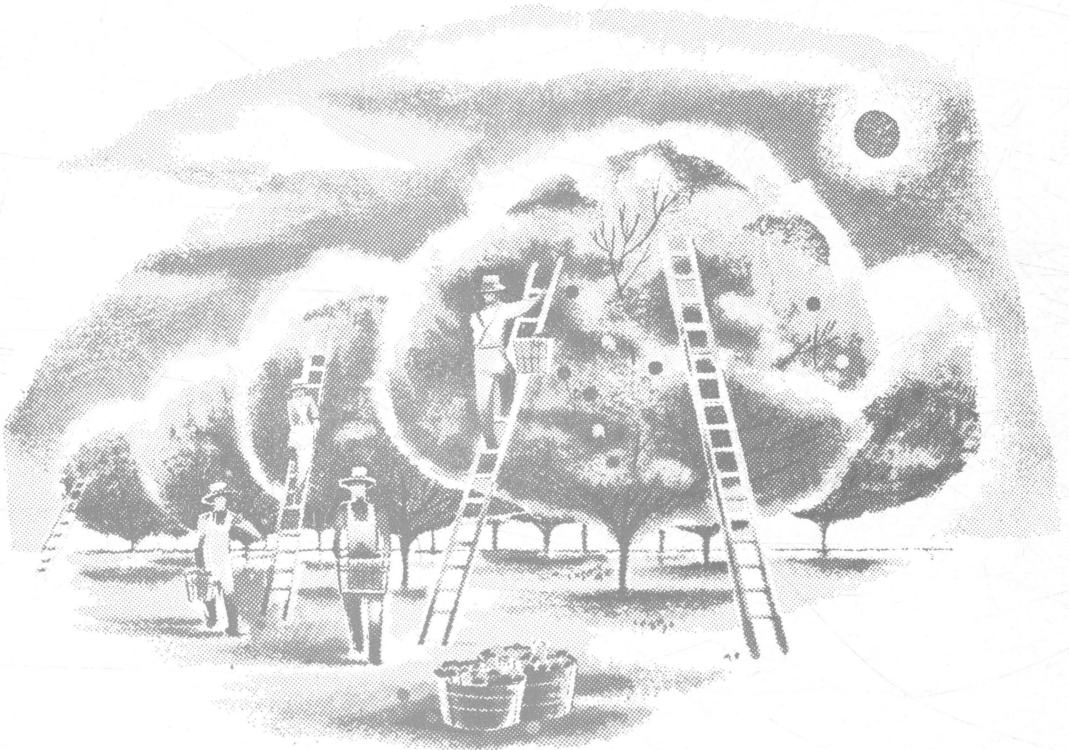


FRUIT VARIETIES *for* OHIO



C. W. Ellenwood F. S. Howlett W. P. Judkins

OHIO AGRICULTURAL EXPERIMENT STATION
WOOSTER, OHIO

CONTENTS

* * * * *

Introduction	3
Factors That Influence Choice of Varieties	3
Experiment Station Variety Trials	4
Planting the Orchard	5
Orchard Site	5
Orchard Soil	5
Time of Planting	6
Planting Plan	6
Contour Planting	8
Laying Out the Orchard	9
The Planting Board	10
Planting Distances	11
Planting Distances in Relation to the Limitation of the Age of Apple Orchards	12
Apples	13
Recommended Varieties	14
Winter Varieties	15
Varieties of Minor Importance	20
Newer Varieties	22
Crab Apples	24
Pears	25
Peaches	34
Nectarines	42
Apricots	42
Cherries	43
Plums	46
Grapes	48
Seedless Grapes	50
Strawberries	50
Raspberries	54
Blackberries	56
Boysenberries, Dewberries and Other Trailing Brambles	56
Currants and Gooseberries	57
Blueberries	57

FRUIT VARIETIES FOR OHIO

Descriptions of Recommended and New Varieties, with Planting Directions

**C. W. Ellenwood, Freeman S. Howlett, Wesley P. Judkins,¹
and Robert G. Hill, jr.**

INTRODUCTION

More attention has been given to varieties than to any other phase of fruit growing. Selection for any given location or condition remains a serious and difficult matter. Several years of observation are required to evaluate properly the merit of a variety. These and other reasons make it necessary to continue variety trials by experiment stations.

Comments on the varieties discussed in this bulletin are based mainly on their behavior in the Ohio Agricultural Experiment Station orchards located at Wooster and several county farms. In most instances, however, the conclusions reached have been influenced by performance in commercial orchards.

Within recent years, many new varieties of most of the more important kinds of fruit have been introduced. An increasing number of these new varieties are the results of breeding work at Experiment Stations. In other instances, varieties have originated as bud sports of well-established varieties. Some of these new varieties have proved their value and have been included in the list recommended for planting. Others still are under observation.

FACTORS THAT INFLUENCE CHOICE OF VARIETIES

Changing demands of the market influence the choice of varieties for commercial planting. Color prejudice against a variety may seriously affect its acceptance by large numbers of consumers. Grimes Golden and Rhode Island Greening are examples of formerly leading commercial apple varieties that have met serious sales resistance in recent years. On the other hand, such varieties as Cortland and Turley

¹Wesley P. Judkins, formerly Associate Horticulturist, prepared the comments on stone fruits and small fruits.

and the red strains of a number of the standard apple varieties, as well as several new varieties of the stone fruits, have been well received by the trade and give promise of being valuable additions to the commercial list.

The susceptibility of certain varieties of fruits to disease and insect damage is a factor that influences the selection of varieties. The relationship between varieties so far as pollination is concerned is still another factor bearing on the choice of the proper varieties for any given situation.

Requirements of different varieties as to pruning, spraying, fertilizer treatment, and thinning are not fully understood, but it is well known that all these practices have to be adjusted to meet varietal characteristics.

High average annual yields per tree are essential, and growers should investigate carefully the possible production of varieties to be included in commercial plantings. Early bearing is generally desirable in all tree fruits, but equally important is the possible capacity of the tree to bear large crops once it has reached maturity. Yield and date of bloom records of a large number of apple varieties growing in the Station orchards over a long period of years have been published (2). Such data for peaches (6) have also been reported.

EXPERIMENT STATION VARIETY TRIALS

First orchards, small-fruit plantings, and vineyards, planted by the Experiment Station in 1893 were designed for variety trials. In recent years, more emphasis has been placed on other phases of experimental work. However, the number of varieties growing at the Station is still large; over 200 varieties of apples and several thousand seedlings are under observation. Most of the other fruits are represented by proportionately large numbers.

Varieties found not adapted to Ohio conditions are being eliminated each year, and new ones are being added as they become available. Certain varieties of high quality that have been eliminated from the nursery trade because of short-comings that keep them from being profitable are preserved in the Station orchards and serve as a source of propagating wood. Trees of many of the newer sorts growing in the Station orchards but not generally cataloged by nurserymen also serve as a source of scions or budwood for both nurserymen and fruit growers. Thousands of bud sticks and scions are cut annually from the Station orchards. The large number of varieties grown in these orchards serve as aids in the identification of fruit sent to the Station.

PLANTING THE ORCHARD

This bulletin has been prepared mainly to supply information on the varieties of fruit for planting in Ohio. To make this information more valuable to the fruit grower, brief planting instructions are included. These planting directions are based on experience at the Station and on a knowledge of the habit of growth of the fruits.

ORCHARD SITE

The choice of a good orchard site is more important than the selection of proper varieties. Two hazards in growing tree fruits in Ohio are frost and inadequate soil moisture. Therefore, first consideration in selection of a site for tree fruits should be given to securing a location that seems reasonably immune from killing frosts during late April and early May. Usually, the highest elevation in a community is the freest from spring frosts. Topographical maps showing elevations at frequent intervals are generally available for reference in the office of the county surveyor. It is also important to study the temperature and rainfall records of the weather station nearest the proposed site. There are two regulation Weather Bureau recording thermometers at the Experiment Station: No. 1 is located near the Administration Building at an elevation of 1,050 feet; No. 2 a mile distant from No. 1 located at the edge of the Station orchards at an elevation of 1,100 feet. The maximum temperature during May when apples are in bloom averages 2 degrees lower at No. 1 weather station than at the higher elevation of No. 2 station. In this particular instance, in a rolling but not hilly section, 50 feet of elevation made a difference of 2 degrees in favor of the higher elevations. It is not suggested here that an equal difference in altitude between two locations elsewhere in the state would result in a corresponding difference in temperature. The relationship between the elevation of the orchard site and the surrounding country is more important than the elevation above sea level. Care should be taken not to locate an orchard adjacent to a woodland where the natural flow of air currents to lower levels will be impeded. Such a condition causes "frost pockets" to form and results in frequent frost injury to the fruit. Areas known to be subject to frequent hailstorms should be avoided.

ORCHARD SOIL

One of the primary considerations in choosing the location of an orchard is soil type. No one type can be classified as best even for any one fruit; however, classification of the soil types found in Ohio, with their evaluation for orchard purposes, is available (1).

The subsoil is probably more important than the surface texture of the soil in the growth and production of an orchard. If the subsoil is impervious or is composed of a hardpan, the location is not favorable, and the orchard is likely to be unsatisfactory or fail completely. Under such conditions, trees may grow well for a few years, but when the tops are large and producing fruit, they become weak; if a dry year or a severe winter occurs, the trees may die. It has been found (4) that the rooting habit of peach trees is especially responsive to different soil types and to poor drainage. A well-drained soil is essential for the success of any fruit crop in order to facilitate free exchange of gases. Poorly drained soil often can be improved by placing a line of tile between each row of trees or approximately 30 feet apart in small-fruit planting. In addition to being well-drained, orchard soil should be fairly fertile and should contain enough organic matter to facilitate porosity, penetration of rainfall, and retention of available moisture.

TIME OF PLANTING

Apples, sour cherries, pears, and the European varieties of plums can be planted either in late fall or early spring. Other fruit is generally planted in the spring.

Fall planting has certain advantages over spring planting. Frequently, the soil is in better condition. Weather conditions are generally more stable in late October or early November than in March or April, and also there are usually fewer windy days. Nursery stock is less apt to become overheated in transit during the fall than in the spring. A fall-planted tree becomes established through the winter and starts growth earlier than spring-planted trees.

When trees are planted in the spring; it is necessary to set them as early as the ground can be fitted; frequently, spring-planted trees fail to grow because of late planting. A compromise between fall and spring plantings is to purchase the trees in the fall, have them delivered, and then heel them in by completely or partially covering them with soil. This procedure insures against a delayed delivery in the spring.

Small fruits should be planted in the spring. Early planting is especially important in the case of small fruits; late March or early April is preferable.

PLANTING PLAN

The two orchard planting systems in most common use are the square or rectangular, and triangular or hexagonal plans.

The square system is the easiest to establish and is more convenient for cultivation and spraying than any other. Under this plan, the trees can be aligned in all directions. This system is better adapted to the use

of filler trees (Figure 1). The rectangular system is only a slight variation from the square plan, and in this discussion the plans are treated as one. Cross-cultivation or spraying may not be done so easily in the rectangular plan as in the true square method. Another variation from the square system is the quincunx plan (Figure 2), in which a tree is set in the center of the square or rectangle made by four permanent trees.

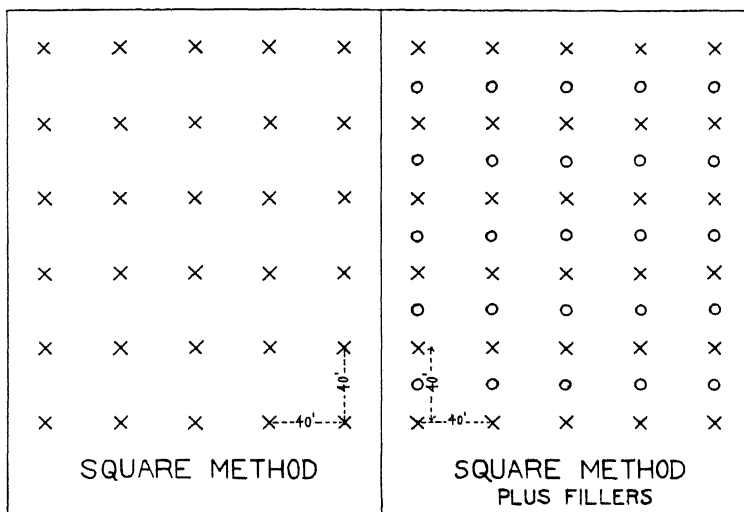


Fig. 1.—Square or rectangular planting plan

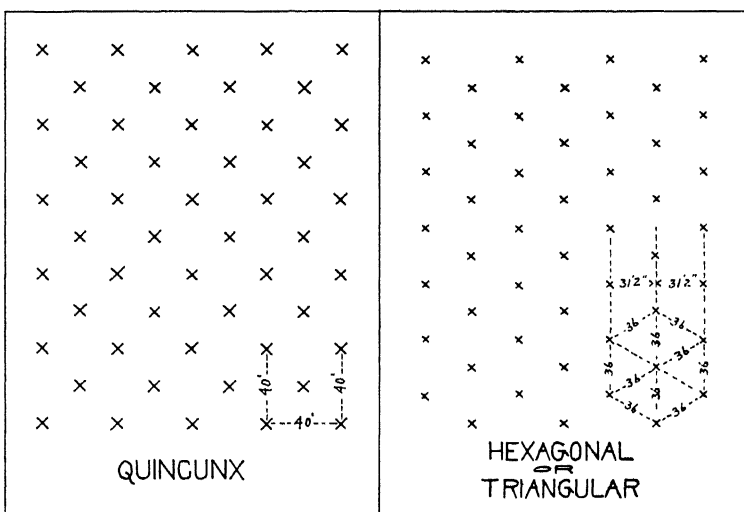


Fig. 2.—Quincunx and hexagonal or triangular planting plans

In the triangular or hexagonal system (Figure 2) the trees all stand equally distant from each other as measured from the center tree in any given hexagon in the orchard. This planting plan offers the possibility of a more equal distribution of tree tops and roots in a given area. About 15 percent more trees per acre can be planted under this plan than with the square.

A variation from the square system sometimes employed is known as the rectangular offset plan. This plan is particularly adapted for planting mixed blocks of standard and red strains of a given variety when the grower is uncertain as to the value of the red strain for his growing and market requirements. Under this plan, the trees are set in rectangles; for instance, the rows may be 35 feet apart with the trees 20 feet apart in the row. In the first row, tree A may be a standard variety, tree B a red strain of that variety; tree C would be a standard, and the alternation would continue thus throughout the row. In row 2, the planting arrangement is reversed. Tree A would be the red strain and tree B the standard variety. In 16 to 18 years, it will be necessary to remove half the trees in each row, and when the trees are set in the manner just described, the grower can use his discretion as to which variety he will leave as the permanent tree in each row, and regardless of the variety chosen, the total number of trees left will not vary greatly. This system is also adaptable for variety groupings other than the standard and red strain setup suggested here.

Another adaption of the square or rectangular system of planting is being used by a few growers in Ohio to develop what is termed a perpetual orchard plan. The original planting includes only permanent trees set at 35 or 40-foot distances. When the original planting is from 15 to 20 years old, a young tree is planted in the center of the original tree square. This plan contemplates the removal of the original trees about 30 years from the date of planting. The orchards being developed under this plan have not progressed far enough to determine the value of the plan.

CONTOUR PLANTING

In the hilly section of the state contour planting is being employed in laying out orchards. This consists of running the rows around the slope following the natural contour of the hill. In this system perfect alignment is possible in only one direction. Such an arrangement facilitates the movement of sprayers and other equipment through the orchard. The chief value in contour planting is in the conservation of soil and moisture. It is to be recommended on all sites where there is danger of erosion.

The contour levels should be established with an instrument. The tree rows can be marked by means of low ridge made by a plow. Distance between contour rows for apple trees should be not less than 28 feet. A minimum of 20 feet should be allowed between rows for cherries, peaches, plums and pears. Space between trees in the row can be in accordance with the kind and variety of fruit.

Permanent apple trees should be not less than 30 feet apart in the row. If filler trees are used in tree rows then the permanent trees should be 45 feet apart. Other fruits should not be set closer than 20 feet apart in the rows and preferably 25 feet.

Even when an orchard is to be maintained in sod contour planting is to be preferred on slopes of 10 percent or greater. Once the contour row lines are established setting the trees is more quickly accomplished than planting on the square. This is due to the fact it is not necessary to keep the trees in alignment in more than one direction.

Contour planting is as well adapted to growing small fruits as tree fruits. In hilly areas it is especially necessary to plant small fruits on the contour.

LAYING OUT THE ORCHARD

The details of the several steps necessary in laying out an orchard were concisely stated by I. P. Lewis (6) as follows:

“The laying out of the orchard is sometimes a rather difficult problem, especially on rough or rolling ground, and should be carefully done in order to get the rows as nearly straight as possible in all directions. Carefully laid-out orchards with trees well aligned are most satisfactory both in attractiveness and ease of operation. The first step is to establish a base line along one side of the field, allowing ample space between the boundaries of the field and the first tree rows. A line fence or roadway may be used as a base line, or surveyor’s instruments may be used to establish the line. Stakes are then set along this line at the proper distance for planting the first row of trees.

A carpenter’s square or right angle made of wood strips is next set on three stakes at the end of this row or new base line placing the point of the square on the end stake. One side of the square is brought in line with the base, and by sighting along the other edge of the square, a stake can be set establishing a line or row at right angles to the base line. This row is then measured off at tree distances, and stakes are set. The square is then moved to the end of this row, and the system is repeated until stakes are set on all four sides of the orchard area. If the ground is very uneven, it will also be necessary to set rows of stakes through the orchard in both directions at distances that can be readily seen. After

this guide staking is done, three men set the stakes. The first sights in one direction, the second in the other direction, and the third man sets the stakes in position as signaled by the men doing the sighting. Guide stakes should be of light color and large enough to be seen readily. The remainder of the stakes need only be large enough to establish the position of the tree. If the ground is uneven, a few long poles with the bark peeled off the top end to show white will be very useful for sighting.

“In staking an orchard for setting by the triangular or hexagonal method, a base line is established along one side as mentioned before. Then a large triangle with a ring in each corner is made of heavy wire or chain, the sides of which are the length of the planting distance desired. When two of the rings are placed over stakes on the base line, the third ring will exactly locate a tree in the second row. By using each new row as a base line, the remainder of the stakes may be set in like manner until the whole area is laid out.

“Another method used when only two men are available for the work is to prepare a wire in length equal to the exact distance the trees are to be planted apart with a loop in one end large enough to hold a small pointed stick. One man then places the end of the wire at a stake on the base line and the other, with the stick through the loop, strikes a small segment of a circle upon the ground where he thinks the stake should go. The wire is then held to the next stake in the row, and a second segment struck crossing the first. Where these two segments cross is the location of a tree in the second row. Likewise the succeeding trees and rows are established.

THE PLANTING BOARD

“No matter how carefully aligned the stakes may be, a planting board should be used when digging the tree holes and in planting, to insure the trees' being located exactly where the stakes stood. This board is about 4 feet long and 6 inches wide. A V-shaped notch is sawed in the center of each end. Then, in the center of the board and exactly midway between the notches in the ends, a hole is bored with an auger or large bit, and in turn, from one of the outer edges of the board and exactly opposite the hole in the center, a section of wood is sawed out between the hole and the outer edge, leaving a slot extending from the margin to the center of the board.

“Before beginning to dig a hole for a tree, place the planting board on the ground with the stake marking the location of the tree in the slot exactly where the auger hole was bored. Next drive two short wooden pegs in the ground closely in the V-shaped notches in the ends of the

board. The planting board then may be removed, and the hole dug. The planting board is then readjusted in its former position with the pegs engaged in the V-shaped angles at the ends. A few shovelfuls of the fine topsoil are thrown in the bottom of the hole, and the tree is placed with its stem in the slot at the center of the board and the roots well spread out. The roots are shifted one way or another until the body of the tree stands in a perpendicular position exactly where the stake formerly stood. The top of the tree should be inclined towards the windward direction. A few shovelfuls of fine soil then may be worked in beneath, among, and around the roots, and the planting board can be removed."

PLANTING DISTANCES

Proper planting distances are determined by fertility of the soil, growing habits of the variety, whether fillers are to be used and if so, in what manner, and to some extent by the cultural and pruning practices which are to be followed. Convenience of handling such tools as sprayers, tractors, and cultivators in an orchard also should be considered in establishing the distances.

The varieties included in an orchard also modify planting distances. The Wealthy, being a relatively small tree, requires less space than a variety like Northern Spy which develops into a very large tree. Trees on fertile soil attain greater size than those on the less fertile soil frequently found in the hilly country.

The following distances are recommended for permanent planting:

Fruit	Feet
Apple	30 to 45
Pears (standard)	20 to 25
Pears (dwarf)	10 to 15
Peaches	20 to 25
Plums	20 to 25
Cherries (sour)	20 to 25
Cherries (sweet)	25 to 30

Small Fruits	Between Rows	In the Rows
	feet	feet
Strawberry	3 ½—4 ½	1 ½
Black Raspberry	6 —8	2
Red Raspberry	6 —8	2 ½
Purple Raspberry	6 —9	2 ½
Blackberry	7 —10	3
Blueberry	6 —10	5
Grape	9 —10	7—9
Currants	6 —8	5
Gooseberry	6 —10	5
Elderberry	9 —10	8—9
Boysenberry	8 —10	4

To find the number of trees or plants required to plant an acre under the square or rectangular plan, multiply the distances of each side in feet and divide the product into 43,560 (square feet in 1 acre).

TABLE 1.—Number of trees or plants required to plant an acre

Planting distance feet	Square or rectangular method	Triangular method	Planting distance feet	Square or rectangular method	Triangular method
1 by 4	10,890		20 by 20	108	124
1 ½ by 3 ½	8,300		22 by 22	90	104
3 by 8	1,815		25 by 25	70	80
3 by 9	1,613		30 by 30	48	56
4 by 8	1,361		35 by 35	35	40
4 by 10	1,089		40 by 40	27	31
8 by 10	544		45 by 45	22	25
10 by 10	436	502			
15 by 15	194	223			

PLANTING DISTANCES IN RELATION TO THE LIMITATION OF THE AGE OF APPLE ORCHARDS

There is an increasing interest among commercial applegrowers in limiting the life of their apple orchards to 25 or 30 years, because the growing and harvesting costs per bushel tend to increase after the trees reach the age of 30 years. Moreover, disease and insect control is more difficult on old trees, and the color and size of the fruits are poorer.

In a survey (3) of Ohio orchards by the Experiment Station's Department of Horticulture in 1939, the question was asked, "During what years of the life of your apple orchard have you secured the most economical production?" Approximately 75 percent of the commercial orchardists responding to the inquiry listed the most profitable period as between 15 and 25 years from planting.

Total production and economic production should not be confused, for experience in the Station orchards has shown that the average annual production will increase past 35 years from planting.

In a new planting where apple trees are set with definite plans to remove the orchard at 25 or 30 years from planting, the distance between trees need not be quite as far as when the trees are left for longer periods. The planting distances for apples recommended previously in this bulletin are based upon conventional orchard practice.

APPLES

Classification of Varieties

The total number of apple varieties listed by American nurserymen has gradually decreased in recent years. A checkup of 75 nursery catalogs for the year 1949 showed that there were 243 varieties listed for sale. Obviously, many of these varieties are not suited for planting in Ohio.

In the following apple classification, an attempt has been made to separate the varieties into three use groups: commercial, home use, and roadside market. It is not to be understood from this grouping that a variety placed in one classification is eliminated from consideration in another, but rather that a given variety should be considered primarily fitted for the use suggested; for instance, Grimes Golden, Jonathan, Delicious, and others listed for commercial uses are splendid varieties for home use. A few of the varieties listed for home use also have limited commercial value.

Varieties of apples for home use—Battle, Benoni, Jefferis, Melba, Rambo, Sweet Delicious.

TABLE 2.—Varieties of apples recommended for commercial planting

(Listed in approximate order of ripening)

Northern counties	Central counties	Southern counties
Yellow	Yellow	Yellow
Transparent	Transparent	Transparent
Lodi	Lodi	Lodi
Wealthy	Wealthy	Wealthy
Ohio Nonpareil	McIntosh	Grimes Golden
McIntosh	Cortland	Jonathan
Cortland	Grimes Golden	Delicious,
Jonathan	Jonathan	Starking, or
Delicious,	Delicious,	Richared
Starking, or	Starking, or	Turley
Richared	Richared	Golden Delicious
Baldwin	Turley	Stayman Winesap,
Turley	Golden Delicious	Staymared, or
Golden Delicious	Stayman Winesap,	Blaxtayman
Stayman Winesap	Staymared, or	Rome Beauty,
Staymared, or	Blaxtayman	Gallia Beauty,
Blaxtayman	Rome Beauty	or Red Rome
Rome Beauty,	Gallia Beauty,	York Imperial
Gallia Beauty,	or Red Rome	
or Red Rome		

Varieties of apples for roadside market—In addition to those on the commercial list, there are Chenango, Maiden Blush, Melba, Ohio Nonpareil, Red Gravenstein, Summer Rambo, and Franklin. Crab apples are Dolgo, Hyslop, and Transcendent.

Certain apple varieties are adapted for use as fillers. Some of these are Cortland, Golden Delicious, Jonathan, Rome Beauty, Wealthy, and Yellow Transparent.

Brief notes on the general characteristics of a number of varieties of apples are presented. The date of bloom, date of first picking, and yield that follow the descriptions in these notes are taken from the records of tree performance in the Ohio Agricultural Experiment Station orchards. These records in many instances cover a period of 33 years.

For convenience, recommended varieties are divided into two sections: summer and fall varieties, and winter varieties. For this purpose, the picking season for Ohio Nonpareil and McIntosh is established as the end of the fall period. Varieties harvested later than these varieties are classified as winter varieties.

RECOMMENDED VARIETIES

Summer and Fall

(In order of ripening)

Yellow Transparent:

One of the earliest varieties. It is well adapted to all sections of Ohio. Comes into bearing early. Mature trees are biennial in production. Susceptible to blight. Tree upright in growth and makes a desirable filler tree. The fruit tends to run small in size unless carefully thinned.

Lodi:

This is the result of a cross made by the New York State Agricultural Experiment Station between Yellow Transparent and Montgomery. It is much like Yellow Transparent in shape and color but averages much larger. It ripens 5 to 7 days later than Yellow Transparent. It is not quite as good for culinary uses as Yellow Transparent but due to its size may be preferred if the trees are to be retained longer than 15 years.

Melba:

This is a high quality variety which originated as a McIntosh seedling at the Central Experiment Station in Ottawa, Canada. It is the best dessert apple in its season. Commercially it is recommended only for roadside or local sales. Melba is in season 10 days after Lodi.

Red Melba:

A bud sport of Melba. Due to superior color is preferred to the parent variety.

Red Gravenstein:

This is a red strain of the old variety Gravenstein. It is more highly colored than the parent variety but otherwise similar. This is one of the high class culinary varieties for late August.

Summer Rambo:

The fruit of Summer Rambo is characteristically large and of good quality, both for culinary and dessert uses. It does not keep well and bruises easily. It can be recommended where large apples are desirable. The season is late August to early September.

Wealthy:

This is a standard early fall variety. The trees are small in size and bear young. These characteristics make this variety desirable where fillers are used. Wealthy is favorably known as a culinary variety and may be stored for several weeks. The season is early September.

McIntosh:

McIntosh is here classified as a fall variety as indeed it is in most sections of Ohio. The harvest season is early September. This is one of the very high quality varieties. It is also productive. It is susceptible to scab and in many sections of Ohio the fruit does not color well before it drops. By the use of sun coloring McIntosh may serve as a desirable roadside variety in many sections of the state.

The red strains of McIntosh so far tested at the Station have not proven superior to the parent variety.

WINTER VARIETIES**Franklin:**

This new variety is being placed in our recommended list for the first time. Franklin originated as a Delicious x McIntosh cross at the Ohio Experiment Station. Its ripening season is ten days to two weeks after McIntosh. Like its parents the variety is very susceptible to apple scab. However, with careful spraying the apples are very attractive. The color is a bright carmine over a deep yellow background. The form varies from oblate to oblong. It is now suggested as a possible roadside or local market variety to extend the McIntosh season. It is fully as good as McIntosh for dessert and excellent for sauce.

Cortland:

This variety resulted from a Ben Davis x McIntosh cross at the New York State Agricultural Experiment Station. At its best, Cortland compares favorably with McIntosh. It should be placed in cold storage as soon as harvested if it is to be kept after November 1st. Cortland follows Franklin in picking season. This variety is especially well adapted for use in a salad.

Grimes Golden:

This old variety is of excellent quality for all uses. It comes into bearing at an early age and is productive.

The variety has some serious weaknesses which modify its value for commercial uses. The tree is particularly subject to collar rot, for this reason it is recommended that double worked trees be used where Grimes is planted. Another difficulty with Grimes is the tendency towards small sized fruit on older trees. More serious perhaps than either of the foregoing weaknesses is the widespread sales resistance against it.

Golden Delicious is larger and more attractive and to a large extent has supplanted Grimes Golden in recent plantings. We are including Grimes in our list of recommended varieties because under some conditions it may still be planted.

Jonathan:

This bright red apple is one of Ohio's best commercial varieties. It probably ranks second to Rome Beauty in importance in Ohio. The variety is too well known to require a lengthy description here. The trees are productive and if not permitted to overbear, produce fairly uniform crops from year to year. In order to secure satisfactory size on older trees, heavy thinning is often necessary. The red strains of Jonathan are like the parent variety except they attain a more intense color. In fact, the color of the red strains under some circumstances may be objectionable in Ohio because it is too dark. It is suggested that Ohio growers go slow in shifting from Jonathan to its red strains.

Sweet Delicious:

This variety originated at the New York State Experiment Station as a cross between Deacon Jones and Delicious. There is little demand for sweet apples in this state. However, we are including this one variety in our list of recommended varieties for those who may want a sweet variety.

Delicious:

This highly flavored dessert apple is so well known that a description of it is not required here. From a commercial standpoint it may be stated that well grown Ohio Delicious nearly always bring top prices. The difficulty is that in many Ohio orchards the variety has not been productive enough to make it profitable. It comes into bearing slowly. It is also prone to set light crops even when it reaches bearing age. The variety should be stored in a refrigerated storage to prevent loss of flavor early in the season. Whether or not Delicious should be planted commercially in Ohio should be determined by its behavior locally. Here and there over Ohio, growers have been successful in securing good production. Under such circumstances it is extremely profitable due to the relatively high price per bushel. The older trees should be rather heavily pruned to encourage the production of high color.

Red Strains of Delicious:

A number of red strains of Delicious have been tested at this Station. These new varieties are essentially the same as Delicious except they are more intensely colored. They also color earlier than Delicious. This latter characteristic has often resulted in the premature harvesting of these red strains. The red strains may be suggested instead of Delicious provided the grower understands that the picking date is essentially the same as for Delicious.

Northern Spy:

This old variety has only limited value in Ohio. Its greatest assets are its good culinary quality and its late blooming. The trees are very tardy in reaching production. It is only suggested for limited commercial plantings and then only where there is a proven market outlet.

Red Strains of Northern Spy:

The Station has tested several red strains of Spy or varieties closely akin to it. Where the Northern Spy can be well grown we do not think that any of the red strains are superior. The over color of these red strains is not always attractive.

Baldwin:

This variety has declined in popularity in Ohio and now is rarely planted. In some sections of Northern Ohio it still has a limited value. It is a good culinary variety although the trees are rather slow in coming into bearing. The variety may be rated a good producer. "Baldwin Spot" or "Stippen" is perhaps the most serious objection to the variety.

No control for this spot has been developed. The present recommendation is for only limited use of this variety in areas where there is a market for it.

Turley:

This Winesap seedling has been increasing in popularity in Ohio as a replacement for Baldwin and to a lesser extent for Stayman Winesap. The trees come into bearing fairly early and are productive. The Turley trees resemble Stayman Winesap in appearance. The fruit also resembles that variety to some extent but is even more like Arkansas (Mammoth Black Twig). The quality of the fruit for dessert purposes is not as good as Stayman Winesap. It may be rated good for culinary uses. Its greatest advantage over Stayman Winesap is that the fruit does not crack. Moreover in recent years the trees have been more productive and regular in bearing than Stayman Winesap. The picking season of Turley is 7 to 10 days before that of Stayman Winesap. In some instances the harvest has been delayed so long that the storage life has been shortened.

Melrose:

We are including this variety in the recommended list for the first time. Melrose originated as a cross between Jonathan and Delicious at this Station. The fruit is more like Jonathan in appearance than Delicious. It is larger than Jonathan and much later in season than either its parents. Its harvest season is just before Stayman Winesap. Its storage season is equal to that of Stayman Winesap. The variety has good quality both for dessert and culinary purposes. Up to and including the season of 1952 this variety has shown no tendency toward Jonathan Spot. The fruit may occasionally show some russetting. The variety may require careful spraying to avoid russetting. It is not suggested that Melrose be planted as one of the main varieties. It is a promising new variety which deserves a trial in all commercial orchards in Ohio.

Monroe:

This is a new variety named and introduced for trial by the New York Experiment Station in 1949. It is a Jonathan-Rome cross. The color is similar to Jonathan. The size is medium to large. The quality is good. The season is late winter. It deserves a trial.

Golden Delicious:

This variety may now be rated as one of our good commercial varieties. Its greatest weakness is its color. Where a yellow variety is not objectionable it is the best of that type. The quality of the fruit is

excellent for dessert and culinary uses. The trees come into bearing young and are productive. Mature trees tend toward alternate heavy and very light crops. After the trees are 10 or 12 years old this variety should have careful thinning in full crop years. This improves the size of the fruit that year and helps to encourage annual production.

Stayman Winesap:

This has been one of the standard winter varieties in Ohio for at least 25 years. During the past decade some of the weaknesses of the variety have been very serious. The variety has failed to set the crops that it had in the earlier years. There seems to have been several factors involved in these light crops. The variety is very susceptible to spring frost injury and also "finicky" about pollination and other aspects of the fruit setting processes during some seasons and the fruit is also very seriously affected by cracking prior to harvest.

For the foregoing reasons the proportion of trees of this variety in a planting at the present time probably should not exceed 10 or 15 percent. When the variety is planted due precaution should be taken to provide the best possible conditions for fruit setting. This means that the variety should not be set in blocks more than two rows wide. It should be surrounded on either side by good pollenizing varieties. It should be planted only on the more favorable frost-free sites.

Red Strains of Stayman Winesap:

A number of these new varieties have been tested. They differ from the parent variety only in color. The red strains are suggested instead of Stayman Winesap in those areas where lack of color has been a factor. As grown at the Station, Blaxtayman and Staymared are very much alike in color characteristics, Scarlet Staymared is somewhat more highly colored than either of the foregoing named varieties.

Rome Beauty:

This is Ohio's best commercial apple. The trees come into production at an early age. It produces good crops annually. The blooming date is relatively late, thus often enabling the variety to escape frost injury. The quality of the fruit is not as good as might be desirable, but over a long period of years the variety has demonstrated its value as a long-keeping market variety. When the variety is to be held in cold storage until late in the year it is especially important that it be rushed into cold storage immediately after harvest. Rome Beauty is quite susceptible to scald in storage. For this reason if the fruit is to be held in storage it should be packed in oiled paper. Air conditioning the storage also reduces hazards. The variety is quite susceptible to apple scab

but this disease can be controlled by thorough spraying. As of the present Rome Beauty or the red strains of the variety should comprise not less than one-third of the commercial planting in Ohio.

Red Strains of Rome Beauty:

There are several red strains of this variety fruiting in Ohio. The most widely tested are the Gallia Beauty and Red Rome. The main difference between Rome Beauty and these red strains is the color of the fruit. For areas of the state where Rome Beauty does not color well these red strains may be suggested as replacements. It should be pointed out, however, that it would be a mistake to entirely replace the parent variety with the red strains. There are some markets which still prefer the well colored striped Rome Beauty.

Ruby:

This variety originated at this Station. It was produced by pollinating Gallia Beauty with Starking. It comes into bearing at an early age and bears annually. The period of full bloom is as late as Rome Beauty. The date of picking is late October. The storage season extends from mid-winter to early spring. The color of the variety is well described by the name. The variety becomes very attractive when subjected to mechanical cleaners. The flesh is firm and fairly juicy. It is excellent for all culinary purposes and superior to Rome Beauty for dessert. The variety is worthy of extensive trial.

York Imperial:

This old variety has never been widely grown in Ohio. It is not generally recommended now. It is included in this list for two reasons: (1) The variety has attained considerable prominence for processing. (2) It is a late-blooming variety and might be used to some extent in blocks of Rome Beauty or Golden Delicious.

Red Strains of York Imperial:

There are several red strains of this variety now established as varieties. Under Ohio conditions the red strains are recommended in preference to the parent variety. As grown at the Station, Red Yorking and Colora appear to be very similar to each other.

VARIETIES OF MINOR IMPORTANCE

This list embraces a group of varieties which are not first-rate commercial sorts. Most of them are old varieties which for some reason or another have gradually come into disfavor; some of these are still grown in Ohio in considerable volume, and some of them have limited

commercial value in restricted areas. They should not be planted for commercial purposes without giving full consideration to their likely acceptance by the trade.

Ohio Nonpariel:

This large apple ripens about the middle of September. It commands a ready sale in competition with all varieties in its season. It is not very productive. For this reason and because it matures at a season when there is apt to be a surplus of apples it has only limited commercial value.

Belmont (Gate, Mamma Beam):

This old variety has never been grown extensively in Ohio for the market except in the vicinity of Youngstown. The fruit is of excellent quality, both for dessert and for cooking. The season is early winter, and the color lemon yellow, frequently blushed. The flesh is tender, readily showing bruises. The tree blights badly and is only moderately productive. It has too many handicaps to warrant planting commercially.

Oldenburg (Duchess):

This variety was for many years included among the varieties recommended for planting in Ohio. Its ripening season follows that of Transparent. The variety is useful only for culinary purposes and even as a cooking apple, it is decidedly inferior to Yellow Transparent. In addition, it is a difficult variety to harvest in that it is frequently subject to breakdown. The most serious objection to the variety, however, is that it frequently meets a glutted market. With the addition of Lodi, Melba, and other better varieties to the list, it is recommended that Oldenburg be discontinued.

Red Canada (Steel's Red):

This is another old variety which can be omitted from the list for Ohio. There is no special demand on the Ohio market for it. The quality of the fruit is good. It is in season with Baldwin and does not develop the storage troubles which that variety sometimes does. The apples tend to run small as the trees grow older.

Rhode Island Greening:

This is one of the fine old varieties which is gradually but surely losing favor for commercial uses. Color prejudice of consumers against green apples is the principal factor in causing this disfavor. The trees blight badly but generally are productive. The variety is one of the

finest for most culinary uses. For special local markets and processing there may be a place for the variety, but it should be planted with discretion.

Stark:

Stark is an old variety of Ohio origin. The fruit of this variety is seriously affected by a number of diseases. The color of the fruit is poor, and the quality is below that of either Baldwin or Stayman. Miami, a red strain of Stark, is superior to the parent variety, but neither merits much consideration.

Sutton Beauty:

The fruit of this variety possesses many good characteristics. Its quality is good; its color attractive; and the fruit is very uniform in size. It matures a little earlier than Baldwin. The trees blight badly and are not very productive.

Tompkins King:

This old variety has been widely grown over Ohio almost from the beginning of Ohio orcharding. The fruit has good quality, but the tree, in addition to being seriously affected by blight, is a shy bearer. Apart from its value for show purposes or in the home orchard it is not worthy of a place on the Ohio variety list.

Winter Banana:

When Winter Banana is well grown, it is of excellent appearance, but in spite of its blending of the rich yellow background with an attractive blush, it has become increasingly difficult to sell. The tree blights rather badly and is very subject to scab.

NEWER VARIETIES

The following varieties are of comparatively recent introduction. Based on the experience at this Station some of these merit trial, others do not, as indicated.

Anoka:

The variety originated in South Dakota. The tree is small and bears very young. Under Ohio conditions it is not recommended.

Beacon:

This variety originated at the Minnesota Fruit Breeding Station. In Ohio it ripens between Oldenburg and Wealthy. It seems worthy of trial.

Close:

This variety is suggested for trial.

This is essentially a red Transparent. It is of the same season, size and fruit characteristics as Yellow Transparent. The over color is a dark red.

Early Red Bird (Crimson Beauty):

This is a red apple ripening with Yellow Transparent. Quality is too poor to warrant planting in Ohio.

Edgewood:

An Iowa Experiment Station introduction. It is of fair to good quality. Season midwinter. Attractively colored, worthy of trial.

Fyan:

A Missouri Experiment Station introduction. So far the results with this variety do not indicate much promise for Ohio.

Grove:

This is one of the more promising of the Missouri Seedlings. It is a mid-winter variety of good quality and attractive red coloring. It is worthy of trial.

Haralson:

This variety is from the Minnesota Experiment Station. It is in season with Grimes and Jonathan in Ohio and so far as quality is concerned it is inferior to both. Not recommended.

Miller Giant:

This is a very large apple similar in color to Rome Beauty. The season is mid-winter. The variety originated in Gallia County, Ohio and is thought to be a seedling of Rome. For anyone desiring a large apple for mid-winter it is worth trying. The quality is comparable to Rome Beauty.

Redwell:

This variety is of Minnesota origin. It is very highly colored. The size is medium and the season early to mid-winter. The quality is fair to good.

Sandow:

This is a Northern Spy seedling which originated in Ontario. The season is early winter. Quality fair.

Sharon:

An Iowa variety which develops fair quality in Ohio. It does not seem to be very promising for this state.

Spartan:

This is a McIntosh x Newton cross from Ontario. The season is early to mid-winter. The fruit is an attractive dark red. The variety is worthy of trial.

Whetstone:

This is another of the Missouri Experiment Station introductions. It develops high color but does not possess sufficient merit as grown in Ohio to recommend it.

CRAB APPLES

Only two varieties of crab apples are recommended for planting in Ohio—Dolgo and Hyslop. These two varieties are probably the best, considering quality, and they ripen in succession over a period extending from mid-August to early September, the period when crabs are most in demand.

Dolgo:

This variety originated in Russia and was introduced into America by Professor N. E. Hansen of the South Dakota Experiment Station in 1897. The tree is the most striking in appearance at picking time of any variety tried at the Station. The coloring of the fruit is a brilliant crimson and makes the tree very showy for a considerable distance. At blooming time also, the tree is very attractive. The fruit is rather small and very distinct in form, being rounding conic. The quality is good for culinary uses, and the variety is especially recommended for decorative purposes.

Hyslop:

This variety is perhaps the best of the crabs for commercial purposes, as it ripens in early September, when crab apples are more in demand. The trees are small and moderately vigorous. The fruit is of medium size and is pale yellow covered with dark crimson and over-spread with a heavy bloom.

PEARS

In the last twenty years pear production in Ohio has become limited to a few varieties of which only Bartlett and Kieffer are of any commercial importance. Bartlett has no close competitor either in quality or consumer acceptance. Kieffer is of secondary importance, being only grown where blight resistance is a determining factor and where Bartlett, which is much more susceptible to fire blight cannot be grown satisfactorily. Other varieties such as Duchesse D'Angouleme, Beurre D'Anjou, Seckel, Tyson, Flemish Beauty, Lawrence and Winter Nelis have been planted almost entirely for home use and only enter the commercial picture under exceptional circumstances such as roadside or farm markets.

Information concerning other pear varieties some of which have been recently introduced from Europe has been obtained and classified at the Ohio Experiment Station at Wooster, where over 125 varieties, either new or uncommon, have been under observation.

Except for certain of the most recent introductions, which will be considered in a separate section, the varieties here considered are classified according to the approximate length of growing season. Special attention has been given to the pressure test as a means for determining the most satisfactory time of harvest in relation to optimum dessert quality.

Table 3 presents the average data of full bloom and of picking together with length of growing season of the various pear varieties. The data was taken during the period from 1938 to 1952 inclusive.

Tyson:

This variety is the earliest ripening summer pear to be found in Ohio. Harvested about mid-August at Wooster the fruits keep only for a brief period. They are small in size, dull yellow in color, sweet and well-flavored. The tree is relatively blight resistant. Tyson is valuable chiefly as an early variety for home use. April 30, August 19, 112 days.

Clapp Favorite:

The fruits of this variety are large and attractive resembling Bartlett in dessert quality. It precedes Bartlett by about 10 days but its intense susceptibility to blight and the rapidity with which the fruits mature limit the usefulness of the variety in Ohio. Care must be taken to harvest the fruits while still quite firm as delayed harvest will result in interior softening while the outer portion appears overly firm. Only

those who have had successful experience in controlling fire blight and will utilize Old Home as the framework for the tree should plant this variety. May 3, August 23, 113 days.

Beierschmitt:

This variety is one of the best of these newly introduced and on trial at Wooster. Originating in Iowa it seems to be more hardy than Bartlett although contemporary as to season. The fruits are only reasonably attractive, medium in size, tender, juicy, sweet and well-flavored. In addition the variety appears to be more blight resistant than Bartlett for which it might be used in a limited way as a pollinizer. The fact that it is harvested at the same time as Bartlett limits its value in Ohio. It is however recommended for limited commercial trial in Ohio to supplement Bartlett. May 2, August 30, 121 days.

Bartlett:

This is the best known and most popular variety for home and commercial planting in Ohio. Consumer demand warrants the favored position of this variety despite its susceptibility to blight. Trees should by all means be established on an Old Home framework.

The fruits are large, attractive and of excellent quality for eating fresh and for canning. They may be harvested even somewhat prematurely without the hazard of core breakdown which is a disadvantage of certain other varieties. In storage at 32° F. the fruits will keep a reasonable length of time.

The variety is productive but it requires thorough cross-pollination. For this purpose Duchesse D'Angouleme, Beuree D'Anjou, Beierschmitt and Ewart, Beurre Bosc or Old Home may be utilized for this purpose. May, September 2, 124 days.

A russet strain of Bartlett has been obtained which is harvested a week later than the parent variety. An attractive fine-grained russet overlays the surface and the fruit develops very good quality. Except as a novelty and to extend the Bartlett season it is of no commercial value. May 1, September 8, 131 days.

Lincoln:

This variety, apart from its exceptional blight resistance would seem to offer little promise in Ohio. The fruits, harvested at the same time as Bartlett are disappointingly small and not particularly attractive. Although the fruits possess fair dessert quality when properly ripened, they are possibly too vinous in flavor for general acceptance.

Furthermore, they keep only a limited period. The fact that the variety is harvested at the same time as Bartlett also counteracts greatly its value. May 1, September 2, 125 days.

Gorham:

At one time this variety held definite promise of becoming a standard commercial variety. Its fruits are large, attractive and of excellent quality both for eating fresh and for canning. The tree however, has definite limitations including low productivity and a blight susceptibility even more intense than Bartlett of which it is a seedling. In view of these facts it cannot be recommended for either home or commercial use. May 4, September 10, 130 days.

Cope's Seedless:

This variety, presumably a mutation of Bartlett, differs from that variety in a number of important respects. Although the fruits greatly resemble Bartlett in size, shape and appearance, its flavor is distinctly inferior. The date of harvest is a week or ten days later. The fruits tend to be seedless if the flowers are not cross-pollinated; otherwise, they are distinctly seeded. Probably the variety is sufficiently self-fruitful for a full commercial crop. Except as a novelty, however, it hardly warrants planting. May 1, September 10, 134 days.

Seckel:

This well-known sweet pear possesses excellent dessert quality and the tree is remarkably free from blight. The small size of the fruit, however, has a tendency to limit its use, thus restricting the commercial value. Although the trees may be slow in coming into bearing its eventual productivity is a rewarding feature. Worden Seckel, which is presumably a large fruited mutation, would seem to be preferable to Seckel as are several of the newly introduced Seckel seedlings recently introduced by the New York State Experiment Station.

Ewart:

This variety which originated near Akron, Ohio has been one of the most satisfactory of the newer varieties at Wooster. The fruits are medium or slightly larger in size, greenish yellow to yellow and occasionally mottled with russet, a fact which limits its attractiveness. The flesh is soft, tender, juicy, and of very good quality when eaten fresh. The tree is probably more blight resistant than Bartlett and seems to bear reasonably well. Its season of harvest is two weeks later than Bartlett, for which it might be planted in a limited way commercially as a pollinizer. May 2, September 15, 137 days.

Conference:

This variety which shares commercial prominence with Bartlett in England produces fruits that are too small and as a rule not sufficiently attractive to justify commercial planting in Ohio. The tree produces heavy crops of small to medium sized fruits frequently overspread with a fine-grained russet. The yellow-green color is often unattractive and together with size limits commercial acceptance of the variety. The fruits when properly ripened are tender, juicy, sweet and of excellent dessert quality. If of suitable size they are satisfactory for canning. May 3, September 18, 139 days.

Pulteney:

This variety, originated some years ago at the New York State Agricultural Experiment Station is unlikely to become commercially important. The fruits are medium-sized, and unattractive because of the green color which never seems to turn an attractive yellow. Frequently the skin of the fruit is astringent and the flavor too vinous. May 3, September 18, 139 days.

Cayuga:

This large-fruited Seckel seedling originated at the New York State Agricultural Experiment Station. The fruits are medium to large, have an attractive red blush and possess excellent quality for eating fresh when properly ripened. The trees are very productive and much more blight resistant than Bartlett. Certain serious faults unfortunately have been observed at Wooster. The fruits tend to drop prematurely, often even several weeks ahead of the most desirable harvesting date. The skin is tough and rather thick. Where the fruit may be grown satisfactorily it would certainly be valuable for home use if not for commercial planting. May 1, September 17, 140 days.

Duchesse D'Angouleme (Angouleme, Duchess)

This variety has been grown for years in home gardens in the state and in a limited way commercially. Its large fruits, coarse in appearance and somewhat roughened on the surface are only fairly attractive and of only fair to good dessert quality. The trees are less susceptible to blight than Bartlett for which it is an excellent pollinizing variety, a factor which is presumably its chief value. Consumer demand for this variety is very restricted. May 2, September 18, 140 days.

Flemish Beauty:

This old variety produces fruits which are tender, juicy, sweet, and spicy. However, the excellent dessert quality is counterbalanced by extreme susceptibility to blight and a marked tendency to develop scab.

Commercial planting is not recommended. If topworked on Old Home stock, the variety might be suitable for those interested in a variety whose flavor is unexcelled. April 28, September 14, 140 days.

Doyenne Du Comice:

This is a standard commercial variety on the Pacific Coast but it has never been grown successfully in the East. The fruits when properly grown are large, smooth, and attractive with a delicate blush. They possess excellent quality. The variety has a reputation for low productivity. The fruits are harvested about September 15 at Wooster.

Howell:

This is an old variety, medium to large in size and lemon yellow in color when mature. It possesses good dessert quality but is hardly worthwhile for either home or commercial use. May 4, September 24, 144 days.

Canner:

This is a Kieffer-type pear which is apparently of about the same size, shape, appearance and quality as that variety. It has been used to some extent in Michigan. At Wooster the fruits have a very definite tendency to ripen unsatisfactorily. May 4, September 26, 147 days.

Beurre Bosc (Bosc)

This variety has been under special test at Wooster during the last 15 years and has done surprisingly well. Topworked upon the blight-resistant Old Home framework the trees have been productive and few have been removed because of blight. The fruits have been large, attractive and the quality excellent both for fresh use and for canning. The fruits keep well in storage at 30° to 32° F. and even after some months when properly ripened are still of excellent quality.

The studies on time of picking indicate that the pressure test must be utilized to determine the best time to harvest the fruits if core breakdown is not to develop. Harvested before they attain 13.5 to 14 pounds pressure, optimum quality without serious internal softening is attained.

Although the trees are relatively slow in coming into bearing they are reasonably productive thereafter. With proper precautions to control fire blight the variety is recommended along with Bartlett for limited commercial planting in Ohio where a late pear, already enjoying considerable consumer acceptance, is desired. May 3, September 29, 150 days.

Beurre D'Anjou (Anjou):

Although this is one of the commercially important late varieties grown in the Pacific Northwest, it has never acquired a commercial status in the East. The trees have never been sufficiently fruitful, but this is improved in the Pacific Northwest by heavy pruning. The fruits when properly grown are large, smooth of skin, yellowish-green to greenish-yellow in color with a short, thick, stem. The fruits have a sweet, rich vinous flavor and have high quality for eating fresh. The trees are considered more blight-resistant than Bartlett for which it may be used as a pollinizing variety. The variety does not appear to have much commercial promise for Ohio. April 30, September 29, 153 days.

Waite:

This variety, originated by the United States Department of Agriculture has never ripened satisfactorily at Wooster. The fruits more or less resemble Bartlett but the color has never attained the attractive yellow color of that variety. The tree is presumably especially blight-resistant. The exact growing season cannot be predicted in view of the fact that regardless of the time of picking, satisfactory maturity of the fruits has not been obtained. May 2, October 1, 153 days.

Clyde:

This variety originated at the New York State Agricultural Experiment Station and is a seedling of Seckel. The fruits are small to below medium in size, but larger than Seckel and are largely overspread with a fine-grained russet. The flesh is rather tender, soft, sweet and pleasing to the taste. At times the fruits have not ripened satisfactorily at Wooster. The variety is primarily characterized as a late Seckel and hardly warrants propagation except as one desires to extend the season of the parent variety. May 2, October 4, 156 days.

Lawrence:

Long known to the pear grower as one of the late varieties it has never attained commercial prominence. The fruits are medium in size, greenish, in color, only fairly attractive, but pleasing to the taste. The tree seems quite resistant to blight and is long-lived. All considerations point to the eventual disappearance of the variety. May 2, October 7, 159 days.

Covert:

This variety originated at the New York State Agricultural Experiment Station from a Bartlett x Dorsett cross. The fruits are large, decidedly pear-shaped but never have become an attractive yellow. The

flesh is firm, moderately tough but the grit cells are not objectionable. At Wooster the fruits have not ripened satisfactorily regardless of the time of harvest. May 2, October 8, 160 days.

Ovid:

This variety originated by the New York State Agricultural Experiment Station resembles Bartlett in size, shape and color. The skin is overspread with patches of russet which detract somewhat from the attractiveness of the fruit. The flesh is reported to be fine-grained, tender, sweet, spicy and good when eaten fresh. However, these characteristics have not been noted at Wooster since the fruits have not ripened really satisfactorily. The cause for such behavior under Ohio conditions is not known. May 1, October 8, 160 days.

Dana Hovey:

This old variety possesses such excellent dessert quality and keeps so well that it deserves a place in the home garden. The fruits are somewhat larger than Seckel and are covered with a fine-grained russet. When properly ripened they are unexcelled for eating fresh. The trees are hardy, vigorous but not highly productive and somewhat susceptible to blight. The late ripening of the fruit is an added advantage for those who want varieties ripening over an extended period. They also keep well in storage. May 2, October 10, 162 days.

Willard:

This late harvested variety originated at the New York State Agricultural Experiment Station as a cross of Bartlett x Dorsett. The fruits are large, the surface uneven and only moderately attractive. As with certain of the other newer late varieties the fruits have never ripened satisfactorily at Wooster regardless of date of picking. May 2, October 15, 167 days.

Winter Nelis:

Winter Nelis, an old variety of very good dessert quality and possibly the latest one to ripen, has never attained commercial prominence in the East. The fruits are of medium size and only fairly attractive. The flesh is tender, sweet and juicy. The trees have a reputation for reasonable freedom from blight. Where a very late good variety is desired for home use, this variety has no competitor. A russet strain is also known but it has no advantage over the ordinary variety. May 4, October 18, 168 days.

Kieffer:

This variety has long survived largely because of its blight resistance. Apart from this important factor it possesses few valuable

qualities. The trees bear heavily producing small fruits unless adequately thinned. In general the fruits are of mediocre quality. When properly ripened they present a fairly satisfactory canned product. Planting of this variety for home or commercial use does not seem justified. April 29, October 17, 172 days.

TABLE 3.—Average date of full bloom and of picking together with length of growing season of various pear varieties, 1938-1952. Wooster, O.

Variety	Average date of		Number of days between full bloom and picking dates.
	Full Bloom	Picking	
Bartlett	May 2	Sept. 2	124
* Bartlett (Russet strain)	May 1	Sept. 8	131
Beierschmitt	May 2	Aug. 30	121
Beurre Bosc	May 3	Sept. 29	150
Beurre D' Anjou	April 30	Sept. 29	153
* Cayuga	May 1	Sept. 17	140
Clapp Favorite	May 3	Aug. 23	113
Clyde	May 2	Oct. 4	156
Canner	May 4	Sept. 27	147
Conference	May 3	Sept. 18	139
Cope's Seedless	May 1	Sept. 11	134
Covert	May 2	Oct. 8	160
* Dana Hovey	May 2	Oct. 10	162
Duchesse D' Angouleme	May 2	Sept. 18	140
Ewart	May 2	Sept. 15	137
* Flemish Beauty	April 28	Sept. 14	140
Gorham	May 4	Sept. 10	130
Howell	May 4	Sept. 24	144
Kieffer	April 29	Oct. 17	172
Lawrence	May 2	Oct. 7	159
Laxton's Superb	May 2	Aug. 18	109
* Lincoln	May 1	Sept. 2	125
Maxine	May 1	Aug. 29	121
Ovid	May 1	Oct. 16	169
* Pulteney	May 3	Sept. 18	139
Seckel	May 1	Sept. 13	136
* Shea	May 3	Sept. 21	142
Smythe	April 30	Sept. 17	141
* Tyson	April 30	Aug. 19	112
Waite	May 2	Oct. 1	153
Willard	May 2	Oct. 15	167
Winter Nelis (Russet strain)	May 4	Oct. 18	168
* 1938-1949			

BRIEF EVALUATION OF OTHER NEWLY INTRODUCED OR UNCOMMON PEAR VARIETIES

Laxton's Superb:

This variety recently introduced from England where it is a commercial variety is a c r o s s between Beurre Superfin and Bartlett. At Wooster the fruits are harvested two weeks ahead of Bartlett to which they are similar in size, shape, appearance and quality. The fruits are sweet, juicy and somewhat vinous and occasionally slightly astringent. Like other early ripening varieties the fruits keep for only a brief period. No other variety, preceding Bartlett with the exception of Clapp Favority, equals it in quality. The trees are as susceptible to blight as Bartlett. May 2, August 18, 109 days.

Early Seckel:

This variety is one of the best early r i p e n i n g sorts on trial at Wooster. The fruits resemble Seckel in flavor but are larger in size and more pear-shaped. They are usually more highly blushed. The time of harvest precedes Bartlett by several days and must be rather precisely determined since the fruits soften rapidly. Where an early high quality sweet pear is desired this variety might be given limited trial.

Maxine:

This variety w h i c h originated in Ohio has been on trial for a decade at the Station. Some characteristics seem quite desirable while others appear to limit its usefulness. The fruits medium in size, lemon yellow in c o l o r somewhat resemble Howell. The flesh is white, soft, juicy, subacid and somewhat vinous, and good for eating fresh when properly ripened. The variety is more blight-resistant than Bartlett but unfortunately the season is almost identical. May 1, August 29, 121 days.

Laxton's Progress:

This variety originated in England as a seedling of Marie Louise x Bartlett. Of medium size, it resembles Bartlett in appearance. The color becomes an attractive yellow and the flesh is fine, juicy, almost buttery sweet to subacid and of really superior dessert quality. It is harvested a week or two weeks after Bartlett. It is one of the best of the newer varieties on trial at Wooster.

Patten:

This variety has been listed in nursery catalogs for planting in the colder areas of the Central West. The fruits are medium to below average in size, somewhat russeted and develop a pink blush. The flesh is

firm, juicy and sweet with fair to good dessert quality, the grit cells not being objectionable. The fruits are harvested about two weeks after Bartlett.

Smythe:

This variety has the size, shape and appearance of Bartlett except for a russet network over the skin which is, however, quite attractive. The quality of the fruit is good, the season of harvest about three weeks after Bartlett. This is one of the better varieties on trial at Wooster and certainly deserves more extensive observation. April 30, September 17, 141 days.

Caywood:

This variety which is a seedling of Seckel originated at the New York State Agricultural Experiment Station. The fruits are medium in size, roundish and overspread with a fine-grained smooth russet. The flesh is juicy, mild and somewhat similar to Seckel over which it has the advantage of size. The season of harvest is a little later than Seckel but not as late as Clyde. This variety would interest those who would like a succession of Seckel type varieties.

OLD HOME AS BLIGHT RESISTANT FRAMEWORK FOR PEARS

Old Home is a blight resistant pear variety which has been utilized on the Pacific Coast for some time as the trunk or framework for various pear varieties. On trial at Wooster for more than 15 years (see Farm and Home Research, Jan.-Feb. 1950; Vol. 35, No. 262) it has likewise proved to be very satisfactory from this viewpoint. The trees of Old Home are usually established on Bartlett pear seedlings and the bearing tree produced by budding or grafting the Old Home laterals 12 inches from the trunk. All commercial pear plantings in Ohio should by all means be established on Old Home. Trees of Bartlett on Old Home are now available. Growers may produce their own trees by purchasing Old Home and budding or grafting to the desired variety over a period of two years.

PEACHES

Peaches constitute one of the major orchard enterprises in Ohio. Between 15,000 and 20,000 acres in the state are occupied by peach trees. In favorable seasons approximately one million bushels of fruit are produced.

A large part of the peach crop in Ohio is sold directly to the purchaser through roadside stands or other local outlets. For this reason most growers find it advisable to select varieties which ripen over a relatively long picking season.

New early ripening peaches have been introduced in recent years which are firmer and of higher quality than those previously available. For this reason housewives are now canning peaches earlier in the season than was formerly done. Therefore, commercial growers should select varieties which ripen before Elberta for the bulk of their plantings. Peaches which ripen after Elberta are more susceptible to injury by larvae of the Oriental Fruit Moth. Late-maturing varieties are not recommended unless this pest is controlled by a carefully executed spray schedule.

EVALUATION OF PEACHES

The evaluation of peaches presented here was compiled from data collected in variety test orchards located at Wooster, Ohio. Observations in commercial orchards in various parts of the State, and reports from growers have influenced the final ratings. The varieties are listed in order of ripening, with the approximate ripening date at Wooster indicated in each case. Ripening dates in southern Ohio are a week or two earlier than those being quoted here, while dates for northern Ohio would be a few days later.

The characteristics of the peach varieties, such as hardiness of flower buds, fruit size, quality, and firmness have been observed in the orchard, packing house or laboratory and scored according to a five-point system. In this method of evaluation, number 1 indicates an excellent or first place rating for the characteristic in question. Number 2 means good, number 3 represents average, number 4 indicates fair, and number 5 poor. Such a numerical system of grading is very desirable if the many varieties of peaches are to be properly evaluated in an easily understood and compact table.

The varieties which may be considered for planting in Ohio are listed in the following tables. These are divided into four groups depending on their value for the state as a whole. The first group contains those varieties which are suggested for general commercial planting. The peaches of the third list should be planted in very limited numbers to satisfy special local demands. The last group may be of occasional value but have serious faults which should cause them to be eliminated from most plantings.

TABLE 4.—Evaluation of peach varieties for Ohio. Additional information from different parts of the state may change the rating of varieties.

Variety	Approximate ripening date	Color of flesh	Hardiness of buds	Fruit size	Fruit quality	Fruit firmness	Stone freeness	Remarks
1. Varieties for commercial planting								
Cumberland	Aug. 14	W	1	3	2	3	2	Standard in its season
Golden Jubilee	Aug. 15	Y	2	2	2	3	1	Too soft for shipping
Halehaven	Aug. 27	Y	2	2	2	2	1	A standard variety
Belle of Ga.	Sept. 6	W	1	3	2	3	1	Preferred to Champion
Elberta	Sept. 9	Y	3	2	3	1	1	Buds rather tender
2. Varieties for limited commercial planting								
Erly-Red-Fre	Aug. 5	W	2	2	3	3	2	Attractive, promising
Redhaven	Aug. 9	Y	2	3-4	2	2	2	Good except small
Fairhaven	Aug. 20	Y	2	2	2	2	1	Non-browning flesh
Redrose	Aug. 28	W	2	2-3	2	2	1	Promising
Sullivan Elberta	Sept. 2	Y	3	2	3	2	1	Good after Halehaven
White Hale	Sept. 10	W	2-3	1	2-3	2	1	Promising
Shippers Red	Sept. 11	Y	2-3	2	3	1-2	1-2	Many strains, some poor
Fertile Hale	Sept. 12	Y	2	2	2	2	1	Good in some areas
Lizzie	Sept. 20	Y	2-3	2	2-3	2	1	Promising

3. Varieties to satisfy special local demands

Jerseyland	Aug. 6	Y	2-3	2-3	2	2	2	Promising early yellow
Dixigem	Aug. 7	Y	2	3	2	2	2	Non-browning flesh
Raritan Rose	Aug. 13	W	2	3	2	2	2	Firmer than Cumberland
Radiance	Aug. 17	W	2	2	2	3	2	Good after Cumberland
Vedette	Aug. 23	Y	2	2	2	3	2	Good canner
Sunhigh	Aug. 23	Y	2-3	2	2	2	2	Promising
Goldeneast	Aug. 25	Y	3	2	2	2	1-2	Good if hardier
South Haven	Aug. 25	Y	2	2	2	3	2	Halehaven preferred
Colora	Aug. 25	Y	2	2	3	2-3	2	Halehaven preferred
Eclipse	Sept. 1	Y	1	3-4	2-3	3	1	Fruit small, buds hardy
Champion	Sept. 3	W	1-2	2	2	3	2	Belle of Ga. preferred
Summercrest	Sept. 4	Y	2-3	2	2	2-3	1	Color only fair
Stoner	Sept. 5	W	2-3	2	2	2	1	Promising
Kalhaven	Sept. 6	Y	2-3	3	2	2	1	Fruit small, good shipper
Early Elberta	Sept. 6	Y	3	2-3	3	2	1	Buds rather tender
Sungold	Sept. 7	Y	2	2	3	2-3	1	Promising
J. H. Hale	Sept. 10	Y	3	1	1	2	1	Tree lacks vigor
Gage Elberta	Sept. 11	Y	3	2	3	2	1	Buds rather tender
Afterglow	Sept. 12	Y	3	2	2	2-3	1	Good after Elberta
Salberta	Sept. 25	Y	3	2	3-4	2	1	Good in its season

Note: Under "color of flesh" the letter Y denotes yellow, whereas W indicates white. In hardiness 1 denotes most hardy, 3 means average hardiness, 5 indicates very tender in the flower buds. In fruit size 1 denotes the largest, under fruit quality 1 indicates the best or most desirable, and in fruit firmness 1 means the firmest. In the column entitled "stone freeness," 1 means freestone, 2 indicates a tendency to cling in some seasons, 3 means semi-clingstone, and 4 and 5 clingstone.

7. Varieties of little commercial value

Variety	Ripening date	Color of flesh*	Remarks
Mikado	Aug. 1	Y	Fruit soft, only fair quality
Marigold	Aug. 4	Y	Small, soft, fair quality, semi-clingstone
Arp Beauty	Aug. 4	Y	Fruit soft, only fair quality
Fisher	Aug. 6	Y	Outer flesh soft-ripe while immature and clingy around pit
Greensboro	Aug. 6	W	Soft, small size, only fair quality
Oriole	Aug. 11	Y	Small, soft. Redhaven preferred
Early Halehaven	Aug. 17	Y	Small, dark red. Fairhaven preferred
Carman	Aug. 17	W	Very soft, fair quality, medium size
Triogem	Aug. 17	Y	Fine fruit but buds too tender
Rochester	Aug. 19	Y	Susceptible to arsenical injury, poor on heavy soils, hardy
Fireglow	Aug. 23	Y	Good fruit but buds too tender
Sun-Glo	Aug. 25	Y	Sport of South Haven. Halehaven preferred
Newday	Aug. 25	Y	Buds tender, fair quality clings some seasons
Golden Globe	Aug. 25	Y	Good fruit but buds too tender
July Elberta	Aug. 26	Y	Fair quality, medium in size and hardness, Halehaven preferred
Zarn	Aug. 29	Y	Only fair color, average in quality and hardness
Valiant	Aug. 29	Y	Average size, quality, firmness. Halehaven preferred
Pacemaker	Aug. 30	Y	Tree lacks vigor, flesh clings to pit some seasons
Midway	Aug. 30	Y	Average size and firmness. Halehaven preferred
Veteran	Sept. 1	Y	Medium sized fruit, flesh clings to pit some seasons
Redelberta	Sept. 2	Y	Buds tender. Average size, quality, firmness
Halberta (Giant)	Sept. 10	Y	Similar to J. H. Hale
Candoka	Sept. 10	Y	Buds very tender, unproductive
Hope Farm	Sept. 14	W	Fruit soft, average quality. White Hale preferred
Hardee	Sept. 14	Y	Quality only fair, tree lacks vigor
Rio-Oso-Gem	Sept. 15	Y	Tree small, buds tender
Wilma	Sept. 15	Y	Buds tender, fruit only average quality
Iron Mountain	Sept. 20	W	Not attractive. Average size and firmness
Lemon Free	Sept. 25	Y	Fruit only fair in quality, average in size, good canner
Salvey	Oct. 17	Y	Quality poor, average in size and bud hardness
Krummel October	Oct. 24	Y	Quality poor, too late, may not ripen

* Y indicates yellow flesh, W means white flesh

DESCRIPTIONS OF PEACH VARIETIES

The following descriptions are intended to supply information in addition to that found in the table for some of the more important varieties in Ohio. The table is somewhat more useful however, because it gives a comparative evaluation which cannot be included conveniently in the material present here.

The varieties are listed in approximate order of ripening with the ripening date at Wooster, Ohio cited at the end of each description.

Erly-Red-Fre.—This variety is a well-colored, attractive, early, white-fleshed peach of large size. Its flesh is almost free, moderately firm, and of fair to good quality. August 5.

Jerseyland—Jerseyland is one of the earliest of ripening yellow-fleshed peaches to be introduced which has freestone characteristics. The flesh tends to cling some seasons but is usually free when fully mature. The fruit is somewhat above average in size, attractively colored, firm-fleshed and high in quality. The trees are vigorous and productive. August 6.

Dixigem—This yellow-fleshed peach of medium-size ripens about 4½ weeks before Elberta. The fruits attain good size and are firm enough to have good shipping quality. The flesh shows some tendency to cling to the pit but is usually free when fully ripe. The flesh is non-browning which is important if the fruit is to be used for processing. The trees are vigorous and productive. August 7.

Redhaven—An early, yellow freestone of medium size recently introduced by the Michigan Experiment Station, Redhaven has dark red, tough skin. Its quality is good, and its flesh is exceptionally firm for a peach of that season. It ripens about a month before Elberta. This is a very promising peach for early markets in Ohio. August 9.

Cumberland—This has been a profitable early white freestone peach in Ohio. The fruits are medium to large in size, and the quality is good. The flesh is firmer and of better quality than that of Carman, with which it ripens. The flower buds are relatively hardy to low winter and spring temperatures. August 14.

Golden Jubilee—This variety is an early yellow freestone ripening about 3 weeks before Elberta. It is of medium to large size, and is relatively hardy in wood and flower bud. The fruits are well colored and attractive. The flesh is too soft to withstand shipping but this variety is well suited to local trade and roadside stands. The trees should be thinned early and well in order to obtain desirable size and avoid flat-shaped fruits. August 15.

Fairhaven—This new variety from the Michigan Experiment Station is a yellow-fleshed freestone peach which ripens about a week before Halehaven just at the end of the Golden Jubilee season. The trees are vigorous and productive. The flower buds are more resistant to cold in winter than Elberta. Fairhaven usually sets a heavy crop but the fruit attains good size if properly thinned. The flesh is moderately fine-textured, of good flavor and very resistant to browning on exposure to air. August 20.

Halehaven—This is an attractive, yellow freestone of good size and quality which is one of the most important commercial varieties in Ohio. It is preferable to the older South Haven, to which it is similar. The Halehaven has more red color on the skin, has a firmer and richer flesh, and is usually more nearly freestone than South Haven. The flower buds are similar in hardiness in the two varieties. The trees are vigorous and productive but require detailed thinning of the fruits in order to obtain satisfactory size. Halehaven ripens 2 weeks before Elberta and is recommended for that season for commercial, local market, and home use in Ohio. August 27.

Redrose—This is an attractive, white-fleshed freestone of high quality. The flower buds seem hardy in limited tests, and it is suggested for trial where a white variety ripening between Cumberland and Belle is desired. August 8.

Eclipse—Eclipse is a yellow freestone of the Elberta type which ripens about a week earlier than Elberta. The quality is good and the flesh is fairly firm. Eclipse is one of the hardiest varieties, both to low temperatures during the winter and to cold weather during the blooming season. Sometimes this variety lacks sufficient size of fruit, but it is worthy of a trial where hardiness is a major factor and where a peach ripening at this season is desired. September 1.

Sullivan Elberta—This bud sport of Elberta is similar in fruit characteristics to regular Elberta except that it ripens about a week earlier. The flesh is medium firm but not as good a shipper as Elberta. September 2.

Belle (Belle of Georgia)—This is a hardy, white-fleshed freestone peach of medium to large size and of good quality. It ripens a few days before Elberta. Its shape is similar to that of Elberta, but it is not so large. It is usually more free at the stone and firmer than Champion; hence, though it lacks the size and quality of Champion, it is often preferred to that variety. It ripens during the latter part of the Champion season. September 6.

Elberta—A large-size, yellow freestone, Elberta is still of commercial importance in Ohio. Its popularity is due to its large, firm, attractive fruit, vigor of trees, suitability to many soil and climatic situations, and to its being so well known. The fruit quality is usually only fair, and the flower buds are tender to low temperatures. It should still be considered an important commercial variety, but it is being replaced in many orchards by varieties of higher quality, greater hardiness and earlier maturity. September 9.

J. H. Hale—A well-known peach of large size and high quality, J. H. Hale has fruits which are attractive and firm. Unfortunately, it is more popular with the consumer than with the grower. It is usually not very productive; the flower buds and wood are tender to low temperatures; the trees are small, and the flowers are self-unfruitful. Because of these factors, the J. H. Hale is often not profitable to the grower even though he may obtain a higher price for the fruit than for most other varieties. September 10.

White Hale—This variety resembles the J. H. Hale in size of fruit and ripens with that variety. It is firm and very attractive. It has white flesh, however, and fertile pollen. The trees have been more vigorous than those of the J. H. Hale, and it is suggested for those who want a white peach ripening at that season. September 10.

Gage Elberta—This variety is very similar to Elberta except that the trees are not quite so vigorous and are more spreading, with wider crotches. It is fairly resistant to bacterial spot. September 11.

Shipper's Late Red (Big Red)—This is a large, yellow, freestone peach of fair to good quality ripening during the latter part of the Elberta season. In the central and southern parts of the State, it is sometimes preferable to the Elberta because of its higher color and quality. It is evidently similar to Elberta in being tender to low temperatures, although during some winters it has seemed slightly more hardy. A number of strains of Shippers' Late Red have been sold, some of which are quite unsatisfactory. September 11.

Fertile Hale—A yellow freestone which resembles Elberta more than the J. H. Hale, Fertile Hale ripens just after Elberta and is evidently a little more hardy in flower bud. The flowers produce fertile pollen, and the trees are productive and vigorous. September 12.

Lizzie—The Lizzie is a yellow-fleshed peach which ripens about 10 days after Elberta. It is about the latest ripening variety which should be included in most orchards. The fruit is medium in size and quality. The flesh is firm and free of the stone when ripe. The tree is above average in vigor and yield. The flower buds are average or slightly above in hardiness. September 20.

NECTARINES

The outstanding difference between peaches and nectarines is the lack of fuzz on the fruit of the latter. Although they may prove valuable for the home orchard, roadside stand, or for special markets, the commercial value of nectarines in Ohio is limited. The best varieties from the standpoint of size and quality are not hardy enough for this state. Also, nectarines are susceptible to brown rot and curculio injury which makes their production difficult and expensive.

Following is a brief description of a few which seem to be of most value:

Garden State—A promising variety which originated at the New Jersey Experiment Station. The fruit is better than average in size and quality.

Goldmine—A white-fleshed, semi-freestone nectarine, Goldmine is round and medium to small in size. It is soft and sweet. Goldmine has large pink blossoms.

Hunter—This variety is a yellow freestone which is tart but pleasing in flavor and medium in size. It has large pink blossoms. The tree is above average in vigor and yield.

Newton—A late-ripening, hardy, productive freestone nectarine which has fruit of above average size and quality.

Quetta—Quetta is a white-fleshed clingstone. It is almost round in shape and has an attractive color. This variety is large in size for a nectarine.

Sure Crop—A white freestone of desirable quality. The fruit is round or nearly so and of medium size. It seems above average in hardiness. The blossoms are large and pink. This variety was reported to be one of the most promising in test planting in New York.

APRICOTS

Apricots are not adapted to Ohio conditions. The trees bloom so early in the spring that the blossoms or young fruit are usually killed by frost. If they escape injury by frost the weather is frequently so rainy and cold during the blossoming period that bees may not be sufficiently active to provide adequate pollination. Apricot production is not recommended in Ohio except as a novelty crop in the home fruit planting.

CHERRIES

Both sweet and sour cherries are grown commercially and for home use in Ohio. The number of important varieties, however, is limited.

The common sour cherries are classified into two groups: Those with pale or colorless juice called amarells, of which the Early Richmond and Montmorency are examples. Those with dark red juice and usually dark fruits are called morellos; the English Morello and Wragg are typical examples.

The sweet cherries are sometimes divided into the heart, or soft-fleshed, types such as the Governor Wood, and the bigarreau, or firm-fleshed, types, such as the Windsor and Napoleon. The bigarreau varieties are usually preferable.

The duke cherries are hybrids and have characteristics which are between those of the sour and the sweets. The early flowering dukes can be pollinated by sweet cherries; those flowering late are often pollinated by sour cherries.

All commonly grown sour cherries are self-fruitful.

Sweet cherries are self-unfruitful and at least two or three varieties should be planted to provide for cross-pollination.

SOUR CHERRIES

The following sour cherry varieties are listed in order of ripening:

Early Richmond—This variety is light colored with almost colorless juice. The fruits are small and of only fair quality at their best. Early Richmond is suggested only as a variety to precede Montmorency, although many who have it feel that it is not helpful to their trade because of its lack of high quality.

Montearly—Montearly ripens soon after Early Richmond at Wooster. The fruit is medium in size and of good quality. The juice is dark colored and rich flavored. The trees seem vigorous and productive in limited tests at Wooster.

Richmorency—This is a medium-sized, light-colored cherry ripening before Montmorency. It is a relatively new variety which has not been tested extensively in Ohio.

Montmorency—This variety is recommended as the standard commercial sour cherry in Ohio. Many successful growers prefer to use only the Montmorency in their orchards. Its fruits are large and of good quality, and its trees are vigorous and productive when grown correctly in good orchard soils.

English Morello—This is the most common variety of the morello type. It ripens late and has dark red juice and fruit. The trees are dwarf growing and this is of some advantage for the home or garden planting. The juice is high in sugar content, but it is also very high in acid, which gives it a sour flavor. The English Morello is preferred by many for pies, and the juice is used considerably in blending. This variety, and others of this type, are not recommended generally, however, because they are subject to leaf spot and are low yielding, and often there is only a limited demand for the fruit.

SWEET CHERRIES

There are several limitations to growing any of the sweet cherry varieties in Ohio. Among them are: difficulty in starting trees, injury to blossoms from spring freezes, cracking of the fruit, brown rot, and loss of fruit from birds. It should be remembered that all sweet cherry varieties must be planted near enough to each other that the pollen can be transferred from one to another. Three common varieties, Bing, Lambert, and Napoleon, are cross-unfruitful; hence, some other variety must be planted with them.

Windsor has been the most dependable sweet cherry in the Station orchards. Schmidt should be the second choice of the red, firm-fleshed sweet cherries. Emperor Francis and Napoleon are preferable among the light-colored sweet varieties. The following varieties are listed in approximate order of ripening, although there is no appreciable difference during the main picking season.

Seneca—Seneca is a very early variety of medium size. Its skin is dark, and its flesh is soft and juicy. Its flavor is good. This is a fine early variety but usually the fruits are largely destroyed by birds.

Early Rivers—This is a black cherry of medium size and good quality. Its flesh is firmer than that of Seneca but not as firm as that of the later varieties, such as Windsor and Schmidt.

Black Tartarian—This variety is a purplish-black cherry which is soft fleshed, juicy, and of good quality. The tree is vigorous and upright. Its principal use is to lengthen the season for local sales. This variety is also a good pollinizing sort and is dependable and productive as a backyard variety.

Victor—Victor is a pinkish-yellow variety with firm flesh ripening later than Governor Wood and before Napoleon. It is medium to large in size, and the trees yield well.

Bing—A very dark red to black variety of firm flesh and high quality, Bing is one of the most attractive when fully ripe but often cracks open and rots before this stage is reached, especially in moist seasons. For this reason it is not recommended for planting in Ohio.

Emperor Francis—This is a yellow cherry with an attractive pink blush. The fruit is larger and of better quality than Napoleon and less susceptible to cracking. The tree is vigorous and productive. At present this appears to be the best yellow-red cherry for Ohio.

Napoleon (Royal Ann)—This is a commonly grown cherry which is yellow with a pink or red blush. The fruit is large with firm flesh and high quality. The fruit is subject to rotting and cracking if not well sprayed, but not as much so as Bing. The trees are vigorous, productive, and relatively hardy.

Lambert—Lambert is a large, dark red cherry with firm flesh. The trees are vigorous and very productive. Its fruit is subject to cracking in Ohio and for this reason is not recommended for planting in this state.

Windsor—This has been one of the best varieties at Wooster, as well as for many growers in the state. The skin is dark red; the flesh is firm; and the trees have been very productive. The fruits are not so subject to cracking as those of Bing or Lambert, but they are not so large or quite as attractive. The trees are fairly hardy and long-lived. This variety should probably be the first choice when red sweet cherries are planted in Ohio.

Schmidt—This cherry has dark red skin, firm flesh, and large size. The trees become especially large but sometimes do not produce in proportion to their size. The fruit is very attractive, and Schmidt is one of the leading varieties in some cherry-producing regions.

DUKE

Brassington—This is a medium-size cherry which has more of the sweet cherry characters than the sour. Brassington ripens during, or soon after, the sweet cherry season. Many like it for pies. The fruits are red, subacid, and juicy. The tree is rather weak and not highly productive.

Reine Hortense—Reine Hortense is a light red duke cherry of large size and high quality for pies. The flesh is soft and juicy. The trees are more vigorous and productive than those of Brassington, but they too tend to break easily when the fruit is picked. Probably Reine Hortense is the best quality of any of the dukes, but it is usually not highly productive.

Royal Duke—This is one of the latest and also one of the most productive of the dukes. The fruits are medium to large, round, dark red, and liked by many for pies. The trees are not as strong as desirable, and the branches break easily.

PLUMS

The plum varieties grown in Ohio can be divided into the following groups: The Japanese plums (*Prunus salicina*), the large European (*P. domestica*), and the Damson (*P. insititia*). Most of the common plums and prunes are in the European group.

JAPANESE

The Japanese plums blossom early and are thus more subject to spring freezes than the European and Damson plums. Varieties in this group are soft and susceptible to rot and are not recommended for planting in Ohio. They may occasionally be planted for eating out of hand. They are sometimes useful for extending the plum season, as they ripen early, and some of them are quite attractive. Probably the best of these for Ohio planting are (**in order of ripening**): Shiro, Santa Rosa, and Methley. The Shiro has yellow skin and yellow flesh. The Santa Rosa and Methley are purple with red flesh. None of these varieties should be grown alone, as they are self-unfruitful and require cross-pollination.

EUROPEAN

The prune plums are preferable in this group for Ohio planting. Prunes may be defined as plums which are capable of being dried with the seed without fermentation. They are high in sugar content, and their flesh is usually firm. Only plums or prunes of high quality should be offered for sale if the demand for this fruit is to be developed. There has been a definite improvement in varieties, as well as market demand for this fruit in recent years.

The following brief descriptions are arranged in order of ripening as far as possible.

Bradshaw—This is an old plum variety but is still one of the leading ones in Ohio. The trees are slow growing and come into bearing late but are longlived and produce well once they have started. The blossoms open late and thus sometimes avoid late frosts. The fruit is reddish-purple, of fair to good quality, and soft. The stone is usually completely free when the fruit is mature. This variety is rather susceptible to brown rot. Bradshaw ripens early and is preferred by many for canning or butter.

Imperial Epineuse—This is a semi-freestone prune plum of very high quality. The appearance of the large, reddishpurple fruit is only fair; hence it often does not sell well until it is known. After it is known there is likely to be a good demand. Like Bradshaw, Imperial Epineuse is quite susceptible to brown rot. The trees are well shaped and fairly vigorous but usually do not bear well until they are 8 to 10 years old. They are long-lived, however, and bear regular and heavy crops after this age.

Stanley—An attractive blue prune is being used extensively in new plantings in Ohio. Stanley has a medium to large, freestone fruit ripening in midseason. The flesh is greenish-yellow, firm, and of high quality when well grown and mature. The trees bear much younger than the Italian and German prunes and are relatively hardy in both wood and flower bud. Stanley is recommended as a standard commercial variety for Ohio.

Italian Prune (Fellenberg, York State)—This variety has been used extensively for commercial orchards in Ohio. It seems preferable to the German Prune because of the more desirable tree and because it comes into bearing a little earlier. The fruit is usually larger than that of the German and of better quality. Its attractive blue color, freedom at the stone, and firm flesh make this variety a good one for local or other sales.

German Prune—There are evidently several strains of this variety, some of which are very good and others quite undesirable. In general, the trees are upright, vigorous, and slow in coming into bearing. The fruits are an attractive blue, freestone, medium to large in size, and firm and of high quality. German Prune has long been grown extensively in Ohio, and many growers feel that it has been their most profitable variety. It is well known by consumers and buyers and, hence, is demanded extensively on the market.

Hall—This is a large, attractive, blue, semi-freestone plum with firm flesh and very high quality. It would be one of the most desirable plums for commercial planting in Ohio except for its lacking in hardiness of wood and of flower buds. It should be grown more extensively in the State where hardiness is not a major factor with plums.

Albion—Albion is a promising late variety. It resembles Grand Duke but seems preferable because of its higher quality. It bears relatively early although not so early as Stanley.

Reine Claude—This variety seems to be one of the best of the green-Gage type. The fruit is medium to large sized, round, semi-freestone, greenish-yellow, and of high quality for dessert or canning for those who like the soft, juicy flesh. The trees are only moderately vigorous but produce regularly and fairly well. Reine Claude is recommended in Ohio principally for local or home sales.

Shropshire—Although Shropshire is lacking in the size and quality of the French damson, it seems preferable in Ohio because of its more vigorous and long-lived trees, as well as the more consistently high yields. Shropshire is well liked for jelly, jams, and preserves, and the principal market for it is in southern Ohio. The fruits are small and blue, and their flavor is tart.

GRAPES

Only the American type grapes are hardy enough to grow and produce well in Ohio. Some of the best of the new varieties, however, are results of attempts by breeders to develop hardy varieties with some of the qualities of the European type. The following descriptions of grape varieties include the standard, as well as some of the most promising new varieties for Ohio. They are listed in approximate order of ripening. A list of standard commercial varieties for general planting in Ohio includes Portland, Fredonia, Worden, Niagara, Delaware, Concord, and Catawba. Commercial plantings of Catawba should be limited to the Lake region.

Seneca—Seneca is a white variety ripening 2 to 3 weeks before Niagara and is similar to European-type grapes in flavor. It has lacked hardiness and productiveness as grown at the Ohio Agricultural Experiment Station.

Portland—This variety has been the most satisfactory of the early white varieties at the Experiment Station. It ripens about three weeks before Niagara and is of high quality. Its principal value lies in its season, and it is suggested for a light-colored variety to precede Niagara. Portland should be picked as soon as it becomes ripe, as it does not remain in good condition long afterward.

Brocton—Brocton is another white variety which ripens after Portland and Seneca. It is very high in dessert quality. Brocton has been relatively tender both in bud and wood at this station. It is of questionable value for Ohio.

Fredonia—This is a Concord type grape that ripens three weeks earlier than Concord. Its clusters and berries are usually about the size of Concord, and the plants are seemingly as hardy and productive as Concord. The juice is deeper colored and preferred by many to that of Concord. Fredonia is no longer a new, untried variety and is recommended where an early dark grape is desired.

Ontario—An early, light-colored variety of very high quality is Ontario. Its berries have not been as large as those of Portland, but its yields are often higher. Ontario could be recommended more highly if it did not lack hardiness in some sections of Ohio. It is a promising variety for regions near Lake Erie.

Niagara—This is the standard white or green-white grape in Ohio. The bunches are large, and the berries are of good size and quality. It should be allowed to become fully mature before it is harvested. The vines are vigorous and hardy enough to withstand all but the most severe winters in Ohio.

Worden—Worden is a blue-black grape of high quality. Sometimes it is necessary to harvest it before fully mature to prevent shelling. It is a vigorous and productive variety which ripens just before Concord.

Delaware—A hardy, red, midseason grape, Delaware should be considered standard in red varieties. The quality of Delaware for table use is excellent. The bunches, as well as the berries, are small, and the total yield is not all that is desired except in fertile soils and under good care.

Concord—Concord is the standard blue-black grape in most of the northern and northeastern states. It is very hardy and highly productive variety on many soils and under most climatic conditions. It is firm and thus can be shipped to a greater extent than some other varieties. Concord is the preferred variety for such purposes as juice, jelly and jam. It is a fine dessert variety and can also be used in wine making.

Captivator—This is a fairly hardy red grape of excellent quality. The bunches are not especially compact or attractive. Captivator is suggested for home plantings where high quality is a principal factor.

Golden Muscat—Golden Muscat is a greenish yellow grape of the European type. Because of its large size, and good quality, it is suggested for trial for home use. It requires a long season for ripening. Golden Muscat has often been killed to the ground by the most severe winter temperatures at the Station.

Catawba—This is a red grape which is recommended for planting commercially only along Lake Erie or on the islands in that lake. At Wooster and in most other sections of Ohio, it does not develop its maximum quality. It is of high quality, especially for juice and wine, when it is grown under suitable conditions. It should be pruned more severely than Concord.

Sheridan—This is a black grape which is promising for regions where there is little danger of early frost in the fall. It matures late and is a good keeper. Sheridan ripens 10 days to 2 weeks later than Concord and is similar to that variety but has a more compact cluster.

SEEDLESS GRAPES

Considerable interest has been expressed in recent years in the production of seedless grapes. Most of the seedless varieties have been developed from crosses involving European-type grapes and are usually too tender to grow and produce well in Ohio. Many of these varieties are quite susceptible to black rot which increases the difficulty and cost of production. At present there are no seedless grape varieties recommended. Some new seedless types are being introduced which may prove satisfactory in Ohio.

STRAWBERRIES

Strawberries are a valuable crop in commercial and home garden plantings throughout Ohio. It hardly needs to be stated that the selection of suitable varieties may mean the difference between success and failure of a commercial fruit growing enterprise. The securing of high yields year after year is essential if satisfactory profits are to be realized.

Variety selection is equally important for the backyard gardener. The average small-scale fruit grower is frequently handicapped by having a poor or mediocre site and soil. Those fruit varieties which are most suitable for commercial production are for the most part the best ones for the home garden.

THE SITUATION AT A GLANCE

In order to give a quick survey of the situation, some of the more important varieties have been grouped (see opposite page) according to three general classes: 1) for commercial planting, 2) for limited commercial planting, and 3) to satisfy special local demands.

The evaluation of the varieties in the table is based largely on data collected in variety test plantings located at the Ohio Agricultural Experiment Station at Wooster. The experiences of growers in the different producing areas of Ohio have influenced the final ratings. Additional experiences in different part of the state may change the ratings of the varieties being discussed in this report.

In addition to the varieties described there are a number of more recently introduced varieties which are promising, but are too new to be properly evaluated. Among the newer varieties which are of particular interest are the standard June bearing varieties *Armour*, *Erie*, *Empire*, *Essex*, *Eden*, and *Tennessean*, the red stele resistant varieties *Red Crop* and *Vermilion*, and the everbearing variety *Red Rich*. The suitability of these varieties for production in Ohio is presently being ascertained by the Ohio Agricultural Experiment Station.

IMPORTANT COMMERCIAL VARIETIES

Premier (Howard 17) has been a leading commercial variety for many years and still maintains this favored position in most parts of Ohio. Premier sets only on average number of runner plants but forms a sufficiently good matted-row to give high yields. The fruit is only average in dessert quality and firmness, and the berries may become quite small toward the end of the season.

Blakemore is a standard variety in Southern Ohio but forms an excess stand of runner plants in the regions farther north. The fruit is of average size and quality, and is sufficiently firm to be an excellent shipper.

Fairland is one of the best red stele resistant strawberry varieties for Ohio. The vigorous plants produce good crops of berries which ripen with Premier. The fruit is large, bright red, and somewhat firmer than Premier.

Pathfinder produces good yields of large fruit which may be a bit soft and tend to bruise easily. This variety is useful as an early-mid-season sort resistant to Red Stele.

Catskill produces large, high quality berries but has been quite erratic in its yields. It should be planted in small test-size areas with the grower is convinced it is adapted to his particular soil and cultural conditions.

Robinson has attracted a great deal of favorable attention from growers in the last few years. This variety appears to be very promising. Robinson produces high yields of large, bright red, round-conic berries which frequently sell at a premium price over other varieties. Commercial growers should try a few plants of Robinson.

Temple is a midseason variety which is of value because of its resistance to red stele. In limited tests, the yields have been variable. The crop may be quite light in a rainy season when the plants appear to develop excessive vigor. The plants of Temple are quite vigorous and the short-stemmed berries may be somewhat difficult to pick.

Sparkle is another variety which is resistant to Red Stele. This variety ripens over a long period starting at about midseason. Sparkle is one of the most productive late-ripening strawberries which has been tested at Wooster. The fruit is of sparkling red color, good size, and fine for freezing.

Those growers who desire fine quality berries, even at the cost of lower yields, may wish to plant Dorsett, Fairfax, or Fairpeake. Fairfax and Fairpeake are considered too dark in color to be good market berries and are not usually rated among the best for freezing.

THE TENNESSEE STRAWBERRY VARIETIES

During recent years the Tennessee Experiment Station has introduced several new strawberry varieties. Although these have not yet been tested sufficiently in Ohio to warrant a final evaluation, the following comments seem justified.

Tennessee Shipper ripens early and seems to be a promising shipping variety in the Blakemore territory. A 5-year test at the Western Kentucky Experiment Station indicated that Tennessee Shipper produced 14 percent less fruit than Blakemore.

Tennessee Beauty is a productive late-ripening strawberry which is of value in Southern Ohio. Tennessee Beauty is much more productive than Aroma which ripens at the same time.

Tennessee Supreme is a very productive variety but is too soft for commercial shipping. It may have value for home use, local sales, and quick freezing.

EVERBEARING STRAWBERRY VARIETIES

As a general rule, everbearing strawberries have not been very satisfactory as a commercial crop. Rather good results may be obtained however, if the plants are raised under a system where adequate soil moisture is provided, and the berries are kept free from dirt. A number of growers have secured good yields from everbearing varieties when sawdust was used as a mulch and the runner plants were spaced about 12 inches apart in each direction. Full details of this method of production may be secured by sending a request to the Experiment Station.

Brilliant has given the best yields of berries during the later summer and fall months. Brilliant appears to be an outstanding variety which produces adequate numbers of runner plants. The berries are large averaging about one inch in diameter and are of average quality.

Superfection has become the most popular everbearing variety in Ohio. The variety closely resembles Brilliant in vigor, berry size and berry quality. It is not so productive as Brilliant.

Gem is a desirable everbearing variety which is being replaced by Superfection and Brilliant varieties which it closely resembles. It has good growth and berry characteristics, but is not as productive as Superfection.

TABLE 5.—Evaluation of strawberry varieties for Ohio

Variety	Ripening period	Yield	Remarks
1) Most important commercial varieties.			
Premier	Early	Very high	Proved through many seasons, on many soil types
2) Varieties for limited commercial planting.			
Blakemore	Early	High	A dependable producer southern Ohio.
Fairland	Early-midseason	High	Promising variety resistant to red stele
Pathfinder	Early-midseason	Medium	Promising new variety
Catskill	Midseason	Medium	At least partially resistant to red stele
Robinson	Midseason	High	A fine berry but its yields may be quite erratic
Temple Sparkle	Midseason Midseason-late	Medium High	Very promising variety. Fine large berries Resistant to red stele The best late-midseason variety. Resistant to red stele
3) Varieties to satisfy special local demands			
Dorsett	Early-midseason	Low	Plant only if its high quality fruit brings a premium price
Dresden	Early-midseason	Medium	Premier preferred; quality and Yield only average
Dunlap	Early-midseason	Medium	Premier preferred; quality and yield only average
Maytime	Early-midseason	Medium	May have a place in southern Ohio
Fairfax	Midseason	Medium-high	High quality but dark color
Aroma	Late	Medium	Good on heavy soils in southern Ohio
Fairpeake	Late	Medium	High quality but dark color. Sparkle preferred
Chesapeake	Late	Low	Of minor value for late berries. Sparkle preferred
Redstar	Late	Low	Of minor value for late berries. Sparkle preferred

RASPBERRIES

Raspberries are grown on some 4000 acres in Ohio. The black varieties comprise about two-thirds of the acreage with red sorts occupying the remainder.

Purple raspberries are grown in limited quantities. The planting of this type of bramble could probably be increased to advantage as the fruit is of fine quality and excellent for freezing.

Red raspberries should not be grown within 100 yards of black raspberries because of the transfer of mosaic from the red to the black varieties. This precaution should be observed with purple raspberries.

RED RASPBERRIES (Listed in order of ripening)

Sunrise—This vigorous, hardy raspberry may be planted in limited quantities if an early ripening variety is desired. The yield, size, quality and firmness of this berry are only average. The bushes are susceptible to mosaic.

Marcy—Marcy produces large berries and high yields. It seems fairly resistant to mosaic. It has not been hardy at the Station however, especially to low temperatures late in the spring. Marcy is not recommended for Ohio because of this tender condition of the canes.

Taylor—Taylor plants have been **v i g o r o u s** and productive at Wooster, and the berries have been of good size and of higher quality than those of Latham. The variety ripens at the same season as Latham. Its plants seem fairly hardy and should be tested more extensively in various parts of the State.

Latham—The standard red variety for Ohio is Latham, which produces large, firm berries of fairly good quality. The plants are especially vigorous, productive and suitable for a variety of soils. Latham plants are hardy to low winter temperatures in Ohio. Although they are subject to mosaic, they produce well in spite of the disease. The fruit is easy to pick and the season is fairly long.

Milton—This late ripening red raspberry appears to have a real place with growers who want to extend the picking season. The canes are vigorous, erect, productive, and are more resistant to mosaic than Latham or Taylor. This variety is not as hardy as Latham but is more so than Marcy and suffers only moderate winter injury in Ohio. The fruit is large, firm, non-crumbling, and of good quality with a mild sub-acid flavor. The fruit is good for freezing.

BLACK RASPBERRIES (Listed in order of ripening)

Logan (New Logan)—This black raspberry is rapidly becoming the most important commercial variety in Ohio. Logan bushes can usually be picked over at least once before the Cumberlands are ripe. Yields at the station have been about equal to those of Cumberland, but the quality and size of the berries have been somewhat better.

Bristol—This is a relatively new variety from the New York State Agricultural Experiment Station. It ripens just before Logan and before, or during, the Cumberland season. During the last 3 years, the Bristol berries have been larger, higher in quality, and higher yielding than those of Logan or Cumberland. Bristol seems well worthy of more extensive trial in Ohio.

Cumberland—This variety was once the standard commercial black raspberry in Ohio but in recent years has been superseded by Logan. It is attractive, glossy, large, firm, and of good quality. The plants are very susceptible to anthracnose, as well as to virus diseases. They are vigorous and productive, however, where these diseases are at a minimum.

Naples—This is another New York Station introduction. It ripens during the latter part of, and just after, the Cumberland season. Its fruit is of fairly high quality, and its plants have been vigorous though only fairly productive. It may be useful for extending the picking season.

Morrison—This is another late-ripening black raspberry which has been highly advertised in recent years. Although not as productive and profitable as the earlier types it is promising where a late variety is desired to extend the picking season. The canes are vigorous and productive. The fruit is somewhat above average in size, firmness, and dessert quality.

PURPLE RASPBERRIES

Sodus—This is a very promising variety which is highly recommended for limited planting where purples are desired. The plants are extremely vigorous and productive. It has been more satisfactory than either the Potomac or Columbian. Its fruit is larger, lighter in color, and of higher quality than that of Potomac because of greater resistance to mosaic. Sodus is being used considerably for canning in New York State. This variety is subject to mosaic and, therefore, should not be grown near such varieties as Latham.

Marion—This variety is suggested for trial where a purple berry ripening after Sodus is desired. The berries are large, firm, and of fairly good quality. The plants are vigorous and hardy and bear well.

EVERBEARING RASPBERRIES

Everbearing raspberries, which bear both summer and fall crops, are popular with home gardeners and growers who supply special markets. Production of the fall crop is seriously curtailed by early frosts. The only desirable everbearing types at this time are red raspberries.

Durham ripens its fall crop the earliest of any of the everbearing raspberries. The fruit is large and attractive, but is of only fair quality.

September matures its fall crop about four weeks earlier than Indian Summer. The berries are large attractive and of good quality.

Indian Summer is one of the older better known everbearing sorts. The berries are large, attractive, and of good quality, but with a tendency to crumble. It is the last of everbearings to mature its fall crop and its production is often limited by frost.

BLACKBERRIES

As a cultivated crop blackberries are of minor importance in Ohio. This is undoubtedly due in part to the prevalence of wild plants in many parts of the state.

Blackberries are relatively easy to grow where adequate space is available. For best results the new canes should be summer pinched at a height of about 30 inches to encourage the development of a well-branched low bush-type of growth. The laterals should be pruned to about 15 inches long in the late winter or early spring dormant season pruning.

Eldorado—The Eldorado is recommended at present as the standard blackberry in Ohio. It is glossy, attractive, and fairly large. The canes are vigorous and strong. The plants are productive, and the quality of the berries is good. True to name stock is not always obtained, but the true Eldorado is probably the best variety for this state.

BOYSENBERRIES, DEWBERRIES AND OTHER TRAILING BRAMBLES

Boysenberries have never been a satisfactory crop in Ohio. The plants are susceptible to killing by cold winter, which leaves very few canes to produce fruit. The trailing thorny canes should be trained

along a trellis of some sort. This procedure involves considerably more labor than the pruning and training of raspberries and blackberries. Although the fruit is large and attractive when well ripened, it has been difficult to secure good quality berries in Ohio. Until the berry is thoroughly ripe it is sour and poor in flavor. The final ripening process proceeds rapidly and the berry becomes soft in a very short time and is attacked by ants and bees unless picked immediately. Lastly the plants are more susceptible to crown gall than most brambles. This adds a further hazard to boysenberry production.

All factors considered, the fruit grower and gardener will get much more fruit and profit from raspberries than from boysenberries.

Loganberries, dewberries and youngberries are somewhat similar to boysenberries and are not adapted to Ohio conditions.

CURRENTS AND GOOSEBERRIES

Wilder and **Red Lake** are probably the best red currants for Ohio. The Red Lake ripens slightly later than Wilder and produces larger clusters and berries. Both varieties are vigorous, hardy, and productive.

Downing is the standard green-colored gooseberry in Ohio. **Poorman** is a high quality red gooseberry, and is preferred by many growers. Fredonia is a good quality red variety ripening after Poorman. All of the above gooseberries are vigorous, hardy, and productive.

The commonly planted varieties of currants and gooseberries are self-fertile where insects are present to facilitate pollen transfer and, therefore, no provision need be made for cross-pollination.

BLUEBERRIES

Blueberries are grown in a number of locations in Ohio. They are a desirable crop for diversifying the fruit enterprise on farms which have a suitable site and soil. They are also useful in the small backyard fruit planting.

Blueberries require an acid soil containing a liberal amount of organic matter and a good moisture supply throughout the season. Unless these conditions are available or can be provided, blueberry plants will make relatively poor growth and will be unproductive and unprofitable. Detailed information on the production of blueberries may be secured by sending such a request to the Experiment Station at Wooster.

The wild blueberries (*Vaccinium*) are sometimes incorrectly called huckleberries (*Gaylussacia*). There are distinct differences between

the two fruits. Probably the simplest means of distinction is that the blueberry contains many small seeds, whereas the huckleberry contains 10 large hard-coated seeds.

Jersey appears to be the most dependable blueberry for planting in Ohio at the present time. This late-ripening variety should constitute the bulk of most commercial plantings.

If other varieties are desired for extending the picking season or for pollination purposes Rancocas or Stanley may be planted to ripen during early-midseason; Dixi and Pemberton to ripen just before Jersey; Atlantic to ripen with Jersey; and Burlington as a late variety to close the season.

The following varieties are listed in approximate order of ripening.

Rancocas is an erect bush of medium vigor which produces good yields of medium-sized light blue berries in tight clusters. Rancocas is very resistant to stunt and stem canker but susceptible to leaf spot. The berries may crack badly in a rainy season.

Stanley is useful as an early-midseason variety. The bush is upright-open in form and requires little pruning. The first berries to ripen are very large but the fruit may become quite small at the end of the season. The berries are very aromatic and of high dessert quality.

Dixi produces berries of exceptionally large size and fine flavor which ripen just before Jersey. This variety is productive but the large scar makes the fruit less desirable for shipping than Jersey and most other varieties.

Pemberton ripens just before Jersey, but, like Dixi, the skin tears rather badly when the fruit is picked. The large berries are borne in loose clusters on a very vigorous bush.

Jersey is the best late-ripening blueberry and is vigorous, productive and easy to prune. The large berries are borne in long, loose clusters. The fruit is of good blue color, average dessert quality, firm, and has a good scar with relatively little tearing of the skin.

Atlantic ripens with Jersey and is a promising productive, vigorous, large-fruited variety. The berries are borne in loose clusters and are of above average dessert quality. The scar is good.

Burlington is important because of its late ripening characteristic as for its fine scar, good flavor and above average dessert quality. The berries are only average in size.

In addition to the blueberry varieties which have been described there are a number of new introductions which are presently being evaluated for Ohio. Among these are new varieties which appear promising are Coville, Berkeley, Ivanhoe, Herbert, Bluecrop, and Earlyblue. Although these new varieties appear promising they have not been sufficiently tested to warrant recommending for use in Ohio. Planting of these varieties should be limited to a trial basis until more is known concerning their responses to Ohio conditions.

Pollination requirements of blueberries

Most blueberry varieties produce fairly satisfactory crops of fruit when planted alone and without provision for cross-pollination. In some localities however, there are indications that better yields are secured when several varieties are interplanted. Since most growers will desire more than one variety to provide an extended picking season, it is advisable to have at least two varieties in the planting to insure pollination. Two rows of one kind followed by two of another is the usual recommendation.