage of the consuming public associated varietal characteristics with variety names. Under these conditions, variety names can hardly be of great importance. It is true that most of those who do call for specific varieties are loath to accept anything else, but this is usually because they feel sure that the variety specified is of good quality. Most of them would accept any other variety just as readily if they felt sure that it possessed the desired characteristics. Well colored apples of good size and high quality are comparatively easy to sell, regardless of varietal name. In other words, Northern Spy may be sold

**Bruises as a
factor influencing
apple sales**

**Variety as a
factor influencing
apple sales**

to a few people because of its reputation. This good reputation was obtained, however, because of the excellent quality of the fruit; and the majority of the sales, even of this well-known apple, are probably made rather because of its good qualities than on account of its name.

Because of its excellent qualities, a demand for McIntosh can be readily developed in a community or locality where it is but little known. The writer has on different occasions assisted in selling McIntosh under these circumstances but consumers will not continue to buy apples of poor quality even though the salesman represents them as being of the best and most popular variety in the world.

Fruit which shows healed-over insect injuries on a small percentage of the specimens is not heavily discounted by customers except when the blemishes are on strictly fancy eating apples purchased one at a

**Insect injury as
a factor influenc-
ing apple sale**

time. Apples of medium grade, 10 to 15 per cent of which showed healed-over insect injury, seemed to sell practically as well as absolutely clean fruit. Occasionally, a customer will ask that the salesman select clean fruit to fill his order but this is not common. Customers do draw the line at fruit which is badly scarred or deformed. When the customer discovers that one or more apples of this character have been included with those purchased, he loses confidence in the salesman and this is highly undesirable. It would be better for the merchant to discard this fruit, even though it were done at a loss. An even more satisfactory solution would result if growers and organizations would co-operate in keeping this class of fruit off the market.

Apples which are actually wormy should never be sold, even at low prices. Apples of good size and color can often be readily sold even though wormy but practically each sale of this kind means a customer lost.

The writer has often sold oranges, bananas, and other fruits to customers who in the course of the conversation would make some remark as, "I was sold some wormy apples last week, and have decided that in the future I will use other fruits. It is very hard to get good apples any more."

Obviously, growers and retailers cannot afford to create this sort of sentiment. Losses suffered when fruit of this nature is discarded by the merchant are almost sure to be less than those resulting from sales which mean the loss of a customer's confidence.

Because consumers have long thought of the boxed package as one containing a quality product of high grade, they show a preference for apples displayed in boxes. Boxed apples of identical grade were priced

**The package in
which apples are
displayed as a
factor influencing
sales**

the same and displayed in both bushel baskets and the original boxes. It was found that about 70 per cent of the customers chose apples packed in boxes but, when the price of the apples displayed in boxes was later raised from three pounds for 25 cents to 10 cents a pound, almost 90 per cent of the customers began to buy the apples displayed in baskets and priced at three pounds for 25 cents. This trial indicated that, though people have a preference for apples put up in boxes, this pref-

erence is associated with the superior grade and quality usually obtained. They will actually pay little, if any, more for good boxed apples than they will for equally good busheled apples.

Much has been written and said about the preferences of customers for apples produced in a particular section or State. Less than 1/10 of 1 per cent of the thousands of customers to whom sales were made during the course of the study, made any mention of a preference for apples grown in a given section. Most people do not wonder or care where the apples they buy are grown so long as they are good apples. The Michigan grower may then be sure that consumers will pay very little, if any, more for apples packed in boxes than they will for those of equal grade, well-packed in bright clean bushel baskets. It is the apple itself rather than the package in which it is packed or the State in which it is grown that sells.

Conversely, the Michigan producer need not assume because his apples are Michigan-grown that they possess any special appeal to consumers. Many apple growers in every section of the country sincerely believe, that, while apples grown elsewhere may look nice, their own fruit possesses special advantages of flavor, texture, or aroma and is, therefore, superior and in demand. These alleged differences exist, for the greater part, only in the minds of growers, and growers do not **buy** the apples which pass over the counters of grocery stores. As far as Michigan apples are concerned, the fact is that less than one out of a hundred consumers in Michigan's trade territory ask for Michigan-grown apples.

Indeed, in looking at really nice Michigan-grown fruit they not infrequently made such statements as, "Well, I see you are handling western apples. They certainly know how to grow nice fruit." Or, after eating a nice Michigan-grown Jonathan apple a customer might say, "This is certainly a fine apple; it tastes like the ones I used to buy back in York State. Is that where you get them?"

In other words, the preferences actually expressed by thousands of Michigan consumers indicate that to advertise the fact that apples are Michigan-grown would probably do as much or more to discourage sales than to increase them.

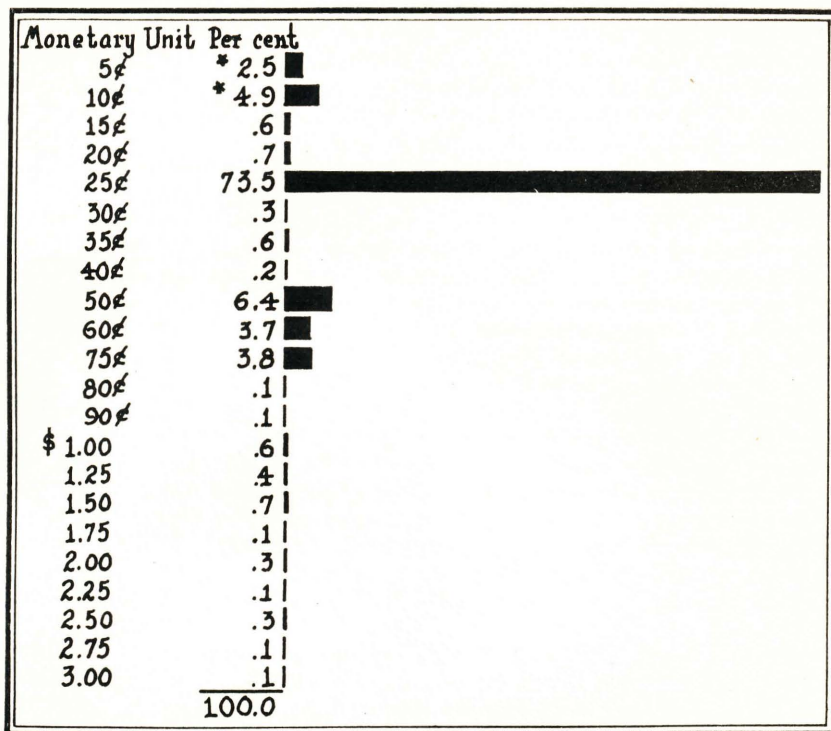
It is probably true that the monetary units most often employed in making apple purchases are the ones which customers prefer. A knowledge of the different units used will enable the apple merchant

**The most common
monetary units
of sale**

to advertise and price his fruit in terms of those units which are most likely to appeal to customers. The amount of money involved in each one of some 4,000 apple sales made both in Detroit and in smaller cities was recorded. These data were analyzed, and the result is presented in Figure 12. Probably the most significant fact revealed is that by far the greatest majority of sales are made to those people who purchase 25 cents worth of apples at a time. Those who depart from the popular 25 cents unit most frequently spend either 5, 10, 50, or 75 cents or \$1.00, \$1.50, \$2.00 or \$3.00.

Less than 1/10 of 1 per cent of the customers in Detroit purchased apples in units greater than \$1.00 but the number of those who spend 5 and 10 cents at a time is greater in Detroit than in cities outside of Detroit. In smaller cities, fewer apples are sold to those who spend

Figure 12.—Per cent of apple sales in different monetary units.



More than 95 per cent of the sales were actually in the units shown. When sales were made in odd amounts as 13c, 27c, etc., these were included with the nearest even unit, i. e., a 13c sale would be recorded as a 15c sale.

*Had the observer made sales from push carts, cigar counters, and small fruit stores where sales of one apple are the rule the percentage of sales in the 5c and 10c groups would have been somewhat larger.

small amounts, but the number of those who spend from \$1.00 to \$3.00 at a time is somewhat greater. The city merchant, then, should feature only the smaller monetary units of sale, while the merchant located in a smaller town will sometimes find it profitable to feature the larger units of sale.

In making sales, the observer usually endeavored to discover for what purpose the fruit was going to be used. Sometimes answers to questions regarding intended uses were somewhat indefinite, and a great many customers showed a preference for a dual purpose apple saying perhaps that, though most of the fruit would be eaten out of hand, it was the intention to make a pie. The statements as to intended uses were classified as accurately as possible and will give us at least a fair insight into the proportion of apples used for different purposes.

How apples are used in the home

HOW APPLES ARE USED IN THE HOME

Intended Use	Homes of consumers residing in Detroit	Homes of consumers residing in smaller Michigan cities
Eating out of hand.....	Per cent 64	Per cent 52
Making pies.....	12	16
Making sauce.....	11	17
For baking.....	7	10
In salads.....	6	5
	100	100

Based on 2,000 sales to Detroit consumers and an equal number to consumers outside of Detroit.

On the basis of these data, it appears that almost two-thirds of the apples sold at retail in Detroit are eaten out of hand. For this purpose, most buyers demand an apple of high grade and the fact that much of the Detroit apple supply is used in this way probably accounts for the fact that, generally speaking, Detroit does demand an apple of high grade.

It is apparent that progressive apple growers must concentrate more and more on apples which are good to eat out of hand and which at the same time will cook well. Ben Davis, Colvert, Fallawater and a host of others of inferior dessert quality commonly raised in Michigan must certainly go. Though of first importance, dessert quality alone is not enough. While most customers call for an eating apple, the fact that a great many housewives use at least a small part of the fruit in making apple sauce or pies, makes a general purpose apple, such as the Northern Spy, very much to be preferred.

Not infrequently, a customer who had purchased an eating apple of poor cooking quality, such as the Delicious, would later say, "Those apples you sold me the last time, were fine to eat out of hand but could not be used for pies at all. This time I want an apple which can be cooked as well as eaten out of hand."

In brief, apple growers should concentrate on apples of good dessert quality which will cook. The apple of the future will certainly be a general purpose apple. Judged by these standards the recommended list for Michigan would probably read as follows: Northern Spy, Jonathan, Wealthy, Snow, McIntosh, Canada Red, Wagener (in the northern part of the State), and Rhode Island Greening. The last named variety is included not so much because it is a general purpose apple but because it is the one and only variety of cooking apple which is generally known and called for.

In discussing the intended uses, customers tell not only how they expect to use the fruit, but also why they are buying it. Judging from the voluntary statements of hundreds of customers, the author is con-

Why people buy apples

vinced that a great many apple sales are made as a direct result of the health appeal which apples have. The slogan, "An apple a day keeps the doctor away," is repeated and believed by a great many apple consumers. The health factor is of special importance in those homes where there are children.

Not infrequently, customers will look vacantly about a general store and when they notice the apple display approach the clerk, and say, "I almost forgot the apples for the children." Or the customer may say, "Give me some more of those red apples; the children like them as well as candy, and they are so much better for them."

The health appeal is also strong in many homes in which there are no children.

Customers will not infrequently say, "Your apples seem high, but I do not feel that I can afford to be without them. They are so good for one."

The writer believes that apple growers, produce dealers, and retailers could use this powerful appeal to much better advantage than they now do.

In the opinion of the writer, the weak point in the merchandising of the Michigan apple is the clerk who serves, or fails to serve, the ultimate consumer. It will be remembered that consumers, in describing the apples desired, use for the most part such indefinite terms as "eating apples," "cooking apples," "red apples," and "apples like those obtained before." There are many varieties of eating apples; there are many varieties of cooking apples; and there are also many which are both juicy and red, and it is up to the salesman to discover just what is wanted, supply it to the best of his ability, and at the same time be courteous and tactful. Unfortunately for all concerned, the majority of those selling apples are not themselves sure about the correct season and exact uses to which different varieties are best suited. It is little wonder that many consumers buy the minimum number of apples. The housewife not only returns to the same store time after time but if she finds there a clerk who is, in her opinion, both capable and conscientious, she will often wait several minutes in order that she may be served by this clerk. The consumer who finds by experience that the salesman can be relied upon is willing to abide by the advice of that clerk.

**Much depends on
the salesman**

The following incident proves conclusively that a large majority of customers will buy what the salesman, in whom they have confidence, recommends. The observer was acting as clerk in a store which featured both McIntosh and Jonathan apples. Many of the customers were in the habit of buying either one or the other of these varieties regularly. On one occasion the supply of Jonathan ran low, and the proprietor knew that it would be impossible to obtain additional supplies for at least a week or 10 days. It was highly desirable that the stock of Jonathan be not completely exhausted as some customers would probably go to other stores rather than take a substitute variety. It was thought, however, that the greater percentage of customers could be influenced, and it was decided to try to induce as many as possible of the regular Jonathan customers to take a substitute variety.

Accordingly, each customer who in one way or another indicated his preference for Jonathan was approached somewhat as follows. "I can sell you Jonathans if you really prefer them, but we are this week featuring the McIntosh, a variety of excellent quality and fine appearance, and we would be glad if you would give this apple a trial. We can recommend it as being one of the best."

All prospective Jonathan customers were approached in the same way, and as a result 63 per cent of them made purchases of the substitute variety mentioned. An additional 8 per cent took still other recommended varieties. The remaining 29 per cent showed a decided preference for the Jonathan originally decided upon and were, of course, supplied. In this way, the small supply of Jonathan lasted much longer than it otherwise would have, and only a few of the customers later expressed themselves as having regretted the substitution. To complete the picture the observer later tried the experiment of inducing the regular McIntosh customers to accept Jonathan. It was found that practically the same number of regular McIntosh customers could be influenced in their choice of variety.

The good clerk knows the variety names and the best uses of those in stock. He is able to answer such questions as, "How many apples are there in three pounds of 2-inch Jonathan?" He should always fill orders from well filled baskets. Customers believe that the apples in a basket which is only half full have been picked over and that as a result the fruit will be inferior. The good clerk does not show the impatience he feels when a customer asks many questions and takes a long time to make up his or her mind. If the customer is not hurried or offended the first time, the next sale will be easier. The clerk should arrange his stock so that a given variety is, if possible, always in the same place. Many customers forget the variety name of the apple they want, but they remember the position of the basket from which it came, and are disappointed if, at a later date, another variety occupies that position. Most customers come back repeatedly and, if the clerk can remember them and some incident of the last sale made to them, they are sure to be favorably impressed. The salesman who can and will do these and other similar things, none of which are very hard, will be rewarded not only by the bestowal of confidence of his customers, but also with a growing volume of sales which he can influence to his own and to his customers' mutual benefit. Good salesmen can do much but there are few good apple salesmen and, as apples are not a strictly standardized product, they are comparatively hard to sell.

To attempt to educate or influence all, or even a large part, of the clerks who sell Michigan apples is out of the question. The only other solution is to grow uniformly fine apples and pack them in such a way that the work of the salesman is made easy.

To use the words of one chain store executive, "Apples must be packed so as to virtually sell themselves."

He went on to say that chain store officials realize that they cannot expect to employ **salesmen** at the salaries ordinarily paid and that many of their clerks are really not salesmen at all, but merely order fillers. He further said that purchasing agents were constantly reminded that they must buy only standardized goods which would virtually sell themselves. This accounts for the fact that chain stores deal for the most part in standardized boxed apples of fine appearance which can be opened and displayed with the minimum of effort.

The writer was somewhat surprised to discover that very few clerks really tried to sell apples. In fact, many clerks when asked to help decide just what fruit is to be purchased will suggest oranges, grapefruit, or perhaps canned fruit in preference to apples. In the course

of this study, the writer became rather well acquainted with many clerks and from them, as well as from his own experience, learned that the customers who buy strictly standardized products know exactly what they are receiving and do not later make complaints but customers who buy apples which are not strictly standardized are not infrequently disappointed. They may find that the fruit is of unfamiliar variety, that it does not look or taste just as they had expected it would, or that it is not suited to their purpose. Salesmen are only human; they like to please and they dislike to receive complaints and criticisms. They have found that it is much harder to sell unstandardized apples than it is to sell comparatively well standardized oranges, grapefruit, bananas, and canned fruits. This fact, no doubt, accounts in a measure at least, for the fact that during the last few years per capita sales of oranges have increased several hundred per cent while apple sales have decreased. Many buyers who hesitate to take an unstandardized Michigan bushel at \$2.00 are glad to purchase standardized boxed apples at \$2.50 or \$3.00. Michigan apples should be packed so that like standardized goods they will advertise themselves, sell themselves, and bring back their own repeat customers. That means that they must not be just fair, or not be just good; they must be excellent and, above all, **uniformly** excellent. It would be poor business for a manufacturer to make and sell even a small percentage of poor tires, even though they could be sold at reduced prices.

The customer who purchased the inferior product would soon forget about the price and go about saying, "Stay away from John Dow tires, I 'ran through' a set of them in less than 10,000 miles. The next time I buy I am going to get tires that are uniformly good."

It is probably just as poor business for the individual or the growers organization to sell some under grade fruit.

The writer has heard many customers say, "Stay away from Michigan apples, you never know what you are getting. The next time I buy fruit I am going to get boxed apples which can always be depended upon."

Shippers in the northwest are under bond to ship nothing below C grade apples, which correspond roughly with Michigan A grade, out of the State, except they be expressly for making vinegar or other manufacturing purposes. If Michigan growers continue to allow under grade fruit to reach the market, they will find it increasingly difficult to market their better apples.

Though there are many McIntosh and Jonathan apples grown in Michigan, it has been estimated that more than 80 per cent of the trees of these varieties now growing in Michigan are less than 10 years of age.

**How consumers
respond to edu-
cation**

In other words, these apples are comparative newcomers in the small town and city markets of Michigan which have not for years been getting boxed apples of these varieties. The fact that these varieties stand, next to Northern Spy, at the top of the list of the known varieties in these markets proves that to some extent at least consumers do become familiar with the names of comparatively new varieties if they be good ones. It is true that the group which becomes familiar with variety names is small, but growers with McIntosh for sale need not fear that consumers will hesitate to take

them if they are properly introduced. The observer acted as clerk in a store in which McIntosh had never before been sold and which was in a community where it was a little known variety. Supplies of the variety in question were plentiful, and it was decided to try to develop a demand for the apple. Accordingly, each customer who purchased other varieties was given as a sample a small well colored McIntosh and attention was called to its fine appearance and excellent quality. Within a week, people began to ask for apples like the samples. Sales increased until, after about two months, the sales of this variety had surpassed those of any other variety, except that of Northern Spy which had for years been a favorite.

The demand for Rome Beauty as a baking apple was developed in almost exactly the same way. For a time, one of these apples was included with each purchase of another variety when that variety was to be used for baking. It was not long until Rome Beauty, which is a good baker, was being used by more than half of the customers who regularly bought baking apples.

Not only can people be educated and influenced as regards varieties, but almost any of their buying habits can be somewhat influenced. For example, one merchant decided that he would try to sell half pecks, pecks, and half bushels instead of the smaller units commonly called for. He advertised, displayed, and featured the larger units and tried in every way possible to encourage the purchase of these packages. It was a little hard at first but, after a period of about two months, the majority of his sales were of the larger units. The practice of buying by the quarter's worth is probably in the same way largely the result of education. For several years, stores all over the country have advertised, priced, and talked this unit of sale and it is only natural that most consumers should fall in line.

Briefly, then, customers do learn within a few weeks or a few months to buy a new variety or even a new package, provided that the new variety or package has merit and is presented in the right way. This approach can only be made through a good salesman but good salesmen are not the rule so growers must depend for the most part upon standardization and excellence of product.

7. THE APPLE DEMANDED BY THE HOTEL, RESTAURANT, AND PIE FACTORY

The dining room or lunch counter in the hotel uses essentially the same apple as does the restaurant or cafe, and, for that reason, the demands of these two food dispensing agencies will be considered together. The majority of the apples eaten in public dining rooms are baked. It was learned from a group of purchasing agents representing institutions which serve more than 30,000 meals per day that about one out of every thirty persons who enter a public dining room during the apple season,

**The apple demanded
by the hotel and
restaurant**

October to April, eats a baked apple. All of these representatives stressed the need for uniformity in a baking apple.

To use the words of one of the buyers, "The apples we bake must all be of the same size, the same grade, the same variety, and the same degree of ripeness. In addition, we must be able to obtain the same apple day after day."

These men explained that many customers eat baked apples regularly, and that they expect and demand a uniform product. The chef learns how much sugar a given variety requires; he learns just what temperature to use, and just how long the fruit must be left in the oven. A change of variety will make necessary a change of procedure, and the resulting product will lack the uniformity so essential to maintaining and increasing demand. Boxed Jonathan, Spitzenburg, Rome Beauty, and Winesap are some of the varieties commonly used for this purpose. Most chefs prefer size 100 or slightly larger.

Many large hotels and chain restaurants bake their own apple pies. For use in pies, sauce, and salads, the hotel and restaurant demand apples of at least reasonably large size and good grade. They are not always particular about color, but they do prefer standard varieties. They believe that there is less waste in preparing a large apple and place emphasis on the importance of size. They usually obtain their apple supplies from produce dealers who can supply them on short notice with the sizes, grades, and varieties preferred. Large sizes of such varieties as Baldwin, Rhode Island Greening, Jonathan, Stark, and Hubbardston find their way into hotel and restaurant kitchens.

Most of the purchasing agents who were consulted said that though they would be glad to buy Michigan apples they must have large sizes, uniformity of grade, and a continuous supply. They further stated that, since Michigan apples as ordinarily available now fulfill but few of these specifications, they are forced to obtain the majority of their supplies from out of the State. These special needs, coupled with the fact that these institutions also require other special services, such as storage and quick delivery, make it unlikely that individual Michigan orchards will soon be a very important source of apple supplies insofar as the hotel and restaurant trade is concerned. Though the individual can do little, the large and capable growers' organization should find this outlet desirable and profitable. Color requirements are not high and the demand is continuous and can be predicted with reasonable accuracy. When the right product is obtainable, the hotel and restaurant trade does not hesitate to pay good prices. It is to be regretted that, because of a lack of large grower organizations, this outlet is practically closed to Michigan producers.

The grower or dealer who thinks that odd varieties, under grade, and other nondescript stock can be disposed of to the pie baker is mistaken. The pie factory apple must possess certain very definite characteristics and it is useless to try to sell to bakers apples which do not meet their requirements. Definite statements as to their needs were obtained from several Detroit bakers who together use annually upwards of 225,000 bushels of apples in pies and mince meat. A brief statement regarding the apple requirements of these factories may help us to understand why more than 90 per cent of the apples used by them come from out of the state.

In the first place, they require a large apple. Exhaustive tests have

**The apple demanded
by the pie factory**

proved conclusively that not only can large apples be handled more quickly and easily, but that the yield of sliced apples per bushel of unprepared fruit is much greater when the large sizes are used. Under these conditions, it is only natural that the pie factories should much prefer apples of the size which best suits their needs. The ideal size is two and three-fourths to three inches. Furthermore, they require an apple of normal shape. Most of the fruit is peeled by machinery, and apples of irregular shape require special attention which slows down and makes the operation more expensive.

Not all varieties are suitable for pies and, in changing even from one to another good variety, the recipe must be changed. The ideal formula can be found only after repeated trials, and trials which result in inferior pies cause dissatisfaction and monetary losses. Northern Spy, Baldwin, Greening, and Wagener are among those favored.

When it comes to grades, preferences differ. Some companies buy fruit "orchard run, with small and irregular apples out." This is later sorted into grades as required. Others prefer to buy Commercial, B, and A grade fruit in almost equal quantities. The Commercial grade is utilized in the fall, the B grade fruit in the winter, and the A grade in the spring.

A large pie factory often uses from 25,000 to 100,000 bushels of apples in a single season, and the task of assembling the supply is much simplified when it can be obtained from the fewest possible sources. If, in assembling 50,000 bushels of apples, it is possible to obtain only 500 bushels from any one individual, the task becomes complicated. One hundred different transactions must be made and, if the sources of supply are widely separated, as they are almost sure to be, much travel and correspondence will be necessary. Not only this, but the supply when finally assembled will lack the uniformity which pie factories count so essential. In other words, pie bakers like to deal with individuals or organizations which can supply them with 10,000 or more bushels of standardized, uniform fruit that meets certain definite specifications.

All of the buyers interviewed said that until comparatively recently when their own standards became higher, they obtained most of their apples from Michigan growers. They also said that, as Michigan apples were inclined to be small, the list of varieties offered for sale long, and the volume obtainable from any one individual limited, most of their supplies now come from out of the State. One purchasing agent told of having recently gone on a tour of the State for the purpose of buying apples. Although 122 orchards were visited, he found only two or three growers who had for sale exactly what he wanted in sufficient volume to interest him. He further stated that he hesitated to deal with Michigan growers because of their unreliability. He gave as an example a grower who accepted a deposit and agreed to ship certain varieties, orchard run with ciders and irregulars out. When received, it was found that the A-grade fruit had also been removed.

The grower defended himself by saying, "Peelers and B grade apples are good enough for pies."

Another car of Michigan apples was purchased over the telephone from a grower who was thought to be reliable. In describing the fruit, he stated that though he did not recall how many varieties were in the

car, he was sure that the lot would be ideal for pies. When the car was received, it was found to contain 22 varieties, with an utter lack of uniformity as to either size or grade. Another grower who sold his apples to the pie factory poured them from the picking bags to crates, and from crates to open bins in his barn. The apples were later shoveled into crates for a second time, hauled to the car, and loaded in bulk.

To use the words of the buyer, "This fruit had begun to resemble mince meat when it reached us. Can you blame me for losing faith in Michigan growers?"

8. WHAT THE INDEPENDENT RETAILER DEMANDS

Retailers sell to consumers; sales are easier when they have in stock what consumers want. It follows that for a description of what the retailer wants, we have only to turn back to the discussion of ultimate consumer demand. Under that heading, it was said that the consumer wanted reasonably priced apples which were of good quality, red color, large size, free from bruises, of good variety, and free from insect injuries. The retailer not only wants this sort of an apple, but he imposes certain other conditions which we will now consider.

Most apple consumers expect the clerk in filling their orders to give them the best apples visible in the package from which he is filling their order and even to go down into the package and select superior specimens. Boxed apples are usually comparatively uniform, but many bushel packages contain specimens which are bruised or deficient in size or color. If, in filling orders, from bushel apples, the better fruit is always selected, these inferior specimens will remain and, while the fruit may have looked well to start with, that left in the bottom of the basket after a number of sales have been made will be much less attractive. When the best specimens were always selected from fruit of "commercial" grade, the observer found that it was necessary to place the fruit remaining in the bottoms of nearly empty baskets into the cider barrel. Fruit reclassified or lost in this way often amounted to as much as 10 per cent of the total.

Most customers either point to the apple selected or ask for a cooking or eating apple. If the retailer has in stock one or two varieties of cooking apples and two or three varieties of eating apples, he is prepared to supply all but the most exacting of his customers. A large stock will require a greater investment and, when many packages are opened and displayed, the losses from shrinkage are greater and the job of selling is made more difficult. With many varieties from which to choose, customers will ask more questions, take longer to come to a decision, and in the end be no better satisfied than if the choice had been quickly made from a few varieties. For these and other reasons, the retailer is usually anxious to keep down to the minimum the number of varieties stocked.

Retailers demand uniformity within the package

Retailers prefer to stock the minimum number of varieties

The retailer is a busy man, and he much prefers to stock apples which require the minimum amount of handling. The package which can be opened and placed in the apple display as it is, is much more desirable than the package from which the apples must be removed, sorted, wiped, and arranged in bins or other containers. Displays and bins from which sales are made must be continually replenished and arranged. This takes time, costs money, and is at best not very desirable. Apples which come to the retail store, packed in standard apple boxes, will almost sell themselves, if the merchant will but remove the lid, unwrap the top layer, and place the package where it can be seen. The ease with which boxes may be displayed and replaced makes this package very popular. The tub bushels, provided it contains a uniformly high quality apple, is, on the whole, a good package, and though not as popular as the box, it is not heavily discounted by most retailers.

**Retailers prefer
convenient packages**

A good many apples are sold across the counters of small fruit stores located in the business districts of cities, by push-cart men, by soda fountains, and by cigar stores. Practically all of these apples are sold by count, and any grower or organization which expects to cater to this class of trade must mark upon each package the number of apples which it contains.

**Retailers like to
know the number
of apples which a
package contains**

When apples are sold by the pound, the number per box or bushel is not so important.

It has been pointed out that in asking for apples many consumers say, "Like I had before." Still others who ask for "eating" or "cooking" apples, expect to receive the same sorts which they received on previous occasions when their wants were stated in the same terms. Those familiar with variety names ask for the same variety repeatedly, so, everything considered, practically all customers buy the same varieties and grades time after time. It is possible to turn most buyers from one good apple to another good one but, in so doing, it is necessary for the clerk to explain repeatedly the change and the reason for making it. At best, a few customers are sure to leave the store without buying.

**Retailers demand
continuous supply**

They may say, "I have used Jonathan for a long time, the children like them, and I know just how to cook them, so I will try to find that variety at some other store."

Each change from one variety to another means that many explanations must be made, some dissatisfaction engendered, and at least a few customers lost. It is not hard to see why retailers prefer to change from one variety to another only when absolutely necessary.

9. WHAT THE CHAIN STORE DEMANDS

At the present time, approximately one-third of the grocery stores in Detroit belong to chain organizations. On the average, the chain store is somewhat larger and does a greater volume of business than does the independent store. In view of this fact, it is not unreasonable to assume that at least one-half of the produce unloaded at Detroit reaches the consumer through the medium of the chain store. Demands made by chain stores are similar to those of independent retail stores but, their methods of operation make necessary certain additional requirements.

The records kept by a chain store organization are, at best, involved. Unless all produce handled is strictly standardized as to grade, variety, price, and package, the labor of keeping the necessary records is materially increased. All produce must pass through a warehouse, be checked and rechecked and the handling of standardized produce results in a great saving of time, money, and effort. Not only is standardization desirable from the standpoint of the general office and the warehouse, but the housewife expects and demands the same product from one unit of a chain store that her neighbor obtained at another unit located perhaps several blocks away. If fruit is to be of the same grade, variety, and pack day after day, it is obvious that the chain store must deal with an individual or organization which can supply large volumes of uniform produce. With this in mind, it is not hard to understand why it is so difficult for the grower, with perhaps one or two cars of a given grade and variety, to deal with a chain organization which is in the market for perhaps 50 or more cars of the product which he has to offer. Not only do the chain stores demand many cars, but they much prefer "straight cars," cars containing but one variety and one grade. The inability of Michigan growers or fruit exchanges to offer "straight cars" of apples has prevented the consummation of many transactions with chain store representatives. Chain store success is built around, and made possible by, the handling of standardized goods. Apple growers and dealers who desire a part of the chain store business must accept that fact.

Chain stores demand standardization

10. WHAT THE PRODUCE DEALER DEMANDS

The produce dealer demands from the grower that which the retailer will buy, nothing more. It may be added that he demands nothing less, and we have already seen that consumer demand, plus the conditions imposed by retailers, defined the desirable apple within rather narrow limits. Mention was made of the fact that the retail merchant prefers a package which can be easily handled and readily incorporated into his display. The produce dealer also wants a convenient and durable package for a slightly different reason. Handling as he does many thousands of

Produce dealers demand apples which retailers will buy

packages, the dealer much prefers packages that will stand considerable handling. He also prefers a package that can be quickly and easily stacked in the minimum amount of space.

The produce dealer, like the chain store, much prefers straight cars. It is much easier for the dealer to figure proceeds and prices on straight cars. The task of selling is also simplified. Each package sells at the same price, and it is not necessary to close out small odd lots at reduced figures. Neither is it necessary to seek out buyers with special needs to take lots which are not suited to general use.

11. HOW NEARLY DOES THE MICHIGAN APPLE MEET THE REQUIREMENTS OF THE MICHIGAN MARKET

Let us see how the Michigan apple measures up to the requirements of the Michigan consumer.

In checking a list of varieties which sell readily in Michigan markets (Figure 4) with a second list showing the varietal composition of the average Michigan orchard,¹ it is found that the average Michigan orchard is composed of varieties less than half of which are readily salable in Michigan markets or, for that matter, in any market. The discouraging thing is that growers are still planting inferior varieties. The writer talked with a grower who was planting a rather large block of trees of a little known variety of doubtful quality. This man said that he had a few mature trees of this variety and that for several years the buyer to whom he usually sells had not only taken the fruit without question but had expressed a preference for it. The buyer probably had a special outlet for a limited quantity of this fruit. By the time the new planting comes into bearing, it is probable that this special market will have been lost and that another outlet for the considerable volume which will be produced will be very difficult to find. Growers should remember that, while odd varieties are sometimes readily salable in special markets, there are a few varieties which satisfy practically all demands, and sell well in all markets.

The astonishing discrepancy between variety supply and variety demand is regrettable but that is not all. It has been pointed out that more than half of the apples consumed in Detroit, Michigan's largest apple market, are box packed. The busheled apple appeals then, to less than half the population of that city and more than 68 per cent of those who buy busheled apples demand an A grade apple or better. In the face of this demand for a quality pack, more than half of the Michigan crop is packed out as Commercial grade. In a study of low grade fruit,² it was found that, in the average year, only 56 per cent of the apples packed by co-operative organizations meet the requirements of the A grade. The net result is that only a small part of Michigan apples is packed as the majority of consumers like to buy them. A large portion of the apples used in Michigan move into consumption through the medium of the chain store. These organizations insist

¹Gardner, V. R. Varieties and Location as Factors in Apple Production. Mich. Agr. Exp. Sta. Sp. Bul. 161. 1927.

²Gaston, H. P. Why a Cull Apple is a Cull. Mich. Agr. Exp. Sta. Sp. Bul. 160. 1927.

on being able to obtain a few standard varieties in large volume. At the present time, there is no individual or organization in the state that can meet this demand. As a result, less than 10 per cent of the apples sold by chain stores to Michigan consumers are Michigan grown.

Next to quality the Michigan consumer requires color and size. It is estimated that in the average year only about 25 per cent, certainly not more than 30 per cent, of Michigan's commercial crop is so grown and packed that it meets the specifications of the A grade. Packing house records show that a large percentage of the fruit placed in the lower grades goes there because it is deficient in either color or size. Other things might be done to make the Michigan apple more attractive to consumers but, if growers could and would alter cultural practices so as to increase the size and color of the fruit now placed on the market, the ultimate Michigan consumer would be reasonably well satisfied with the Michigan product.

Moreover, the grower must satisfy the retailer as well as the consumer and the retailer demands:

1. Uniformly graded apples
2. Few varieties
3. Convenient packages
4. In some instances, packages marked with the number of fruits contained.
5. A change from one variety to another only when absolutely necessary.

The Michigan pack is more or less deficient in all of these respects. The Michigan variety list is long. The tub bushel is without doubt the best package in common use in Michigan, but only a small part of the Michigan crop is now packed in this container though its use is becoming more common. The practice of stamping on each package the approximate number of apples contained is at present unknown in Michigan. The large number of varieties marketed by the Michigan grower makes it hard for the retailer to concentrate on only a few with the minimum number of changes, because the volume of any one variety is limited.

In a word, at least 75 per cent of the Michigan consumers demand is for a product which only a small percentage of Michigan growers are producing, packing, and marketing. The per cent of Michigan consumers who will buy the sort of apples which most Michigan growers produce is small and the inevitable results are that many locally sold apples return little profit to the grower and that more than half the crop must be moved to out of State markets to be sold at anything like fair and equitable prices. It is still possible to sell many Michigan apples outside of the State but the standards of quality are constantly being raised in all markets and, in the not far distant future, Michigan growers are going to find it necessary to adjust their production program to a changed consumers' demand. The question is, what is to be done?

12. THINGS WHICH WOULD HELP MICHIGAN PRODUCERS TO BETTER MEET THE DEMANDS OF THE MICHIGAN MARKET

It has often been said in fruit growers meetings, farm papers, and the daily press that an advertising campaign which would increase the consumption of apples would solve many of the problems of Michigan growers. Not only would such a campaign be costly and difficult to organize but from the standpoint of Michigan producers the results obtained would almost certainly be very disappointing. The difficulty is not so much that people are not eating enough apples; it is rather that the apples they are eating are not Michigan grown. As things now stand a campaign which would increase consumption would be very likely to increase the consumption of fancy, standardized apples at the expense of the less uniform Michigan pack.

In discussing the advisability of apple advertising with an officer of many years advertising experience in a large wholesale grocery concern he said, "In advertising, a low price may draw trade to a store but when once there the trade usually buys a quality product."

He went on to say that his firm was often called upon to supply a retail store with a few bushels of A grade along with a larger order of fancy western apples. According to this executive, this often means that while the store is going to advertise an A grade apple, or perhaps even a B grade, they expect to sell for the most part a fancy apple. The results of large scale advertising would probably be much the same as those obtained by the individual store. The fact is that broadly speaking at the present time Michigan does not produce the kind of apple that it pays to advertise. The man who buys a car of Michigan A grade Northern Spy apples on November 10th, is likely to find it difficult or impossible to obtain a second and third car of the same grade and similar pack two or three weeks later. Well directed advertising campaigns are never launched until steps have first been taken to make the advertised product readily available when demand is created. Michigan growers need not concern themselves about advertising until they are prepared to supply a standardized apple in large volume.

The only practical way of bringing about real standardization is through grower organizations. Such organizations have enabled growers in the northwest to produce a high quality apple, to maintain uniformity of package and of the fruit within the package, and at the same time to supply standard varieties in large volume. Quality and standardization are not only desirable but absolutely essential to success. Standardization has for a long time been the corner stone of industry. Agricultural enterprises can not attain any large measure of success without strict attention to this fundamental principle.

The claim has often been made that the Michigan apple industry is suffering from overproduction and that for this reason it is almost useless for growers to expect to better their positions by organization or the employment of better methods. At the present time, Michigan consumers eat more apples than Michigan growers produce and they will probably continue to do so for some time to come. Under these

conditions, it is not necessary to give serious consideration to the over-production claim. Paradoxical as it may seem, the marketing problem of the Michigan grower would probably be simplified if production were double or even treble what it now is if that production were of standardized, high quality, high grade goods. Increasing the volume of well packed desirable varieties would make it easier to assemble a quantity of standardized fruit. Under these conditions, organizations would probably be formed, it would become possible to market through chain stores, to deal with pie bakers and other receivers who can now get the volume and standardization required only by going to out of State sources of supply. In other words, Michigan is probably suffering more from under production than from over production. Perhaps, more accurately, she is suffering both from under production of a superior standardized product and over production of an inferior unstandardized product.

The evidence all points to the conclusion that the marketing of the Michigan apple is essentially a production problem, a matter of eliminating all but the best varieties, growing a better apple, standardizing the pack, and organizing in such a way that it will be possible to supply straight cars in large volume.

SUMMARY

1. About 11 per cent of Detroit's total apple supply comes in by truck, principally from Michigan orchards and approximately 10 per cent of the car-lot unloads in that city are Michigan grown. The remainder, amounting to about 1,200,000 bushels annually, is shipped in from other states, principally Washington and New York.

2. The proportion of Michigan grown apples consumed outside the Detroit area is somewhat larger.

3. Fully half of Michigan's commercial apple crop is shipped to points outside the state.

4. Over half of the total car-lot unloads of apples in Detroit are packed in boxes; most of the remainder are packed in bushel baskets. The tub bushel is rapidly gaining ascendancy over the round-bottom basket. The barrel has almost disappeared from the market.

5. The demand for A grade or still better fruit has grown rapidly until now only about 20 per cent of the total demand, in Detroit at least, is for a B grade or "commercial" grade product.

6. Coincident with the demand for better grades is a demand for only a few varieties that are of high quality and suitable for both eating out of hand and cooking.

7. Ninety per cent of retail apple sales are made to women or to those who are purchasing for women.

8. Ninety per cent of retail apple sales are made to regular customers and therefore represent repeat orders.

9. The percentage of buyers who know variety names is small and most customers describe the fruit wanted in such general terms as "eating" or "cooking" apples. More than half of the apples bought are for eating out of hand.

10. The factors that influence apple sales to consumers are, in the order of their importance, quality, color, size, price, freedom from bruises, variety, and freedom from insect injury.

11. The apple for which there is the greatest demand is from two and one-half to two and three-fourths inches in diameter. Regardless of variety, quality, color or freedom from blemishes, there is little demand for an apple under two and one-fourth inches in diameter.

12. The most common monetary unit of sale is 25 cents. Where the price to the consumer rises above three pounds for a quarter, sales fall off rapidly.

13. Dealers of all kinds, in addition to demanding the type of fruit the consumer calls for, insist on convenient packages (preferably boxes or tub bushel baskets), good packing and above all, uniformity within the package.

14. The larger dealers, those purchasing for pie bakeries and restaurants and the chain store buyers insist on being able to obtain a continuous supply week after week of single grades of single varieties. Their trade is based on a strictly standardized product.

15. Much of this demand can be met by Michigan growers only by pooling their product and selling through co-operative organizations.

SUPPLEMENT

TABLE I.—CAR LOT UNLOADS OF APPLES AT DETROIT, BY STATE OF ORIGIN—1918 to 1929

State	1 1918 Cars	1 1919 Cars	1 1920 Cars	1 1921 Cars	1 1922 Cars	2 1923 Cars	3 1924 Cars	2 1925 Cars	2 1926 Cars	3 1927 Cars	3 1928 Cars	3 1929 Cars	4-year average 1926-1929 Per cent
Washington.....	114	332	373	458	496	623	533	764	891	673	1,105	1,172	43.5
New York.....	159	264	143	185	314	297	318	258	400	338	290	207	14.0
Michigan.....	151	343	255	300	352	605	185	607	297	117	154	339	10.3
Idaho.....	12	56	24	38	30	60	31	153	101	217	133	185	7.2
Illinois.....	37	89	10	1	20	36	36	120	85	66	159	106	4.7
Delaware.....	7	42	25	8	89	55	66	151	85	106	68	92	4.0
Oregon.....	2	10	19	8	21	58	1	4	75	31	100	43	2.8
Virginia.....	31	38	4					5	2	71	66	77	2.4
California.....	1	13	6	11	36	43	42	3	57	17	79	49	2.3
New Jersey.....								7	1	75	3	56	1.5
W. Virginia.....	16	19	7			2		5	10	26	36	35	1.2
Pennsylvania.....		18	3					3	8	32	15	19	.8
Maryland.....	2	1						3	3	18	17	33	.8
Ohio.....	14	11		1			2	3	32	6	12	5	.6
Indiana.....			2	1			2	5	3	2	18	8	.4
Tennessee.....	39		18		31	1	11	2	17	2	5	5	.3
Missouri.....	14	24	6	1	1			11	3	3	12	9	.3
Imports.....		10	4	57					1	1		24	.3
Wisconsin.....									2	4		14	.2
Arkansas.....		154			1		6	5	2	1	3	9	.2
New Mexico.....			1					1			2	10	.1
Colorado.....	1	8						7		5		1	.1
Kansas.....												6	.1
All Others.....	72	83	58	11	9	2	1	9	11	13	138	23	1.9
Total.....	673	1,515	963	1,080	1,402	1,782	1,234	2,126	2,086	1,824	2,415	2,527	100.0

1. Adapted from Table 10, Statistical Bulletin 7, U. S. Department of Agriculture, 1925.

2. Adapted from Table 30, Statistical Bulletin 23, U. S. Department of Agriculture, 1928.

3. Figures from U. S. Department of Agriculture, Bureau of Agriculture Economics Mimeograph entitled "Unloads of Fruits and Vegetables in Detroit."

TABLE 2.—CAR LOT UNLOADS AND ESTIMATED LOCAL RECEIPTS OF APPLES AT DETROIT
BY CROP SEASON

Year	Car-lot unloads	Estimated motor truck and small-lot receipts	
	Bushels ²	Bushels	Per cent
1926 ¹	1,250,100	138,900	10
1928 ³	1,566,800 ³	201,000 ⁴	11

1. Adapted from Table 2, Circular 91, U. S. Department of Agriculture, 1929. (Park J. W.—Market Supplies and Prices of Apples.)

2. Car lots from eastern and mid-western sections were considered to contain 525 bushels; from the Northwest, 757 bushels; from Colorado and Utah, 630 bushels; from California, 700 bushels.

3. Based on analysis of 63% of Car-lot unloads.

4. Based on opinions of dealers and observations of receipts at producers' markets.

TABLE 3.—RELATIVE IMPORTANCE OF VARIOUS APPLE CONTAINERS IN THE DETROIT MARKET

Year	Percentage of supply in various containers						
	Boxes	Barrels	Tub Bushels	Bushel Baskets	Miscel- laneous ⁴	Bulk	Total
1926 ¹	55%	6%		29% ²	7%	3%	100%
1928 ³	56%	1%	23%	12%	6%	2%	100%

1. Adapted from Table 52, Circular 91, U. S. Department of Agriculture, 1929. (Park J. W.—Market Supplies and Prices of Apples.)

2. Includes both tub and round bottom bushel baskets.

3. Based on sample consisting of 63 per cent of car-lot receipts, and observations of motor truck receipts.

4. Mostly Bushel crates.

TABLE 4.—RELATIVE IMPORTANCE OF VARIETIES IN CAR-LOT SUPPLIES OF APPLES AT DETROIT

Variety	Percentage of total car-lot supplies		
	1926 ¹	1928 ²	Average 1926-1928
	Per cent	Per cent	Per cent
Jonathan.....	24.4	22.0	23.2
Wine Sap.....	22.7	16.7	19.7
Rome Beauty.....	7.0	13.9	10.5
Greening.....	9.7	8.4	9.1
Delicious.....	4.9	9.2	7.1
Yellow Transparent.....	3.6	5.1	4.3
Gravenstein.....	3.7	4.4	4.1
Baldwin.....	6.4	1.6	4.0
Wealthy.....	1.7	3.7	2.7
*Williams.....	4.6	.6	2.6
Oldenburg (Duchess).....	2.1	3.0	2.5
Northern Spy.....	2.1	1.1	1.6
Stayman Winesap.....	1.7	1.5	1.6
Grimes Golden.....	.9	.1	.5
McIntosh.....	.7	.3	.5
York Imperial.....	.1	1.0	.5
Wolf River.....	.0	1.0	.5
Ben Davis.....	.4	.4	.4
Esopus Spitzenburg.....	.2	.7	.4
Yellow Newtown.....	.6	.1	.3
Stark.....	.5	.1	.3
Arkansas.....	.1	.3	.2
All Others.....	1.9	4.8	3.4
	100.0	100.0	100.0

Adapted from Table 23, Circular 91, U. S. Department of Agriculture, 1929. (Park J. W.—Market Supplies and Prices of Apples).

2. Based on sample consisting of 63 per cent of car-lot receipts.

*As Williams is not an important commercial variety in this section it is probable that one or more other varieties are being marketed under this name.

TABLE 5.—DISPOSITION OF MICHIGAN'S COMMERCIAL APPLE CROP
Four-Season Average 1926-1929

	Bushels	Per cent
Shipments by rail to points in Michigan.....	381,325	12
Shipments by rail to points outside of Michigan ¹	1,299,287	40
All Others (Shipments by truck) ²	1,605,138	48
Commercial Crop (Total).....	3,285,750	100

Adapted from "Marketing Michigan Apples, Summary of 1929 Season, by R. H. Shoemaker. Market News Service on Fruits and Vegetables, U. S. Dept. Agr. and Mich. Dept. Agr. Cooperating, Washington, D. C., June, 1930.

In reducing barrel to bushels, it was assumed that one barrel contained three bushels. In reducing car lots to bushels, it was assumed that each car contained 516 bushels.

1. Obtained by subtracting shipments by rail to points in Michigan from total shipments by rail.

2. Obtained by subtracting total shipments by rail from total commercial crop.

TABLE 6.—PER CENT OF TOTAL CAR-LOT UNLOADS AT DETROIT ORIGINATING IN MICHIGAN
AND IN WASHINGTON AND OREGON, 1918-1929

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
Washington and Oregon.....	17.2	22.6	40.7	43.1	36.9	38.2	43.3	36.1	46.3	38.6	49.9	48.1
Michigan.....	22.4	22.6	26.5	27.8	25.0	33.9	15.0	28.5	14.2	6.4	6.4	13.4

Based on Table 1 of the Supplement.