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Cherries

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The Cherry Situation

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DEPARTMENT OF AGRICULTURAL ECONOMICS

1964

THE ECONOMICS OF FRUIT FARMING

REPORT No. 9

The Cherry Situation

*An examination of the present state of
cherry growing, with an outline of the changes to be
expected in the next twenty years*

January 1964

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During the first really hot days of the year, when the air tends to be drier than in August, many people's thoughts turn to cherries. They would, perhaps, prefer just then a handful of sweet, ripe cherries to an ice-cream or a cold drink. This sort of fickle and short-lived demand is most difficult to cater for and as the produce desired is easily damaged and quickly perishable, it has been well-nigh impossible to meet this demand universally and at a reasonable cost. Consequently, the desires of consumers remain unsatisfied and cherries slowly lose their appeal.

But this is not all. Cherries have also been losing favour with producers. Trees decline, bearing acreage dwindles and the "trade" is not lively enough, as yet, to persuade growers to reverse the downward trend in production. Cherry-growers are known to be suffering from a scarcity of pickers to move about trees, high up on a ladder; but a short-leg or even a dwarf cherry tree would not overcome many of the inherent handicaps of cherries as a commercial farm crop. If they are to be grown for profit, in a rational farm plan, their production is likely to be limited and no upsurge in permanent production of good quality cherries can be expected, even though they may become relatively more profitable to grow in the right situation than dessert apples. The most likely extension of cherry-growing for the market would seem to be as a replacement of the present old mixed orchards on farms in the recognized cherry-growing districts. In terms of volume, the production of cherries in Britain is very small: the value of the annual output is about £2½ million, which amounts to 1·8 per cent. of the total estimated gross annual output of fruit, vegetables and flowers, or 4·5 per cent. of the annual output of fruit alone. The 260,000 tons of dessert apples produced each year in the United Kingdom make the 23,000 tons of cherries look very small. Nevertheless, cherries have been an important crop on large Kentish farms for many generations, and their future is a matter of concern for the whole county because, more so even than hops, they are peculiarly a Kentish crop. In many respects they are a unique fruit and a unique farm crop. What is happening to other English fruits—apples, pears and plums—is no guide to what may happen to cherries, even though the peculiar features of the cherry are best demonstrated by reference to apples and pears. This study will show how distinct are the characteristics of the demand for, and supply of, cherries.

The Ministry of Agriculture, Fisheries and Food was particularly helpful at the outset of this work in furnishing basic data about

acreage of cherries and number of farms engaged in cherry growing. Further information has been sought from a great number of people, many of whom have had a lifetime's experience of cherry growing and selling. The College is grateful to those who have shown us their records and contributed their ideas and experiences.

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Reader and Head of Department

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PART I

SWEET CHERRIES IN THE MARKET

CHAPTER I

THE DEMAND FOR CHERRIES

The Uses of Cherries

The English cherry is used in three distinct ways and each of these takes fruit of different characteristics off the market. For eating out of hand a full, ripe fruit is preferred: for stewing or bottling the fruit can be smaller, less sweet and of lower quality generally. These household uses of the cherry are known to most people. There is a third use, however, which escapes public notice, and this is preservation. Nowadays, up to 3,000 tons of the English cherry crop is thought to pass to processors: white cherries are most in demand for this purpose, and are required to be free from blemish and barely ripe, so that the flesh is firm, and remains so during the preservation process.

Fresh cherries attract consumers with a promise of sweetness, juiciness and unique flavour. On the average, some 20-30,000 tons are now bought as fresh cherries each year. During their short season cherries have to contend for purchase with apples and pears from southern hemisphere countries, with citrus fruit and soft fruit, particularly strawberries: but more than any other fruit, perhaps, cherries for British consumers herald the season of abundance. Yet consumption remains casual and much, maybe one quarter of what is bought, is consigned to the stewpan. When consumers in England buy an average of 3,500 tons of cherries each week of the marketing season, each individual's contribution will often be an additional fruit purchase and not a transfer of purchase away from other fruit. Increased consumers' spending on cherries would not be to the detriment of non-cherry growers in England. And as spending power increases, so does the capacity for casual purchases: but cherry prices seem curiously unresponsive to normal economic influences. For example there is comparatively little difference in price between cherries for different uses, although their market quality may be very different. Also, a short crop does not send the price rocketing and a large crop does not necessarily mean low net returns to growers. In short, the market for fresh cherries has all the appearance of being completely unimproved, which state is hardly in keeping with the present day and age. Here is a fruit which is thought

to have a particular appeal: being the first fresh orchard fruit of the year it will always have a certain novelty; and it meets no competition as an "impulse" purchase. Yet the market is dull. If consumers' habits have not changed, the "street cry" philosophy of former days may still be an appropriate way of selling cherries, but there are now more modern ways of advertising them than in the days of streetsellers.

The processed cherry is in no wise comparable with the fresh article, since in the course of being processed, juiciness, flavour, texture and mellowness are lost. The fruit becomes rather dry and bright red with a more or less sweet flavour, according to the process used. The use of cherries in the confectionery and preserved fruit trade is said to be due to the low cost at which they can supply decorative bright colour, firm round shape and innocuous flavour. In other processes such as the manufacture of cherry brandy, the essence of the fruit is used and appearance is of no importance; acid cherries are used in such processes but few are grown in Britain.

Demand for cherries for preserving depends on their market price, more being taken off the market when prices are low and less when they are high; in recent years about 11,000 tons have been used in this way each season.

Consumption Trends in Britain

Consumption of cherries in all forms has altered little in the last ten years, and is now about 1.46 lb. per head of the population, but there has been a change in the form in which the fruit is preferred. Between the years 1952-53 and 1960-61 there was a drop in the proportion of the crop sold fresh, from 72.5 per cent. to 65 per cent. This is as if everyone in the country bought 1 lb. of fresh cherries and $\frac{1}{2}$ lb. preserved cherries each year. There is a trend in countries with comparatively high living standards for less of certain fruits and vegetables to be eaten fresh and more to be eaten in various processed forms. To buy fresh cherries is an expression on the part of the buyer of a preference for that particular fruit over all the alternative attractions. To buy confections of which cherries are a nominal or perhaps quite subordinate part is certainly not an expression of preference for the fruit itself. Since less is eaten fresh it can only be concluded that there is less real demand for the fruit than hitherto even though the same overall quantities are being consumed. In by-gone days the arrival of the fresh fruit season brought welcome alternatives to the small range of available indulgences; this is no longer true.

United States' fashions and trends in food consumption are often shown to be somewhat ahead of those in Britain. Even in the pre-war days, consumption per head of fresh cherries in the U.S.A.

was lower than it is in Britain today. No doubt the distance to market was often prohibitive there, but it is perhaps no coincidence that neither American technical ingenuity nor sales promotion prowess has made the cherry a popular fruit there. Figure 1 shows how the total consumption has declined since 1950 and how the consumption of fresh cherries per person is now only half of what it was twenty-five years ago. In 1938 the proportion of the total amount consumed fresh was 44 per cent. but by 1961 this had fallen to 20 per cent. At the current rate of change in Britain it would take until the year 2009 to reach this stage, but the present rate of change will almost certainly speed up.

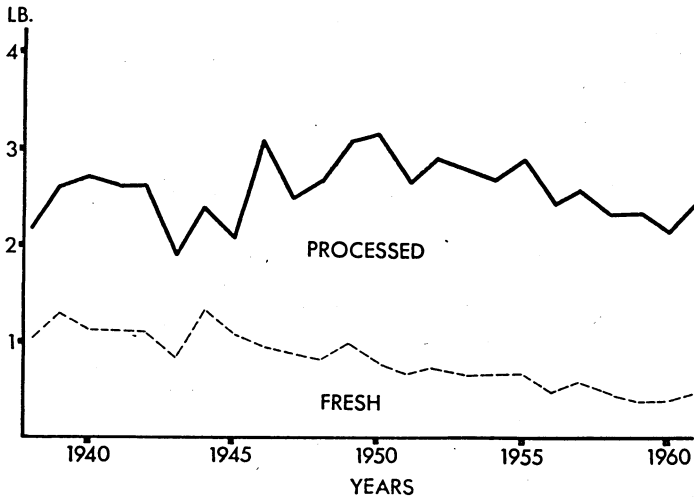


FIG. 1.
UNITED STATES: CHERRY CONSUMPTION PER PERSON.

Domestic Use

Little is known about the household consumption of cherries, as given in food survey reports, because cherries are not listed separately but grouped with other stone fruits (Table 1). Thirty per cent. of housewives bought cherries as a seasonal fruit (compared with 70 per cent. for strawberries), according to a recent consumer research report.

Cherries are likely to be the main stone fruit bought in the second quarter of the year, but during the third quarter consumption of cherries must be secondary to that of plums and gages. Apparently, infrequent purchases of preserved cherries occur throughout the winter months.

TABLE 1.
STONE FRUITS—SEASONAL CONSUMPTION IN 1960

	Quarter of year			
	1	2	3	4
Pence per head per week	0.08	0.39	1.83	0.04
oz. per head per week	0.05	0.31	2.16	0.05

Source: Domestic Food Consumption and Expenditure, H.M.S.O., 1960.

There appear to be significant regional differences in consumption. Taking the consumption of fresh stone fruit as a measure, statistics show that 25 million people living in the South East, South West and Midland regions of England consume an average of 0.75 oz. per head per week of stone fruits while for 27 million living elsewhere in Britain the figure is 0.38 oz. per head per week. In London alone an average of 1.15 oz. of fresh stone fruit is consumed by individuals each week.

Canning

The quantity of cherries canned varies from year to year, (see Table 2) depending upon stocks of preserved fruit and upon prices in the fresh market. Processors' supplies come direct from the grower as well as from the wholesale market: little is required in a typical agreement negotiated between canners and growers other than to specify the tonnage and varieties of fruit to be supplied.

TABLE 2.
QUANTITY OF HOME-PRODUCED CHERRIES USED BY CANNERS

Year	Usage of raw fruit	Production as net can contents
	tons	tons
1934-35	—	1,000
1953	1,200	1,700
1954	1,400	2,000
1955	1,600	2,200
1956	3,000	4,200
1957	1,400	2,100
1958	2,600	3,600
1959	1,100	1,500
1960	2,100	3,000

Source: Ministry of Agriculture, Fisheries and Food.

Consumption in Western Europe

When cherry growing and consumption is looked at in the European context it becomes apparent that Britain falls some way behind most other countries. The figures in Table 3 are of apparent

national consumption—i.e. total production minus fresh and processed exports plus fresh fruit imports of both sweet and sour cherries. Although Italy annually exports 12–20,000 tons of processed fruit this quantity is not picked up as “imports” in the statistics of other countries.

TABLE 3.
EUROPEAN COUNTRIES—APPARENT ANNUAL CHERRY CONSUMPTION

Country	Av. quantity available for purchase fresh (tons)	Approx. population (millions)	Approx. consumption as fresh fruit per person (lb./head)
Switzerland	51,469	5	23.0
Austria	31,414	7	10.0
West Germany	223,942	55	9.1
Yugoslavia	65,394	18	9.1
Italy	139,574	49	6.3
Belgium	19,038	9	4.7
France	77,561	45	3.8
Netherlands	11,424	11	2.3
United Kingdom	25,365	52	1.1

Source: Fruit Intelligence.

The Swiss figures includes a large tonnage for use in the food processing trade and for liqueur production but otherwise the figures reflect different food consumption habits in these countries.

For the fifteen OECD countries* the average production in the years 1954 to 1959 was 645,000 metric tons and the last 30 years have witnessed a substantial increase in the volume of trade in cherries; a pre-war production figure of 503,000 metric tons is quoted by OECD. Prior to the Second World War, trade in surplus production between these countries was sufficient for their needs but since 1945 the demand within the area has increased until there is currently a 15 per cent. deficit made good mainly by imports from East European countries.

Italian production has risen by about 54 per cent. over the last ten years and a considerable new acreage has been planted, but the brake has been put on more recently. In Germany over the period 1950–58 there has been an increase of 2,000,000 bearing trees but these have not yet produced sufficient fruit to meet the demand and imports have been increased too. The acreage of young trees not in bearing was 42 per cent. higher in 1958 than in 1950 and when these

* Austria, Belgium, Denmark, France, Germany, Greece, Holland, Italy, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom.

900,000 extra trees are in bearing at the average level of 44 lb. per tree, they could produce the same quantity as is now imported, but it is not clear how far they will replace imports of sweet cherries. European cherry production and trade figures for 1957 to 1962 are given in Appendix 3. The increased production in Germany and Italy and the shifts in demand may leave OECD countries more self-sufficient in cherries than at present but imports from East Europe will continue as part of reciprocal trade agreements if for no other reason.

CHAPTER 2

SUPPLIES OF CHERRIES

Home Supplies

The demand for cherries for all uses is met from two sources: home production and imports from countries mainly within Europe having surplus production. In recent years the relative amounts have been of the order of 23,000 tons home-produced and 11,000 tons imported.

The home produced element is currently grown on about 12,000 bearing acres of cherry orchard throughout England and Wales, Kent being the main centre of production with Worcestershire leading the remaining counties. Table 4 gives the percentage of the total national cherry acreage located in the seven leading counties in 1957.

TABLE 4.
CHERRY ACREAGE BY COUNTIES; ALL AGES; 1957

Kent	Worcs.	Bucks.	Hereford	Berks.	Glos.	Herts.	Other
per cent. of total for England and Wales							
74.6	8.5	3.9	2.7	2.1	1.0	0.5	6.7

Source: Ministry of Agriculture, Fisheries and Food.

The market has been accustomed to the present level of supplies for the last ten or fifteen years—since 1946, in fact. Neither the home-grown crop nor the volume of fresh imports has shown any firm tendency to rise during this period: home production was lifted to the present level after World War II, largely by the crop from trees planted during the relative “boom” of the early 1920’s. As far as can be judged from the statistics available, the year of peak home production was 1952 (37,200 tons).

Growth in the home supply may be followed from the five-year average production figures shown in Table 5.

A two-thirds increase in production is shown to have taken place in the last thirty years. During that time the population of Britain has increased from 46 million to 52 million, and the average individual’s purchasing power by at least 40 per cent. Production of

TABLE 5.
FIVE-YEAR AVERAGE PRODUCTION OF CHERRIES:
ENGLAND AND WALES

Years	Five-Year Average Production tons
1926-30	14,700
1931-35	15,470
1936-40	12,930
1941-45	18,400
1946-50	23,000
1951-55	22,820
1956-60	23,960

Source: Ministry of Agriculture, Fisheries and Food.

other dessert fruit (apples and pears) has increased six-fold in the same period, but despite this large increase average prices for these fruits are now relatively higher than those for cherries. Prices of apples and pears appear high in the published annual statistics because of the amount of stored fruit sold at relatively high prices, but mid-season prices of good dessert apples and pears are also high relatively to prices of cherries.

Imported Supplies

Imports of fresh cherries into Britain were at a peak of 3,700 tons in 1951, and have been much below this level since then.

The main exporting OECD countries are Italy and Belgium but France is currently building up an export trade. All other member countries are to some extent importers. Countries exporting into the OECD area include Hungary, Czechoslovakia, Yugoslavia and East Germany.

The European producing areas fall into three distinct categories with different seasons of production. The south of France and northern Italy have seasons beginning in early or mid May: the mountain areas of northern Italy have a season beginning in mid July: the producing areas in northern France, Belgium, Holland, Germany and Scandinavia have a season beginning in mid June—Austria and Switzerland are similar. Countries in the same group are subject to similar weather conditions and a light crop for one often means a light crop for all: for instance, a light crop in north-west Europe means that there is a keen demand for the Italian exportable surplus, made even keener by the smaller size of the Belgian surplus. In a season of heavy crops the Italian surplus is less in demand and all countries process more fruit; this is only a partial solution because much of the surplus is of black cherries

which are less suitable for preserving. Southern Europe is climatically more favourable to cherries than southern Britain and an attempt is made in Chapter 7 of this report to assess what sort of danger this situation holds for the English producer. In recent years there has been a small but increasing trade in fresh cherries from British Columbia and South Africa: these suppliers, however, send predominantly preserved cherries.

There is no reason to suppose that the quality of cherries flowing along the normal market channels on the continent is markedly superior to that in the English market. What is noticeable is that fruit destined for export is carefully handled, well sorted and free from damage; in this way it withstands a journey in refrigerated trucks and normally arrives on the market in sound ripe condition. Italian fruit on the English market is usually superior in quality and regularity to the general run of the home-grown produce but not superior to the better quality home-grown fruit.

English growers who are prone mentally to abandon a large share of the English market to imports may not be aware of the extent of continental demand. The European Economic Community has been a net importer of cherries. Under present plans it will become more than self-sufficient, because there is some new planting in Italy and vast new plantings in Western Germany—how much is replacement and how much a net addition of acreage is not known. However, the Italian harvest will precede the German and the German appetite for cherries being what it is, it seems fair to conclude that as the already much-expanded Italian production has not meant increased exports to Britain, the projected smaller future increase will not have as dire effect in England as the pessimists had imagined.

Over the last ten years imports from Italy have tended to be relatively heavy in the years when the English crop is good, and to be smaller when the English crop is light: in fact the "normal" English crop has had fewer Italian cherries to contend with than an abnormal one. It is quite reasonable to conclude that exports from Italy are stimulated either when the English crop is short, and prices presumably high, or when both Italian and English crops are high, and merchants are looking for outlets for the excess Italian production.

At present, plant health regulations are occasionally invoked to prevent the import of fruit infected with fruit fly: this happens only occasionally and before the time of normal prohibition of imports. The retention of plant health regulations after the lifting of other import restrictions would have little effect on the market supply and the European Economic Community is working stead-

fastly towards higher standards of plant health, so making infringement less likely.

Appendix 2 gives details of the current restrictions imposed on cherries imported from various countries. They vary from a 10% *ad valorem* levy to an outright ban. The effect of these restrictions is to shut off supplies from France and Italy during the last two weeks of marketing from early areas (assuming a season of similar length to our own) and to eliminate the possibility of mid- and late-season supplies from Belgium, the majority of which presently go to Holland.

The following two pages present the production, import and utilization picture as at present understood. Table 6 shows the situation in a typical recent year. Figure 2 summarizes experience over the last ten years in a diagrammatic rather than a precise way. There is as complete a factual documentation of the supply position as possible given in Appendix 5 (page 75).

TABLE 6.
SUMMARY OF SOURCES OF CHERRY SUPPLIES, UNITED KINGDOM, 1961

Source	'000 Tons
<i>United Kingdom</i>	
Harvested production	18.4
<i>Imports:</i>	
Fresh: Italy	2.3
Other	0.3
Processed:	11.1
	<hr/>
	32.1

The Ministry of Agriculture, Fisheries and Food estimated that 20,000 tons of cherries were available for fresh consumption, the remainder being processed.

Marketing Season

The marketing of the English cherry crop normally begins during the third week in June, and continues until the end of July. Growers in North Kent expect to start picking about June 17th, with a tolerance of up to ten days earlier or later according to the season. Other parts of Kent may be several days earlier or later than North Kent in any given year. The length of the season varies from year to year: a short season may be due either to a short crop or a late start: average market prices are affected by the yields of different varieties,

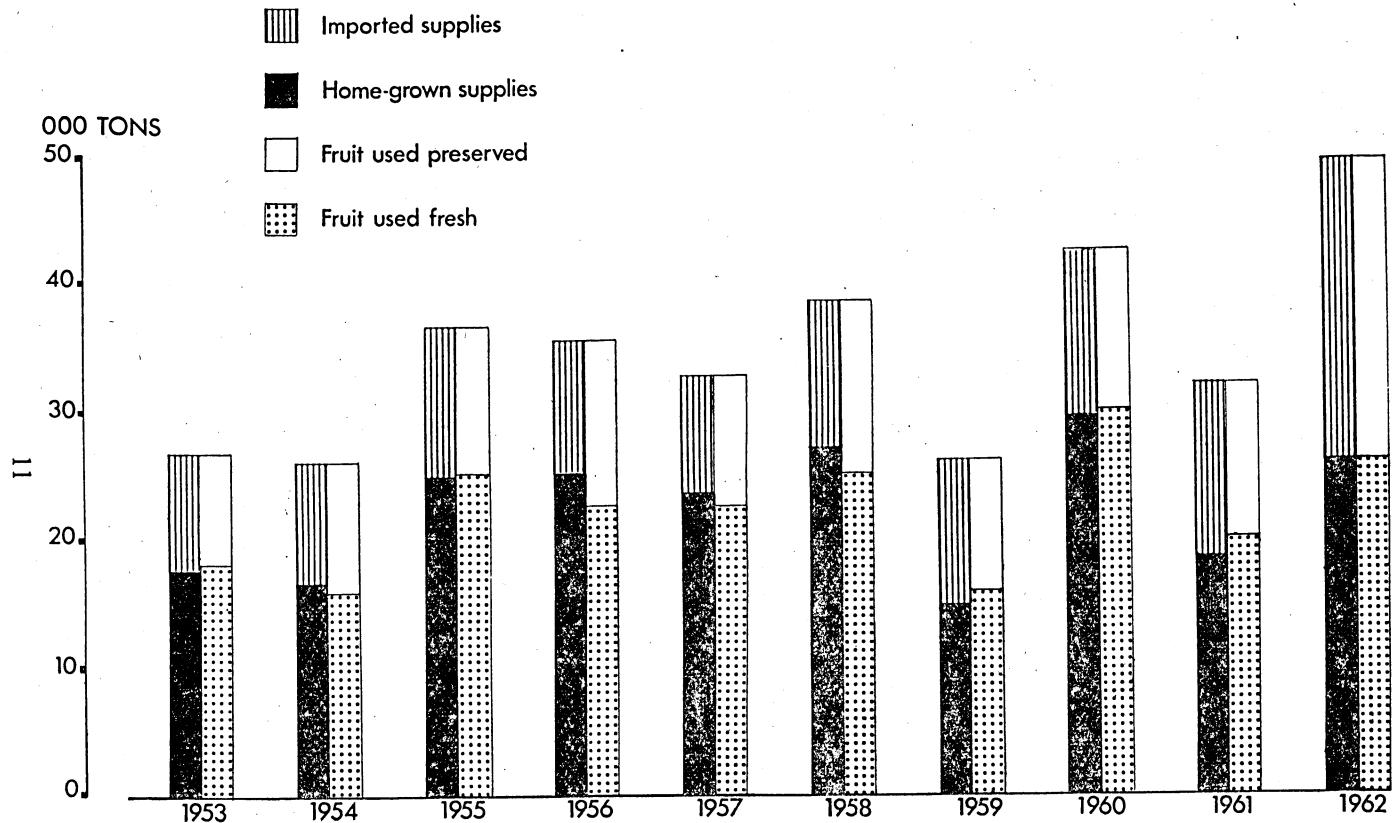


FIGURE 2.

UNITED KINGDOM: SOURCES OF SUPPLIES AND UTILIZATION 1953-62.

the size of crop and by the weather. Figure 3 illustrates these variations in marketing season as experienced on one farm (see below). But in any event the marketing season is comparatively short and speculation in long term storage has not been considered worthwhile. The lack of physical robustness makes the cherry an expensive fruit to market through the conventional channels: small packs are used to lessen the damage to the fruit and each day's production is moved off the farm as it is picked.

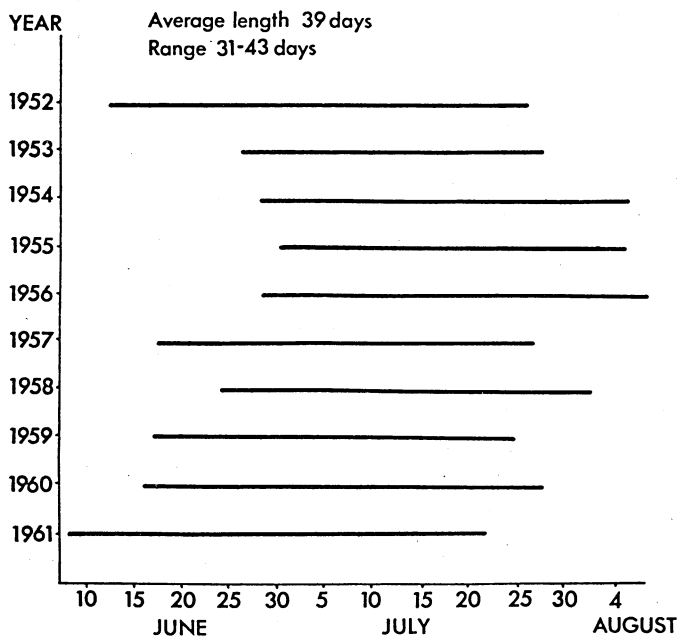


FIG. 3.
CHERRY PICKING SEASON—NORTH KENT. TIME AND LENGTH OF SEASON.

Early Rivers is the earliest variety and is perhaps the most commonly planted: it even merits separate statistical treatment—17 per cent. of the national acreage and 16.6 per cent. of the Kent acreage is of this variety. In the past it has been widely relied upon to give a good start for the picking gangs and to introduce the cherry to the market. Some picking of under-ripe fruit always occurs in an endeavour to catch the market: such fruit is small and the quality picked is poor compared with later varieties. Early Rivers is one of the few varieties “picked over” (i.e. each tree will be partially

picked two or three times, only the riper fruit being taken each time) and it forms the bulk of deliveries to market during the first ten or twelve days of the season. Although this variety makes up less than 16 per cent. of the weight of home-grown cherries it is the only English cherry on the market for 25 per cent. of the season for home-grown fruit.

Later varieties bulk more heavily and are easier to pick; pickers are paid less to gather them. The flow of fruit to the market builds up after the Early Rivers have been cleared and from a well-planned orchard a regular amount of fruit leaves the farm each working day.

Figure 4 is a summary of the daily sendings for the 1961 season on an 85-acre cherry unit in North Kent. A certain amount of

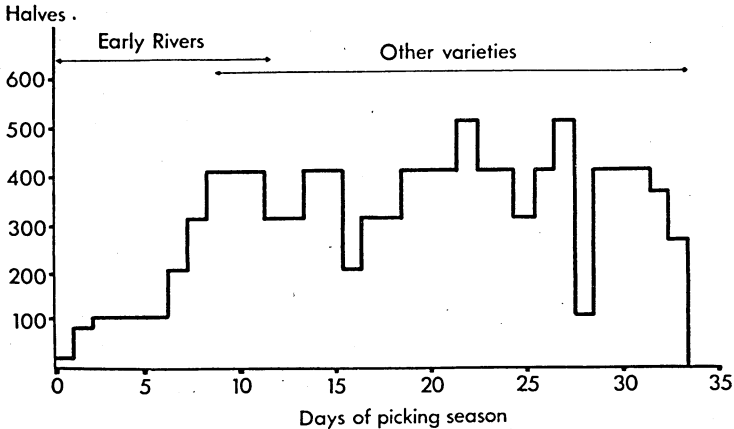


FIG. 4.

DAILY DESPATCHES TO MARKET FROM AN 85-ACRE UNIT IN NORTH KENT, CHERRY SEASON 1961.

disruption in the flow is caused by weekends and wet days but in general a steady amount of fruit was leaving the farm each working day.

There is no record of the quantities of cherries passing through the markets at different times of the season. It may be that quantities increase as the season progresses, because the crop records obtained from growers have shown the yields of the later-ripening varieties to be higher than those of early varieties. (This tendency of course, could be reversed if (a) there were many more "early" varieties than late varieties, or (b) if processors took off most of their supplies in the second half of the season.) A specific example is provided in Table 7, which covers 3 crop-years on one farm: average yield per tree is given for varieties classified according to their season of ripening. This particular orchard contained a fair proportion of

high yielding white varieties maturing in early mid-season—most of these were channelled to processors and as far as the quantities coming on to the fresh market are concerned, the “black” varieties’ column is a more reliable guide.

TABLE 7.
3-YEAR AVERAGE YIELD PER TREE—SEASON OF RIPENING

Unit—24 lb. Halves	All varieties	Black varieties
<i>Season</i>		
Early	2·15	2·15
Early-mid	3·89	2·63
Mid-season	2·40	2·40
Late-mid	2·29	2·21
Late	3·32	3·32

Method of Sale

The marketing of cherries has that diverse character which strikes the reformer as “chaos”, whereas in reality growers are generally making rational choices between the benefits to be derived from several alternative outlets. Half the cherry growers in Kent have less than five acres of trees. The marketing operation in these circumstances becomes a matter of picking, say, 165 trees at a rate of three times a week for a six weeks’ period: on average, less than 30 trees would be picked in each week, and the quantity picked might be 300 to 400 lb. at a time. Once this kind of marketing ceases (when trees are grubbed) it is not likely to be re-created. Circumstances of size and quality of crop vary so much from farm to farm and even from orchard to orchard, that regimentation of marketing would in some respects be hazardous. Table 8 summarizes the marketing procedures of the cross-section of growers approached in this connection, and instances the use made of central markets, local markets and processors.

TABLE 8.
POINT OF FIRST SALE OF CHERRIES—SAMPLE OF KENT FARMS

	London and Northern Wholesale	Local Wholesale and Retail	Canning
Approximate number of acres of crop normally disposed of to each	842	339	119
Per cent. of total	64·8	26	9·1

Small farmers with local outlets normally rely on them entirely; some large concerns send away about one-third of their crop to

each outlet: in the main the proportions sent to London wholesale markets sold locally and to processors usually vary little from year to year.

Quantities sent direct to northern markets are comparatively small, giving a short season of fairly good supplies rather than a full season of restricted supplies. Both early-season and late-season demand in the South of England is sufficiently keen to prevent consignments being sent northwards. Growers with considerable quantities to place on the market at any time send a proportion of their output directly to the provinces to avoid glutting the London trade: other quantities are reconsigned from London within the trade but high transport costs in either case often make the net return less favourable to the growers.

The annual auctions of fruit on the tree are an interesting tradition of Kent fruit growing. The call for trouble-free marketing arises in situations where cherry orchards have been planted on the best soils, but not necessarily on a fruit farm or even a farm with a ready-made picking staff. Fruit offered for auction is often from orchards attached to residences, partly as an amenity and partly as a source of supplementary income, but in all cases the grower or owner is prepared to sacrifice up to £170 an acre in revenue rather than become involved in the hurly-burly of picking and harvesting operations.

Buyers are interested in their local orchards either because they have too few cherries of their own to keep labour and equipment fully occupied or because they have special market connections which they wish to keep well-supplied. All buyers hope to make money by accepting the risk of subsequent crop or market failure as a result of weather: and they seem satisfied with the arrangement since the same buyer often takes the same orchard year after year.

The auctions take place a few weeks before the fruit is ripe and provide an estimate by the buyers of the season's crop and likely value. The range of prices paid—£5 to £200 an acre—suggests that buyers are under no illusions about the relative merits of orchards. About 1,000 acres are on offer annually. The Sittingbourne auction is the biggest, being an amalgamation of several previously held throughout North Kent. Between 400 and 500 acres are usually on offer there. Auctions are held at Maidstone and Horsmonden but these are becoming less significant as the acreage of cherries in these areas declines. Little successful new acreage of cherries is reported in the latter areas and existing orchards suffered badly in the wet winter of 1960.

CHAPTER 3

PRICES OF CHERRIES

Price Levels

In either a normal or a short crop year, not much of the Kentish crop appears to be sold beyond the southern counties, and the assembly points for distribution throughout the area served are the London wholesale markets. The price for the crop is established in these markets and other centres make local adjustments according to supply and demand at the time. Provincial markets are often poorly supplied with cherries but price adjustments are not always upwards; competition from other produce—strawberries for instance—not to mention possible loss of condition during transit, tend to make for a slow trade in cherries.

Prices for local sales are agreed with reference to the London prices. Likewise the price for cherries for canning is related to crop prospects and market prices for fresh cherries; the buying price is generally lower than the market price because of the bulk consignment and guaranteed sale elements in the deal. The weather has considerable influence upon market prices. For instance:

1. It largely determines the yield per acre, and hence the size of the crop and the related price, each year;
2. It may account for loss of quality of consignment before they reach the market and hence for a temporarily low market price;
3. On the demand side, by the increased interest in the fresh fruit in bright sunny conditions and the reverse in dull, wet conditions.

Other features affecting the ruling price of the English crop are:

1. Imported cherries are the first on the market: they are on sale for 4–5 weeks before the normal time of marketing of the first English fruit;
2. This first imported fruit commands a novelty premium of up to two shillings per lb. over the subsequent main season prices for English cherries;
3. In most seasons English and imported fruit consignments overlap by up to three weeks. The imported fruit may sell in the markets

at 1d. or 2d. per lb. above the average price for the English fruit;

4. Black cherries are preferred to white and sell for up to 9d. a lb. more than white cherries, according to circumstances;
5. The entire season in the markets lasts for 11 or 12 weeks;
6. There is usually a rise in market prices of between 1d. and 5d. a lb. in the last days of the season.

A look at the prices quoted in the Ministry of Agriculture, Fisheries and Food's market statistics will show that average wholesale prices have never really got away from the level at which they were controlled during the last war, twenty years ago (see Figure 5). The 25 per cent. increase in normal annual production since 1941-45 could have been absorbed at higher prices if demand had risen as fast as the disposable income of the general public.

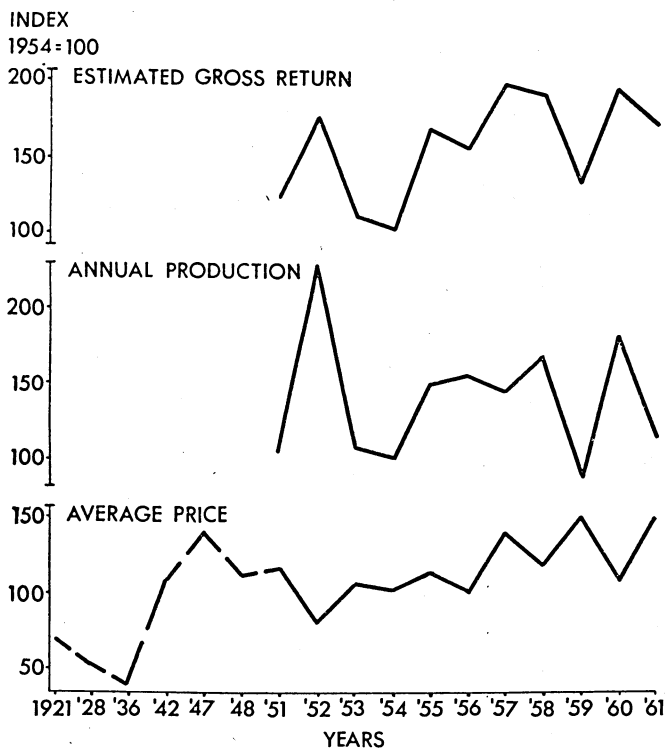


FIG. 5.

CHERRIES: INDICES OF ANNUAL PRODUCTION, PRICE AND ESTIMATED GROSS RETURN —ENGLISH CROP.

Price Variations

The wholesale price of English cherries is thus remarkable both for its relatively low long-term level and for its relative year-to-year stability considering the extent of changes in supply. While admitting that the year-to-year changes in quantity marketed are not known at all precisely, the annual estimates of production cover annual fluctuations wide enough, even with a considerable margin of error, to show up the characteristics of demand. Demand for cherries has all the appearances of elasticity. See Figure 5 for a presentation of supply and estimated gross revenue data for 1950-61: more often than not a high crop year (i.e. a year of relatively low prices) is a high revenue year.

What can account for the market's capacity to sell a large crop of English cherries, plus imports, at a price not much below that for a smaller crop? The most likely explanation is that a large crop is divided amongst more consumers than a small crop. It is not so much a question of higher consumption per consumer in a high-crop year as of steady consumption per consumer spread over more consumers—in other words, an extension of the market. In this way the falling utility of the crop to regular consumers is overcome. The more cherries there are, the further they travel from Kent, to pass to new consumers prepared to pay the ruling price. Additional costs for transport, and possibly some loss of condition in the fruit, entail lower returns to the wholesaler than might otherwise be the case, but in all probability he secures a higher return than if he were to attempt to sell the additional cherries to his regular customers. This feature of the market for cherries is discussed again in Part III.

Figure 6 shows the course of cherry prices (at wholesale) against the course of wage rates in horticulture. Steady prices and rising costs have been the horticulturist's lot during the past decade, but cherry growers have apparently had more to contend with in this respect than most other fruit-growers. There are differences between growing cherries and growing apples which account for the survival of so much of an "uneconomic" acreage of cherries. Although labour is so large a part of the whole cost of production of cherries, it is largely a variable cost and not a fixed cost: there is little unrequited labour on pruning, spraying, mowing and so on in the event of a crop failure. The expenditure on labour (for picking) need not be incurred unless the means of payment are already there. So the low level of fixed costs per acre makes retention of cherry trees financially possible long after they have ceased to be a credit to the industry.

There is little cause, moreover, to "blame the foreigner" for the low level of prices. The volume of imports of cherries has averaged

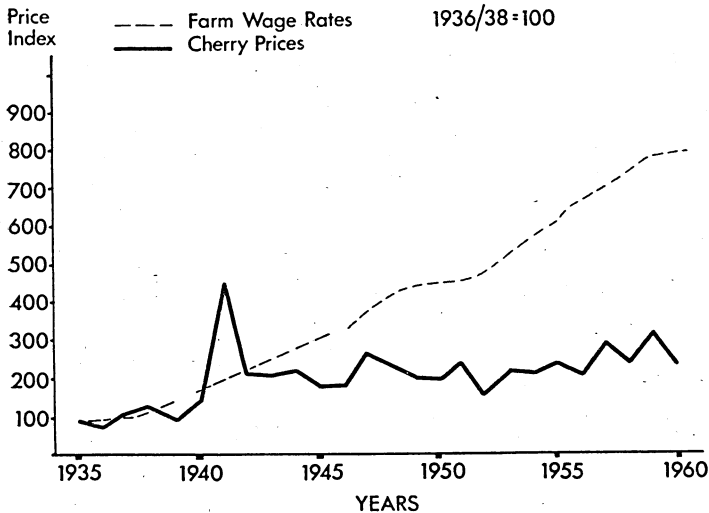


FIGURE 6.
ANNUAL PRICE INDICES 1935-1960.

about 7 per cent. of the volume of the English crop in the last ten years, with lower and upper limits of 2 per cent. and 22 per cent. Compared with 1938, the home growers' price had increased 2.5 times by 1959-61. Far from "creaming off" the market, the Italian exporter has experienced a rise of rather less than this—i.e. 2.4 times the 1938 value—and in fact the Italians could claim with some justification that the succession of early seasons for the English crop has lately ruined their normal price.

Considering that they are received early in the season, it would be expected that imported cherries would have a relatively high value. The declared value of fresh fruit imported into the United Kingdom, recently and pre-war, is set out in Table 9. It is apparent here that exporters of cherries receive a relatively low average price. Stone fruits as a whole seem at a discount; there are vastly increased quantities of peaches to account for their position in the table but cherries, although received in relatively small quantities which should have given them a scarcity value—are bottom of the table.

TABLE 9.

INDICES OF DECLARED VALUE OF FRESH FRUITS IMPORTED INTO THE UNITED KINGDOM, 1959 AND 1961 (TO BASE OF 1938)

	1938	per cwt.	
		1959	1961
Apples	100	464	502
Oranges	100	400	442
Pears	100	370	414
Grapes	100	359	410
Plums	100	318	332
Peaches	100	243	260
Cherries	100	219	258

Source : Fruit Intelligence.

CHAPTER 4

CONTROL OF SUPPLY

Acreage

In common with growers of other orchard fruit, cherry growers can think of long-term and short-term measures for increasing the production of cherries. The efficacy of short-term measures, however, is in question. There is evidence to show that average yields per acre of cherries tend to be higher on farms where the crop is given more fertilizer and generally "done" better. But it is just as likely that the higher expenditure is a result and not a cause of the higher yield—it is a reward to the trees, not a "shot in the arm". Again, there is evidence that the growers' efforts to raise yields during 1942 to 1945 were successful, but they were no doubt aided in their endeavours by a responsive segment of comparatively young trees: the same results could not be expected when all trees had become twenty years older.

So it is clear that if cherry growers intend to produce more cherries they will plant new orchards as a long-term policy, and be prepared to wait fifteen years to see their intention finally realized. There has been little re-planting during the last ten years which, being interpreted, means that growers have not wished to produce more cherries. Thoughts of the uncertainty in yield and quality of marketable fruit ensuing, dissuade growers from following a policy of maximizing yields in the short-term and the "stickiness" of price in short crop years damps down any tendency for speculative heavy fertilizing. Price guarantees as firm as those of wartime seem to be necessary before production from existing acres is anywhere near maximized.

The cherry acreage in Great Britain has been comparatively stable in post-war years but in earlier decades there were considerable long-term fluctuations (see Table 10).

TABLE 10.
CHERRY ACREAGE, ENGLAND AND WALES. ALL AGES OF TREE

Year	1906	1918	1944	1954
Acreage	11,092	10,261	16,919	17,900
Year	1910	1920	1947	1957
Acreage	11,572	8,772	17,600	17,942
Year	1914	1936	1950	1960
Acreage	10,684	15,446	18,410	16,844

Source: Ministry of Agriculture, Fisheries and Food.

Statistics are not available for the years between 1920 and 1936, but the 1920 acreage was by far the lowest figure recorded before or since that time. There seems to have been a distinct loss of cherry acreage immediately after the First World War when *replacement* of trees planted in the mid-nineteenth century might have been the aim, followed by a 50 per cent. re-creation of the industry between 1925 and 1935. If this were so, in 1938 about half the bearing trees would be in or past their prime, and half would not then be in full bearing. Growers' reaction to the end of the Second World War was different: additional acreage was planted up—cherries along with apples and pears—and the acreage in 1950 was the highest of the century. Subsequently, the total acreage has declined to about post-war level but the acreage of trees of bearing age must be higher than in 1938.

The reported national acreage figure may give a quite misleading idea of the capacity to produce or of the actual amount produced. A grower who decides to give up commercial cherry production does not necessarily grub his trees; they may be set in an orchard of mixed trees some of which is still productive. The alternative uses of the land when cleared may not justify the expense of grubbing (as with the "pastoral" type of production referred to later), so the cherry orchard may, without more ado, revert to grassland. In 1938 and 1960, figures for cherry acreage were very similar. In 1960 there were probably some 7,000 acres in middle life, 8,000 acres in decline and 2,000 acres young and untried. In 1938 there were probably some 8,500 acres in middle life and 8,500 acres of young trees. Consequently normal annual production was much greater in 1960 than in 1938.

So although there has been a definite falling-off in the popularity of the crop, the acreage of cherry trees has shown less tendency to change during the post-war years than that of other orchard trees (Table 11). There may well be a prevalent indecision on the growers' part: the cherry orchard is not a drain on the farm: it provides summer and winter grazing, and occasionally brings in a useful sum of money. There is no good case for replacing the trees, nor a strong case for removing them. At any rate, with cherries, there has not been the avid desire to plant up, as with dessert apples and pears, nor the degree of lost confidence which has led to the protracted withdrawal of plum and culinary apple trees.

The decline of the cherry acreage since 1955 is a result of the greater success of hard fruits in recent years and of much of the cherry acreage planted after 1945 being set out on inferior land in small blocks by growers new to the crop: such ventures were usually unsuccessful and short-lived.

TABLE 11.
ACREAGE OF TOP FRUITS IN ENGLAND AND WALES

Year	Cherry	('000 acres)		Pear	Plum
		Dessert	Apple Culinary		
1935	15.1		119.8	10.4	42.4
1947-8	17.6	56.4	72.1	14.8	46.6
1952-53	18.1	62.7	64.7	16.4	42.8
1956-57	18.0	64.3	59.8	17.2	36.5
1960-61	16.8	66.0	51.7	17.6	31.1

Yield

There are many aspects of yield. For the present, those related to the time element are relevant, and may be considered in (1) long-term trends, (2) short-term trends, and (3) year-to-year variations.

Long Term. Table 4 gave an account of the overall increase in the total home-produced supply and in the following section some attempt is made to account for the recent known movements in yield. As regards the long-term aspect, growers maintain that cherry yields are not what they used to be and some suggested reasons are:

- i. Less farmyard manure is applied;
- ii. Trees are not long-lived and do not reach a great size;
- iii. High-yielding varieties have given way to lower-yielding varieties with better travelling and market qualities.

Figure 7 showing the average yield per tree for the last thirty years as estimated by the Ministry of Agriculture, Fisheries and Food, suggests that there is another side to this picture. While a given established orchard may have been a disappointment to the grower, the coming into bearing of a number of young trees and a falling-off in new planting (as previously disclosed) led to a rise in the *average* yield per tree from 1940 onwards, and reversed the previous trend of decline.

The general decline in yield per tree during the late 1930's may also have been partly due to the preponderance of old trees then in bearing, and partly due to the prevalence of the waning half of the short-term cycle in annual yield referred to later.

The rise in yield per tree to a much higher plane in and after 1942 may have some natural as well as some statistical causes. For instance:

1. The summer weather conditions of the wartime years were remarkably good;

2. As a part of wartime policy a number of very poor orchards in Kent were cleared more rapidly than they would have been cleared in the normal course of events;
3. Demand for fresh fruit in wartime was keen and all available fruit was picked for sale;
4. Another part of wartime policy was the improvement of methods of collecting statistical material and some of the apparent increase in yield per tree may be due to a change in the method of data collection.

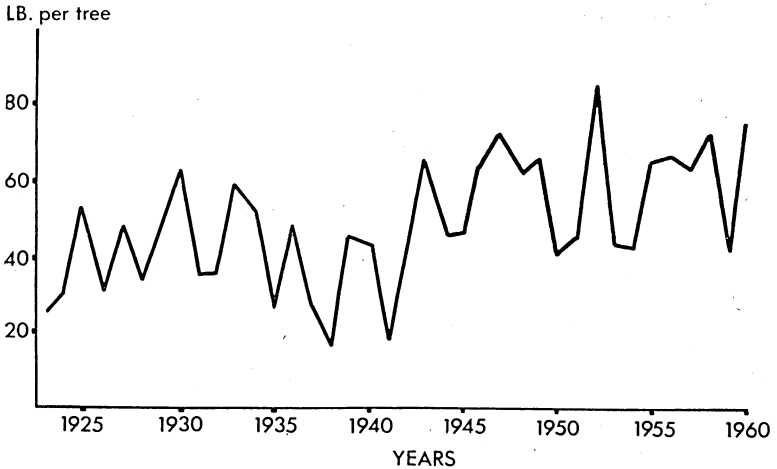


FIG. 7.
NATIONAL AVERAGE CHERRY YIELD PER TREE 1923-1960.

Short Term. Over the shorter period 1943-61 cherry yields per acre have shown no tendency towards rise or fall; this is in marked contrast to the distinctly rising trends in the yields of dessert apples—shown in Figure 8.

Cherry production, whether per tree or per acre, is quite likely to have changed little since 1945 for the following reasons:

1. Higher production resulting from a relatively low average age of tree has compensated for the increased area of young trees;
2. There has been only a gradual swing to new varieties;
3. No changes have been made in the technique of growing the crop.

History is mostly valuable for the clues it gives to the future, and in the light of past changes in yield it can be assumed that

average yield per acre in commercial bearing will rise in the next decade: however, if unproductive trees are not grubbed, the average yield per statistical acre of cherry orchard may continue to fall until 1980 or thereabouts.

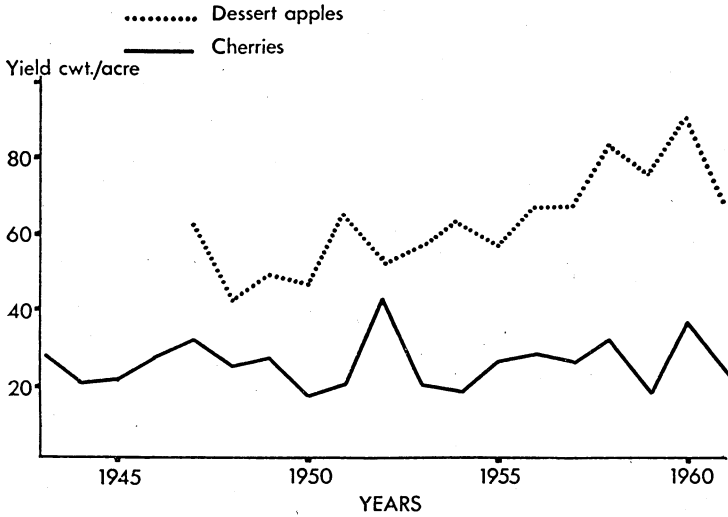


FIG. 8.
NATIONAL AVERAGE YIELD PER ACRE 1943-1961.

Year to Year. On a year-to-year basis most of the fluctuations in yield can be accounted for by weather differences and the fact that a cherry tree will not bear two consecutive bumper crops, although several good average crops can follow each other, as in the years between 1955 and 1958. Factors favouring a good crop are:

1. A moderate crop in the previous season;
2. A short winter;
3. A mild sunny blossom period;
4. Absence of night air frosts in April and May;
5. Good growing conditions in May;
6. Sunny, dry weather in mid June to July.

Yield Cycles

Yields per acre are also thought to have a cyclical character, as is demonstrated in Figure 9. There are presented here, summarized crop records of four main varieties of cherry in an orchard of forty acres over the last forty years. On the farm concerned, a

proportion of the trees is grubbed at intervals of eight to ten years, when the trees are about 45-50 years of age, in order to keep fairly constant proportions of young, full-bearing and declining trees.

The variety Early Rivers—one of the most widely planted varieties—is known to bear in cycles of two or three years of good yields and two to three years of poorer yields. However, this and other varieties on this farm show a long-term tendency to rise and fall simultaneously over and above these well known one-to-three year variations.

One perplexing point is that the yield cycle has moved counter to that which would be expected if annual yield were simply the product of a steady yield per acre and the number of acres. A trend line calculated in this way has been added to Figure 9.

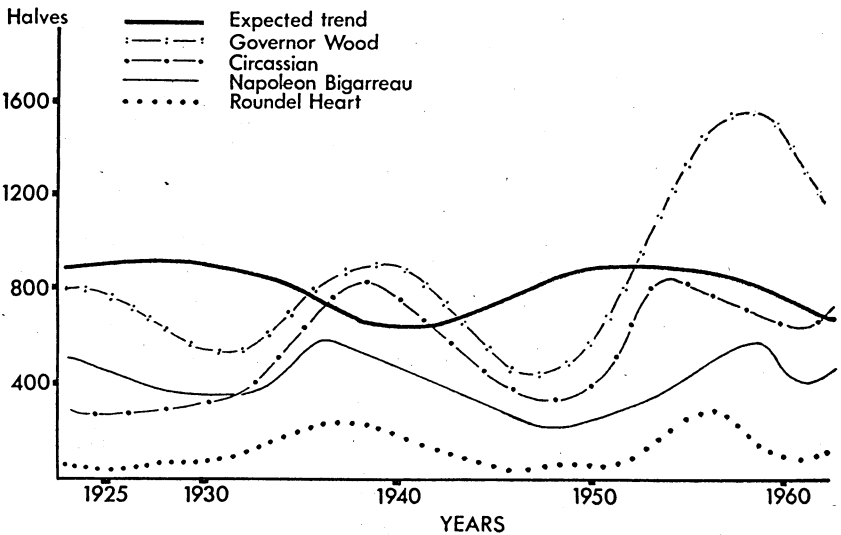


FIG. 9.
CHERRY YIELDS BY VARIETY 1920-1962.

Varieties

Of the common varieties a few can be singled out as being particularly suitable for the fresh market trade. Early Rivers is a reliable variety which could be of good quality if the growers would let it mature naturally. Other black varieties in popular favour are Bradbourne Black, Bigarreau Gaucher and Merton Bigarreau. Waterloo is a connoisseur's cherry but unfortunately it travels badly and is less widely grown. Of the white cherries Napoleon Bigarreau is one of the better varieties popular both with canners

and on the fresh market. Early Amber, Governor Wood and Frogmore Early are all reliable, fruitful varieties which in recent years have been increasingly drawn off the fresh market into the processing trade.

The seasonal flow of cherry supplies, while either of "black" or "white" fruit to the layman, in reality consists of a wide range of varieties with unimportant distinguishing qualities. In his authoritative account of cherry varieties Grubb lists thirty-seven as being common or fairly common market varieties, with a further forty-seven listed as market varieties grown locally in various counties in England. In the course of the present survey of Kent cherry production all growers were asked to name the half-dozen main varieties in their orchards: the eighty-four replies to the question covered forty-two different varieties (see Table 12). The upshot of this situation is that in the shops the multitude of varieties tend to become "Rivers", or "Gauchers", "Ambers" and "Naps" according to the season and almost irrespective of colour. There are sound cultural reasons for this range of varieties but its effect on the market situation is to provide a range of fruit maturing over a period of about six weeks.

More detailed information of tree numbers by variety was beyond the scope of the present investigation not only because of the wide range of varieties but because of the commonly "gappy" and irregular orchard layouts. Black varieties outnumber white in the number of trees planted but it is not known to what degree.

TABLE 12.

FREQUENCY OF OCCURRENCE OF VARIETIES (IN ORDER OF RIPENING)

Variety	% of total variety occurrences		
Early Rivers	B		13.5
Frogmore Early	W		5.7
Governor Wood	W		3.1
Early Amber	W		10.7
Goodnestone Black	B		2.4
Roundel Heart	B		5.2
Waterloo	B		4.3
Bigarreau Gaucher*	B		5.5
Bradbourne Black	B		6.2
Napoleon Bigarreau	W		13.1
Noble (Ohio Beauty)	W		2.6
Noir de Guben	B		2.6
Florence	W		4.0
Turkey Heart	B		2.4
Other varieties	(28)		18.6

B = Black variety W = White variety

*The group name "Bigarreau" (cherry with firm flesh) is used by growers as a shortened form of the names of many varieties eg. Bigarreau de Schrecken, Kent Bigarreau, Bigarreau de Mezel. Confusion is likely to have arisen in reporting.

The new Merton varieties figure largely in the newest orchards. When orchards of the new type mature, white cherries will be still further displaced in the markets. (See Table 13 for a list of varieties which have not been re-planted on their former scale.)

Since some varieties are superior on the market, some preferred for processing and some generally more fruitful, it is not surprising that the varieties being planted now are somewhat different from those planted fifty years ago. Some of the "new" Merton varieties have good orchard and market qualities but Merton Heart has been found to be unpopular on the market and several growers have top-grafted this variety. Table 13 gives an indication of the slow rate of change of varieties. The apparent maximum change in the occurrence of any one variety as between orchards more than 15 years and less than 15 years old, among those covered in the survey on which this report is based, was an increase of 5.4 per cent. (for Bigarreau Gaucher).

TABLE 13.

PERCENTAGE CHANGES IN THE NUMBER OF OCCURRENCES OF VARIETIES IN RECORDS. ORCHARDS BELOW 15 YEARS COMPARED WITH ORCHARDS ABOVE 15 YEARS OF AGE

Variety	Percentage change	
	increase	decrease
Early Rivers		1.07
Frogmore Early		3.53
Governor Wood		1.46
Merton Heart	2.96	
Merton Favourite	2.44	
Goodnestone Black		2.38
Merton Bounty	1.17	
Merton Premier	1.08	
Waterloo		3.19
Amber		3.92
Early Bigarreau Gaucher	5.39	
Bradbourne Black	2.77	
Merton Bigarreau	2.55	
Napoleon Bigarreau		3.04
Noir de Guben	2.54	

Summary

Cherries seem to be in a sort of economic twilight at present. They are quite distinct from other orchard fruits both as regards the time of year when they are eaten and the way they are eaten. This combination should dispose to make them eagerly sought after in a modern society. There is no evidence, however, that fresh cherries, whether home grown or imported, have other than a humdrum

market acceptance. The real value per pound of the English cherry crop has been consistently falling for the last ten years. As compared with dessert apples and pears, cherries have been at a discount since 1945; prices may be expected to improve relative to apple and pear prices during the next twenty years but unless cherry marketing is revitalized the actual relative improvement may be slight. The inertness of the cherry market (which, it is thought, could be overcome) leads to caution in making recommendations for re-planting with cherries for the fresh market: the processing trade is increasing faster than the fresh market trade. If there were a sudden revival of public appetite for fresh cherries, measures to sustain it would be necessary during the twelve to fifteen years during which an increased supply was being organized. As far as can be judged, thoughts about imports need not deter those English growers who have everything in their favour on their farms, from planting cherries.

PART II: SWEET CHERRIES ON THE FARM

CHAPTER 5

CHERRIES AS A FARM CROP

Location of Production

Commercial cherry-growing in Britain is thought to have originated in the Teynham area of Kent towards the end of the sixteenth century. The idea was brought from abroad and presumably the territory between London and Dover was at that time the part of Britain best known to visitors from the Continent. Either by accident or design the first location chosen could not have been bettered. Notwithstanding the way in which the British Isles have been opened up in the last four hundred years, cherry growing has not moved out of Kent on any scale and Teynham and its environs are still the geographical core of the industry.

At the time of the 1957 Orchard Fruit Census, 74.6 per cent. of the national acreage was located in Kent. The trend since the beginning of the century has been for an ever greater proportion to be grown in Kent, and a possible increase in grubbing in less suitable counties since 1957 may well make this proportion even higher in the future. Within Kent, cherries remain a localized crop and are firmly established only on large farms at relatively low altitudes on suitable soils. The fact is that cherries are not everyone's crop. There are both natural and economic limitations to successful cultivation.

A grower with a deep, well-drained brickearth or similar soil can expect a comparatively quick establishment of his orchard with the prospects of high yields from the mature trees if the local climate is also conducive. The area of soil with such potential is limited: and a less good soil will take longer to produce a much less promising orchard, for its deficiencies cannot be made up by increased expenditure on soil improvers. Climate is very little less important than soil: frosts can damage the blossom, cold winds can delay the growth of young trees and cold May winds shrivel the immature fruits. Risk of cracking of the ripe fruit and of the incidence of bacterial canker are reduced by a low summer rainfall, and areas liable to hailstorms in June and July must be avoided.

The present distribution of cherry orchards (it may be different twenty years hence) is perhaps best outlined to those who do not

know it by referring to the geographical features of Kent. The most favoured sites—and the largest area of cherries—are to seaward of the North Downs contained between Rainham and Faversham and below the 150 ft. contour. This area, with extensions westward to Dartford and eastwards to Canterbury is referred to as North Kent. One area of secondary importance lies due south and south-west of Maidstone on the high land (the so-called Ragstone ridge) which forms the northern rim of the Low Weald; and another area (of somewhat greater extent) is found due south of this on the high land between Tunbridge Wells and Tenterden. which forms the southern rim of the Low Weald. A third such area lies dispersed between Canterbury and Deal. Table 14 shows how the total acreage in Kent is divided among these four main areas, together with the assumed number of cherry-growing farms in each area. North Kent emerges as the centre of production and the cherry orchards there are apparently larger than elsewhere:

TABLE 14.
CHERRIES: ACREAGE DISTRIBUTION WITHIN KENT

	North Kent	East Kent	Ragstone	Weald	Total
Acres	8269 64.9%	1227 9.6%	1789 14.0%	1452 11.4%	12737
Number of farms	662 52.16%	139 10.95%	244 19.22%	224 17.65%	1269
Acres of cherries per farm	12.49	8.82	7.33	6.48	

Risk in Production

Not only is the cherry tree sensitive to soil, aspect and weather but it is subject to a number of production hazards which make it often less rewarding to grow than other orchard trees. The most constant problem in a cherry orchard is bacterial canker, which may decimate the trees in even a young orchard: at present there is no certain preventive or remedy; three Bordeaux sprays in early Autumn give some control but such work has a low priority on a busy fruit farm. Plantings on the best soils suffer less from canker and the most thrifty trees are thought to be able to grow away from it provided their natural resistance is not weakened by stimulative artificial manuring—an argument for confining cherries to the best land. In common with most crops, the cherry is found to be subject to a number of virus infections, causing distorted growth, loss of vigour, a delay in the onset of bearing and up to 72 per cent. reduction in the crop from mature trees. Virus-free

clones of several scion varieties are now available to growers, but there is no hope of cleaning-up the many existing orchards which are already infected. Of the common orchard pests only aphid and caterpillar attack the cherry to any extent and these are controlled comparatively cheaply by one or perhaps two routine sprays.

The size of well-grown mature trees constitutes another sort of hazard, particularly so on the fruit farm which has to be equipped with dwarfed trees in mind; for example a high volume sprayer may have to be maintained especially for the cherry orchard. Cherry trees are normally grown on a 7-foot leg but the use of a 2-foot leg makes little difference to the total distance of the fruiting wood from the ground. Long ladders are needed for picking, and no one is prepared to say how long reliable pickers will continue to be available to climb into the often dangerous-looking trees. And there is little reason to hope that a commercial dwarfing cherry rootstock will be in bearing within the next fifteen years.

Cherry trees are pruned only to the extent of removing dead or crossing branches and in the early years to direct the shape of the tree. This is in marked contrast to the apple and the pear and indeed to most fruits where the aim is to control the type and extent of new growth and to promote fruiting. This lack of control is a third kind of hazard: there is no widely accepted technique whereby a grower can induce heavier fruiting of his cherry trees by the judicious use of pruning: indeed with the bearing wood 40 feet above the ground there is little incentive to provide more of it! It is not a practical idea to improve the quality of the fruit by direct action on the tree in the same way as for other orchard fruits.

Reference has been made to the great number of varieties of cherry: there are 160 named varieties of which 50 are in common use, and orchard planning calls for serious thought on several points. The first reason for this great number of varieties is that some succeed better than others in a given locality. Secondly, a long sequence of ripening has been often desirable. Ten acres of one variety would call for up to 100 pickers for a week, whereas a similar area of varieties ripening over six weeks could be cleared by, say 15-18 pickers. Few growers would contemplate anything like the risk implicit in the first situation. Thirdly, cherries can be split into 12 groups; members of each group will not cross-pollinate, hence varieties must be chosen from a selection of groups; fortunately the situation is eased by the presence of the universal donor group. Other considerations are that varieties flowering and ripening at similar times should be adjacent in the orchard and that good pollinators should also be good market varieties and vice versa.

Finally, the trees take up to 15 to 20 years to form a mature plantation and mistakes in planting are slow in manifesting themselves. Ripening cherries are a succulent prey for birds. Automatic bird scarers are not infallible and it is still common practice to employ men with guns to patrol the orchards, more especially in the early morning and in the evening. One man can cope with 10–12 acres of well-laid-out orchards but if fruit is ripening simultaneously in several parts of a large orchard the area that can be “minded” effectively is much smaller. The cost could be prohibitive on orchards of less than five acres if valuable work were abandoned in order to attend to bird scaring.

Size of Enterprise

Information kindly provided for the writers by the Ministry of Agriculture, Fisheries and Food gives details of the acreages of cherries on individual farms and of the other enterprises in each business (Table 15).

TABLE 15.

CHERRY ACREAGE PER FARM AND NUMBER OF FARMS—KENT

Cherry Acreage	up to 1	1-5	6-10	11-20	21-50	over 50
Acres in Group	148	1215	1601	2577	3196	3283
Farms in Group	241	405	207	179	101	38

Since almost all holdings have some acreage under crops other than cherries the total size of each farm is considerably bigger than their cherry acreage. A feature of this distribution is the large number of small units—many of which must be either uneconomic or abandoned altogether—and the small number of large units. Already the cherry can in some measure be identified as the crop of the larger farm businesses, whether mainly in fruit or otherwise.

The statistics take no account of subsequent amalgamations of farms or of individual cherry enterprises under the general management of a specialist; only a complete survey would reveal this. During the course of collecting material for this report twelve farming organizations were encountered, each having managerial influence over 100 acres or more of cherries. These 12 businesses (1 per cent. of the assumed total), each one led by an unusually able individual, controlled 21 per cent. of the county's acreage; and the 24 leading businesses controlled 28.5 per cent. of the county's acreage. By contrast, 646 units or 55 per cent. of the assumed total of businesses are thought to consist of five acres or less of cherries alongside other

farm enterprises: many are likely to be of little commercial use. These small acreages are often relics of past farming systems or, if recently planted, expressions of out-dated attitudes.

Type of Enterprise

All cherry growers look to cherries for either a part of their annual net income or as a small supplement to a pension. To all of them efficiency of production is a question of putting as little as possible into the business and reaping a satisfactory reward. Growers vary in their demands on a business and certainly have widely differing views on how much they are prepared to venture. In practice, ideals of efficiency are most often realized in two ways: by large scale specialization or, on a smaller scale by making the crop a complementary part of a mixed organization.

The following analysis of the types of farm on which cherries are grown was attempted in order to discover the prevalent attitudes towards the crop, whether attitudes were in any way related to profitability, and finally how the two combined were likely to affect production in the future. Relative profitability is reported on in this chapter, the growers' attitudes in Chapter 7. This analysis is based on the records of the 1,121 known cherry-growing farms made available by the Ministry of Agriculture, Fisheries and Food. The acreages of cherries grown on each farm were put in a group according to the other main enterprises or the likely economic intensity of the other activities on the farm. Four main types of enterprise can be distinguished:

- i. *Cherries on a fruit farm.* Other fruit and non-fruit enterprises present but the latter not making up more than 5-10 per cent. of the potential financial output: includes a few small purely cherry farms.
- ii. *Cherries on an intensive mixed farm.* An area of top fruit, including a sometimes relatively small acreage of cherries, grown in conjunction with soft fruit, vegetables, potatoes, pigs and poultry. Farms range in size from 5-500 acres in this group.
- iii. *Cherries on an extensive mixed farm.* A relatively small area of fruit, sometimes largely of cherries, grown in conjunction with arable, dairy and pastoral enterprises.
- iv. *Cherries on hop farms.* Hops may be grown in any of the three previous situations but in conjunction with top fruit, including cherries, they make a particularly Kentish combination which normally has no other significant enterprises.

Analysis along these lines reveals that a majority of the cherry acreage occurs on fruit farms and extensive mixed farms [Types i and iii in the above classification (see Table 16)].

TABLE 16.
ACRES OF CHERRIES ON TYPES OF FARM, 1960

Acres of Cherries No. of farms	Main Enterprise or Intensity of Cropping					
	Mainly Cherry	Mainly Fruit	Mixed Intensive	Mixed Extensive	Fruit & Hops	Grubbed and Unrecorded
227.75	5570.50	1369.50	2922.25	1122.72	508.50	
29	512	152	311	63	54	

Among the few instances where cherries seemed to be the main enterprise, only one was of an orchard area large enough to provide a viable farm; otherwise this group of farms consisted of separated or truncated parts of once larger orchards. The grubbed and unrecorded element (see the right-hand column) in this analysis is the number of cherry units known to have been grubbed between 1957 and June 1960, together with a number of farms for which the Ministry are unable to supply farm records.

Table 17 gives a further breakdown of the above data showing

TABLE 17.
ACRES OF CHERRIES ON TYPES OF FARM—BY AREAS, 1960

	Main Enterprise or Intensity of Cropping					
	Mainly Cherry	Mainly Fruit	Mixed Intensive	Mixed Extensive	Fruit & Hops	Grubbed and Unrecorded
North Kent acres	142.25	3645.75	1112.75	1667.75	383.50	260.50
No. of farms	22	276	96	128	12	31
East Kent acres	28.00	601.25	106.25	527.25	99.00	86.50
No. of farms	1	49	24	37	3	4
Ragstone acres	10.50	799.50	103.00	450.50	233.50	85.00
No. of farms	3	109	21	61	14	8
Low and High Weald acres	47.00	524.00	47.50	276.75	406.75	76.50
No. of farms	3	78	11	65	34	11

the acreages of cherries grown on each type of farm in the four areas of Kent.

In Table 17 North Kent is confirmed as the home of cherry-growing. Apart from cherry-growing on hop farms, all types of production occur in North Kent more largely than elsewhere.

Management and Profitability

While cherry growing can be found on many types of farm it is rarely found as a specialized crop in the accepted sense of the term. Specialization in fruit has been undertaken in order to profit from the higher prices obtainable for out-of-season produce and for superior quality at all times of the season. The cherry crop is less amenable to improvements of this sort and far from being able to put out-of-season fruit on to the market the grower has little or no control of the size and quality of his in-season crop. Again on the production side, orchard operations make small demands on labour but such tasks as there are need to be done at specified seasons, with long workless periods intervening. Under these conditions it would be natural for a grower to find other enterprises to provide work for the regular staff. And since harvesting requires a great deal of labour there is no great harm in incorporating other labour-intensive crops into the farming system. So although cherries alone could support a grower, it usually happens in practice that they are grown in combination with other crops. The few cases of specialized cherry farms that have come to the writers' notice have been found to be, on closer inspection, either a retired farmer's hobby or to be farmed as a part of another farm business. What might happen if harvesting becomes mechanized is considered in Part III.

In a grower's mind the success of an enterprise or crop has two main aspects. One naturally enough is the financial result, while the other is the value of that crop or enterprise in working with others to make a smoothly-operating and profitable farm. The financial success of the cherry crop on the farms surveyed has been measured by the margin of revenue over direct costs: this margin varied from £1 18s. 0d. to £309 0s. 0d. an acre. When average margins are calculated for the four types of farm previously mentioned the more intensive types of farm are found to have higher margins than the more extensive. This may be partly a result of the cherry orchards being given more care on the farms accustomed to intensive cropping but no doubt quality of land has some bearing too; the large-scale cherry-growing farms which tend to have lower average yields are found on the more extensive farms, some of which are outside the recognized fruit areas of Kent (see Table 18).

TABLE 18.

AVERAGE FARM GATE REVENUE LESS DIRECT COSTS PER ACRE BY FARM TYPE 1959-61

Mixed Intensive	Mainly Fruit	Fruit and Hops	Mixed Extensive
£ s. d.	£ s. d.	£ s. d.	£ s. d.
106 19 0	98 14 0	84 5 0	88 0 0

The above results are based on growers' yields and average prices over the three years 1959-61. Standard costs of orchard operations were imputed. Average financial results are not greatly different on the different types of farm, but this does not mean that cherries are of equal value to the grower in nearly all circumstances. For instance, a hop grower might consider a margin of £84 an acre on a small acreage of cherries to be low, and decide to re-plant with hops instead of cherries when the trees need replacing, whereas £88 an acre on twenty acres or so might seem highly satisfactory to the pastoral farmer. The "mixed intensive" group of farms show the best result largely because the cherry orchards concerned are more wholly in North Kent than are the orchards of fruit farms—the latter are spread more evenly over all areas. Were margins per acre to be compared between fruit farms and intensive mixed farms in *North Kent*, the present order of profitability might be reversed. The result obtained also tends to lend support to the theory advanced in Chapter 4 that the site selected for a fruit farm with apples and pears in mind is unlikely to afford an ideal situation for a reasonably-sized cherry enterprise.

The success with which the cherry crop can be integrated into a farming system on the different types of farm also varies considerably; in any situation the disadvantages are tolerated for the sake of the more acceptable aspects of the crop. On the fruit farm for instance, cherries provide extended-season use for the mowing, manuring, harvesting and spraying tackle used on other orchards. Picking labour is usually the critical factor in the organization of work on a fruit farm and from this point of view cherries fit well as a possible alternative to soft fruits, both having early-summer picking seasons. But compared with soft fruit crops which are essentially short-term and give a comparatively quick return, cherries are slow to "come-in" and monopolize a piece of land for fifty years or so, which tends to constrict the grower's freedom of

manoeuvre in cropping if there is no spare land for new planting.

Arguments favouring cherries on a fruit farm do not apply to cherries on intensive mixed holdings: market contacts gained with other crops may simplify disposal of the fruit but this is small compensation for the cherry orchards' restriction on freedom of cropping and for the labour peaks which are created in spring and early summer on this type of holding. It can only be supposed that the financial incentive is sometimes keen; few vegetable crops will give the margin of £150 or more that cherries *can* give: but most crops would give higher margins than poor cherries *do* give. Although cherries are distinctly alien to short-term, intensive cropping, a few intensive farmers think sufficiently highly of their cherries to tailor other crops to fit in with them.

Cherries can often be integrated very well into the routine of an extensive farm especially if a gang can be called together at picking time. Such farms may have a minimum of fruit-growing equipment and would rarely be justified in having more. The low production labour requirement of the cherry crop is suited to the overall labour-extensive organization of the farm, especially if sheep are grazed in the orchards. Unless there is a good reason for the smaller farmer organizing his own picking gang, the crop will be sold on the trees. Sheep grazing is usually an integral part of "extensive" cherry-growing during the non-harvest period of the year. It cuts down the expense of gang mowing and allows the Hayter-type mowers to be used for trimming. Growers are by no means unanimous about the financial advantage of grazing sheep, some even think that the shaded grazing under trees is of no value to the sheep while others regard it as a considerable part of the orchard revenue. Many more growers would seem to be keen to graze sheep in their orchards than actually do so, being deterred by the danger to the sheep from the copper in Bordeaux Mixture. If copper sprays are used there certainly is a potential danger to the sheep of copper poisoning from traces left in the grass. Experiments reported in the veterinary journals show that little harm will come to the sheep if the commonly accepted rest periods after spraying are observed and if the sheep are in good heart. Several farmers reported losing sheep in the past and blamed copper sprays—but no farmer likes to admit that not every one of his ewes is in first-class fettle. There is no conclusive evidence that Bordeaux Mixture is effective in controlling canker and each farmer has to decide whether he will forego any possible long-term protection by abandoning these sprays and take up in the short-term the full use of his orchard grazing: there are losses and gains on both sides which can be summarized in a generalized way as follows:

<i>Gains</i>	<i>per acre each year</i>			<i>Losses</i>
	£	s.	d.	£ s. d.
14 less gang mowings	7	7	0	Problematic control
No Bordeaux sprays	2	10	0	of canker
Sheep grazing	4	11	0	?
	14 8 0			

A little mowing may have to be done during the preharvest period because the leafy and heavy branches are within reach of sheep but the practice of grazing works well in most cases and it is unfortunate that the lack of fences on many fruit and intensive vegetable farms makes it impossible to graze sheep in the cherry orchard as a routine measure.

The arts of husbandry concern by no means all growers of cherries. There is no standard routine of cultural operations invariably carried out. Some highly productive orchards are given practically no attention while other orchards which receive a full range of treatment reward growers to very different extents. It is claimed that good cultural attention justifies itself in the long-term productivity of the tree and in the quality of the fruit sample produced. The nub of the matter is that little is known of the physiological requirements and behaviour of the cherry tree, which makes it difficult to give the tree encouragement of the kind it most requires.

Table 19 shows that a relatively high level of yield tended to be associated with a full-scale cultural treatment, but whether as cause or effect it is impossible to say. In some cases the better result may simply be due to extra diligence in minding the crop against bird damage; a lack of care at this late stage in the year can make a productive orchard to appear on paper to be of a very mediocre standard. In principle, each orchard has a separate norm of yield, determined by a combination of natural (external) and physiological (internal) factors. A thriving tree in the right circumstances may not show much response to stimulants—it is adequately supplied already: on the other hand, any prudent grower who has very productive trees would think in terms of replacing nutrients taken out of the soil and so would fertilize well but with restoration rather than stimulation in mind. On the other hand, a tree declining in vigour and in an unnatural habitat may not show much response to stimulants, because not *all* limitations can be artificially removed. It seems to be the case that within these two extremes there is little scope for excellence in husbandry to overcome natural limitations.

The cases in which an attempt to lift the normal yield artificially can be economically justified are probably those where only one or at most two of the several possible factors (e.g. rainfall, altitude, age of tree, depth of soil) are imposing a limit on yield.

TABLE 19.

THREE-YEAR AVERAGE YIELD PER ACRE AND SCALE OF CULTURAL ATTENTION GIVEN: 57 FARMS IN KENT 1959-61 (UNITS OF 12 LB.)

	..	..	..	..	..	Scale of Cultural attention*			
						nil	small	medium	full
All areas	..	..	..	..	..	161	250	184	295
North Kent	..	..	..	..	..	172	304	144	247
East Kent	..	..	..	..	..	80	150	183	424
Ragstone	..	..	..	..	..	—	—	166	241
Weald	..	..	..	..	..	—	112	270	361

* defined in Appendix

Of the eight most profitable cherry enterprises among those surveyed, cultural costs varied between a lower limit of £2 10s. an acre and an upper limit of £47 10s.

Some correlation can be found between average margins and average yields per acre, the average amounts spent on annual orchard operations and the attitude of the grower to the cherry crop (see Table 20).

TABLE 20.

CHERRY HOLDINGS BY THREE-YEAR AVERAGE YIELD PER ACRE: 57 FARMS IN KENT, 1959-61

Three-year Average Yield × 12 lb.	Average Orchard Expenditure	Average Margin	Growers in favour of the crop (per cent.)	Range in Margin
0-120 (11 farms)	£13 14 0	£21 16 0	30	£1 18 0 to £41 12 0
121-210 (16 farms)	£16 17 0	£72 16 0	50	£15 13 0 to £232 14 0
211-+ (30 farms)	£19 5 0	£161 16 0	66	£71 19 0 to £309 18 0

These data seem to show clearly that the good land (but perhaps not always good enough for cherries) would be better used for almost any other intensive crop than it is when growing poor cherries. However, these margin figures may not be decisive to the grower—

particularly where the margin is low. The orchard land may well be pasture or undercropped with vegetables, and the cherries merely left to provide additional revenue in a good year.

Fruit growers as a class are generally inclined to spend somewhat heavily on cherries, as are the large growers in the other groups. However, irrespective of the type of farm there is an élite of skilled and economical growers who have a way of keeping costs down without jeopardizing the long-term success of their orchard. Using their skill, judgement and knowledge of local conditions these growers economize by reducing sprays to one tar oil or D.D.T., using straight fertilizers and less of them, or saving some gang mowing by grazing sheep for a part of the year. In any event the timing of operations is usually of more importance than sheer quantities and frequency.

The way a grower goes about replacing his trees, having decided in principle to do so, is less a matter of the type of farm as of the size of farm. Bigger farms, particularly those with a big acreage of cherries, adopt the system of grubbing 2-5 per cent. of their cherry acreage each year or a larger percentage every 8-10 years and planting new orchards on fresh ground. Farms with smaller cherry acreages and also those short of land gap-up individual trees as they die off and this gives rise to a conventional type of small, semi-permanent cherry orchard where trees may be found aged from one year to seventy years, side by side. On the other hand, where the alternative cropping value of the land is comparatively high growers are less likely to follow this line of reasoning and prefer to have the land cleared for a better crop: for example, in the survey covering grubbing or proposed grubbing since the 1957 Fruit Census, 43 per cent. of the net loss of cherry acreage to other crops was on fruit farms.

CHAPTER 6

FINANCIAL ASPECTS OF PRODUCTION

The Cost of Establishment

From the grower's point of view the time that a new crop takes to come to fruition and the extent of the financial commitment before the crop is on a commercial basis are of obvious importance. Most farm crops and vegetable crops are grown on a year-to-year basis with the revenue coming in the same year as expenditure: stock raising becomes rewarding after two or three years—less with pigs and poultry. Soft fruit crops mature after one to three years, while apples, pears or plums take up to 8 or 9 years before becoming profitable. Cherry trees are in the ground 10–12 years before bearing a crop worth picking and are customarily not considered to be in full bearing until 20 years after planting. While the total outlay on a new cherry orchard is not large by comparison with apples close-planted on a dwarf stock, it is undertaken over a period three times as long and the land is not fully productive even with an intercrop, in the intervening years.

The following data concerning the cost of bringing new orchards to profitable bearing were collected from a number of fruit growers who have young cherry orchards developed from non-orchard land.

TABLE 21.

ORCHARD ESTABLISHMENT: NET INVESTMENT TO THIRTEENTH YEAR

<i>Year One</i>	<i>Cost per acre</i>	<i>Net investment per acre</i>
	£ s. d.	£ s. d.
Cultivations (pre planting)	1 2 0	
Trees	43 4 0	
Marking out/Planting	3 12 0	
Staking and Tying	26 0 0	
Rabbit Protection	6 6 0	
Mulching	1 10 0	
Manuring	1 11 0	
Spraying and Dipping Trees	3 18 0	
Cultivations	2 8 0	
Rent and Overheads allowance	10 0 0	101 11 0
<i>Years Two to Twelve</i>		
Further annual expenditure including gapping up, cultural operations and grassing down	328 10 0	
Revenue net of picking, minding and marketing	220 0 0	108 10 0
Total		210 1 0

For this purpose the orchard will be regarded as being established when it is no longer necessary to add working capital from outside sources in order to maintain the trees; that is, when the current crop will meet the current year's and the forthcoming year's orchard expenses.* It may be assumed that such orchards were of 10 to 12 acres in size, and located on a fruit farm where existing orchard services can be used: planting distance was 30 ft. \times 30 ft., giving 48 trees per acre. On a non-family farm this is the smallest economic unit for management purposes: minimum capital requirement is likely to be 10 to 12 times the quoted figure per acre.

Interest charges of 6 per cent. on the accrued investment up to the 12th. year would amount to £193 16s. 0d. By the end of the twelfth year the first phase was over: the point of maximum net investment had been reached. Thereafter the build-up of revenue made some contribution to reducing this figure. By the thirteenth year the excess of revenue over expenditure was sufficient to cover the operating costs (excluding interest) up to the harvest of the next crop, and no further working capital was added. In the fourteenth year there was the first sizeable balance over the full costs for two years and the orchard was thereafter commercially established. By the seventeenth year the financial situation was transformed and more than the amount of investment, with interest of £256 an acre included, had been recovered. This is perhaps as good a performance as can be realized. Delayed bearing and light crops could mean that establishment could take twenty years or more.

Thinning at a cost of about £30 an acre is likely to have been done at eighteen to twenty years of age: the accumulated excess of revenue over costs is sufficient to cover this but since up to half the trees are to be grubbed, the revenue in the following year will be at least halved too.

Establishment costs, of course, have little meaning for the established fruit-grower, because he can finance a replacement or even an additional cherry orchard out of his profits on the other farm crops on the farm. If he customarily has a high net income without more cherry orchards he can look with equanimity upon the lost profits from the land occupied by young cherry trees: but is a grower who can get along well without cherries likely to take the trouble to grow them?

Varieties of cherry vary in the rate at which they come into bearing, and some allowance has to be made for locality. In the Rainham district *Governor Wood* and *Frogmore Early*, for example, are early starters. *Bigarreau Gaucher* and *Merton Bigarreau* are late

* "Investment in Orchards", R. R. W. Folley, 1960, page 24.

developers. *Napoleon* seems to be in a class by itself as regards yield.

This range in early performance seems to suggest that where a grower wishes to make the waiting period as short as possible he would plant more of the early-maturing and high-priced varieties. The following table records one grower's experience with commonly-planted varieties (Table 22).

TABLE 22.
YIELDS IN THE FIFTEEN YEARS AFTER PLANTING: UNITS OF 24 LB.;
28 TREES OF EACH VARIETY

Variety	Years after Planting			Total
	0-5	6-10	11-15	
Early Rivers	1	135	539	675
Governor Wood	32	251	708	991
Frogmore Early	29½	154	467	650
Napoleon Bigarreau	35	251	951	1237
Bigarreau Gaucher	—	56	525	581

(See also Appendix 6, p. 76)

To plant fewer trees would save up to £30 an acre in the first year but a "thin" plant with resulting exposure to winds delays tree growth. Trees need light and air when cropping but the young trees need sheltered conditions. Various planting distances from 24 ft. by 24 ft. to 40 ft. by 40 ft. have been tried by growers but most consider about 30 ft. by 30 ft. to be satisfactory together with interplanted crops for additional shelter. Some growers use plums as fillers, while one grower planted cherries with great success in an old Bramley orchard due for grubbing five years later.

If productive use is made of the land between the trees during this establishment period the cherry crop can be made a more attractive proposition, though orchard management and operations may be more complicated and there is the possibility of competition between the undercrop and the cherry trees. A "two-thirds normal" plant of blackcurrants planted five years before the cherry trees, may be showing a surplus of £150 of revenue over planting and maintenance expenditure by the time the cherries are planted. Thereafter, an annual surplus of £90 an acre is possible including an allowance for overheads. A 12-year crop can make good use of the land for the first seven years of the life of the cherry orchard; sharing the cost of cultivations and overhead charges with the blackcurrants will reduce the nominal cost of establishing the cherry orchard.

Irrespective of the profitability of an interplanted soft fruit crop, a cherry orchard of 12 acres will commit the grower to a cumulative net investment, including interest, of about £4,830 over

a period of twelve years. Certainly, if the soft fruit crop is normally profitable, growers will think twice before embarking on the cherry stage of the project. In general the only growers planting large acreages of cherries today are those with existing profitable cherry orchards which are being used to finance replacement orchards.

The Mature Orchard

The most fruitful period in the life of a cherry tree is said to be from 20–40 years: it is for this period of potential heavy bearing that a grower foregoes the productive use of some of his best land for the previous 15–20 years.

Revenue per acre

The revenue which a grower can expect is determined very largely by the size of his crop and his method of sale, but small premiums are available for good quality fruit. If the fruit is sold on the trees the grower is relieved of all further responsibility, but naturally his revenue is considerably reduced. The average value of auctioned crops sold on the tree and reported in the survey covering the years 1959–61 was £45 an acre, with a range of £208 down to £5.

The national average yield for the period 1957–61, as estimated by the Ministry of Agriculture, Fisheries and Food, was 26 cwt. or 242·6 by 12 lb. an acre; the average yield per acre on the farms covered in the survey for the years 1959–61 was 256·0 by 12 lb. per acre. At a gross market price of 17s.* per 12 lb. this latter figure would give a grower a revenue of £217 12s. 0d. per acre. This overall figure, as is usual, belies a vast range of performance on individual holdings; growers require different standards of performance of an orchard and manage them accordingly. Even on a year-to-year basis the figures of known yields from farms in the survey range widely about the average; but in a year when the overall crop is light orchards which yield regularly and have a high average yield still produce about five hundred by 12 lb. chips (53 cwt. an acre) (see foot of Table 23).

The prospects for cherries can be made brighter if national levels of average yield are used to multiply average price in calculations of forecast average revenue per acre.

A comparison of yields between those recorded on the farms supplying yield figures over the period 1959–61 for the purposes of this study (which is in many ways a good cross-section of the indus-

* Based on the Ministry of Agriculture, Fisheries and Foods, average price for 1959–61.

try) and the estimated national yield per acre shows similarity in movement but differences in level. This divergence in level may have its origin in the different basis of calculation—bearing acreage in the recent survey, total acreage in the national estimate. Estimated national yield for 1959-61 was 231 chips an acre, or 291 chips a bearing acre. Over the three years this level of yield is 15 per cent. above that obtained from growers' records by Wye College. It is unlikely that there is an error of this magnitude in the estimation of the non-bearing acreage, and the presumption must be that national production has been somewhat over-stated in 1960 and 1961. A persistent error of this sort would help to explain the rising trend in net income from cherries since 1954 (see Figure 10, p. 47), which seems to follow from the official statistics, and which of course is itself contradictory of growers' prevalent attitudes to the crop. (Another possibility is that cherry yields are considerably higher in other counties than they are in Kent.)

TABLE 23.
AVERAGE YIELD PER ACRE PER FARM 1959-61: A COMPARISON

Estimates	1959	1960	1961
Production estimate by M.A.F.F. (tons)	14,700	29,600	18,400
Total cherry acreage, M.A.F.F. (acres)	17,300	16,900	16,800
Estimated bearing acreage Wye College (acres)	13,500	13,100	13,000
<i>Ministry of Agriculture, Fisheries and Food</i>			
Average yield per acre of cherries, M.A.F.F. (12 lb.)	159	327	208
Estimated yield per bearing acre (12 lb.)	203	421	264
<i>Wye College</i>			
Average yield per bearing acre Kent survey (12 lb.)	210	364	200
Highest recorded yield per acre (12 lb.)	550	958	500
Lowest recorded yield per acre (12 lb.)	24	40	13

These average yields per bearing acre are about one half of what could be expected from a successfully established and well-run block of cherries.

The money received in the market from a big crop tends to be higher than from a smaller crop, but it costs more to harvest and market a big crop because the charges per 12 lb. are fixed. It is worth noting here that experiences with cherries will differ from that with apples and pears. A high yield of cherries tends to be worth more to the grower than a high yield of apples. Net returns on the farm do not fly from one extreme to the other according to the size of crop: and there is no cause to fear that (at the present level of supply) a good national crop of cherries will mean lower

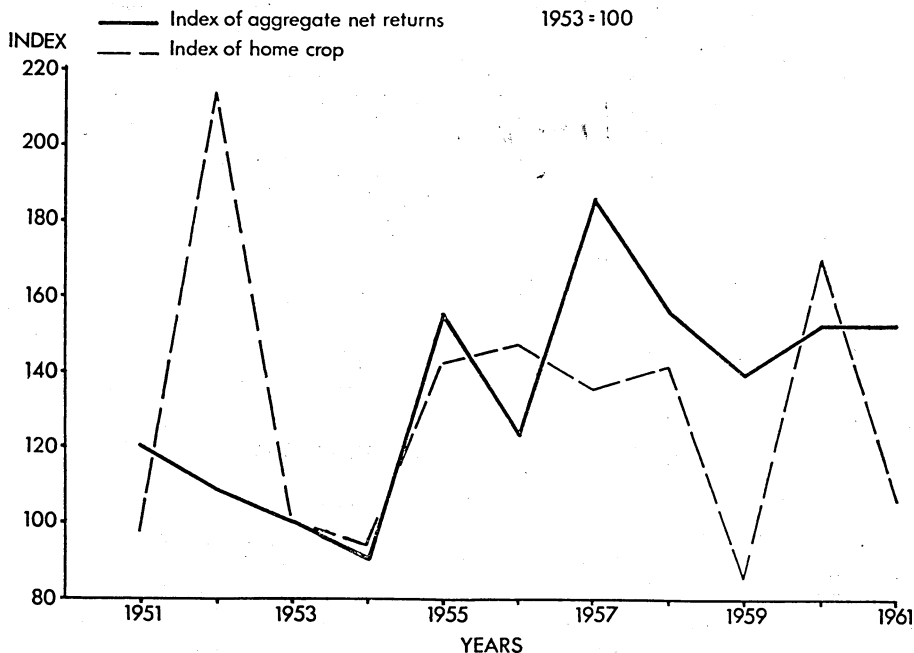


FIG. 10.
CALCULATED NET RETURNS PER ACRE 1951-1961.

net returns than from an average crop. Gross revenue and net returns on a sample of fifty-seven Kent farms for the three years 1959 to 1961 are summarized in Table 24.

TABLE 24.
AVERAGE GROSS AND NET REVENUE PER ACRE: 57 KENT FARMS,
1959-61

	1959 (price per 12 lb.)			1960			1961				
	£	s.	d.	£	s.	d.	£	s.	d.		
Gross Revenue @ 19/6	204	16	0	@ 14/-	254	17	0	@ 19/6	194	10	0
Revenue net of picking and marketing @ 13/-	136	11	0	@ 8/-	145	12	0	@ 13/-	129	13	0

The revenue per acre will be higher than the average if a good clean sample is produced and if the orchards have a full range of varieties covering the whole season.

In 1960 the range between the highest and lowest prices quoted for each week averaged 9d. per lb. While little fruit was sold at the highest price, fruit consistently bringing 2d. per lb. over the average level can produce a useful extra return to the grower of £31 10s. 0d. per acre (net of commission) on a 350 by 12 lb. crop. The late season crop also may bring an extra 1d. to 2d. per lb. If one-sixth of the crop is moved in the last week of the season at an extra 2d. per lb. this can mean an extra £5 4s. 10d. per acre, net of commission, to the grower on a 350 by 12 lb. crop. Several growers consider that it takes until the end of the season for the market to recover from the influx of immature fruit with which the home grown season opens.

Somewhat higher average prices have been found to apply to fruit going from fruit farms or intensive vegetable holdings with regular contacts in the market and with the transport companies: this would apply also to those farmers known in the markets as big suppliers.

When the effect of size of orchards upon yield is studied, some apparently conflicting data are obtained. Table 25 shows how average yields per acre tend to be highest on the smaller commercial units and lowest on the 10 to 30 acres group. Moreover, yields on the largest orchards were steadier than elsewhere. After what has been said so far about the virtues of size, these average yields may appear contradictory. However, as the previous analysis has shown, a number of large orchards not on fruit farms are of a "pastoral" character and their yields per acre would deflate the average. The yields shown are not a fair comparison between orchards of different size in the same circumstances.

TABLE 25.
AVERAGE YIELD PER ACRE—BY SIZE OF PRODUCTION UNIT

	Less than 10 acres (× 12 lb.)	10-30 acres (× 12 lb.)	More than 30 acres (× 12 lb.)
1959	254	168	147
1960	368	306	206
1961	238	190	212

Annual costs

The general financial picture of cherry-growing is one of accelerating expenditure during the year as the crop matures. Production expenses are light, harvesting expenses heavier, and marketing costs heaviest of all. Fixed costs are thus almost negligible, and any crop can be considered "produced" which would pay for

picking and marketing. Average figures can be very misleading, so in their place a good "standard" example has been worked out showing costs and returns per acre for a crop of 500 chips (of 12 lb.), equivalent to 2½ tons an acre (see Table 26).

TABLE 26.
REVENUE, CASH COSTS AND MARGIN PER ACRE FOR A GOOD "STANDARD"
CHERRY CROP

	£	s.	d.	£	s.	d.	£	s.	d.
<i>Gross Revenue</i> 500 × 12 lb. @ 19/6d.							487	10	0
<i>Less</i>									
10 per cent. commission	48	15	0						
Chips and lids @ 10d.	20	16	8						
Transport @ 7d.	14	11	8						
Market Handling @ 2d.	4	3	4						
				88	6	8			
Picking and ladder moving @ 3/-	75	0	0						
Estimate of minding (per acre)	10	0	0						
				85	0	0			
							173	6	8
<i>Net Revenue</i>							£314	3	4
<i>Orchard Expenditure</i>									
Pruning				3	10	0			
Spraying									
1 Tar oil									
1 D.D.T.									
3 Bordeaux Mixture				10	0	0			
Manures									
10 cwt. compound @ 25/-				12	18	6			
Magnesium (as spray)					10	0			
Mowing									
20 times per annum; no sheep				10	10	0			
							37	8	6
<i>Margin</i>							£276	14	10

See also Appendix 4 (p. 74)

Bird scaring is necessary for a period of six weeks and is often done as overtime by regular men: at 8 hours overtime per day this can amount to £90 plus £10 for cartridges. The picking and minding labour is 42 per cent. of total variable costs and all harvesting costs 86 per cent. Table 26 allowed for a fairly full scale of orchard treatment, but few growers thought this worthwhile in practice. From the margin of £277 an acre business and administrative overheads must be paid together with possibly £1 10s. 0d. per acre for the hire of hives of bees in Spring. The size of the overhead charges depends on the size of the farm as a whole and the proportion of the business devoted to cherries. A usual level is £10-15 per acre.

Harvesting and Marketing

The pattern of cultivation previously outlined means that the amount of attention required by the commercial cherry tree can be very small and even lower than that required by the culinary apple. Winter work is reduced and can be eliminated if tar oil is not used and on a farm where there is no other fruit no extra labour need be retained during the winter for pruning or for spraying the cherries. Spring or summer pruning has the advantages that dead wood, the main objective, can be seen and that the ladders will already be in the orchard in anticipation of the harvest. Disease risks are reduced by pruning the trees at this time of the year (See Fig. 11).

As with all horticultural crops a large amount of labour is required for the harvest; picking and handling are still almost entirely manual jobs. Harvest labour can be a problem on some farms, less so on others: cherry picking clashes with soft fruit picking on a mixed fruit farm and with the early summer vegetable season

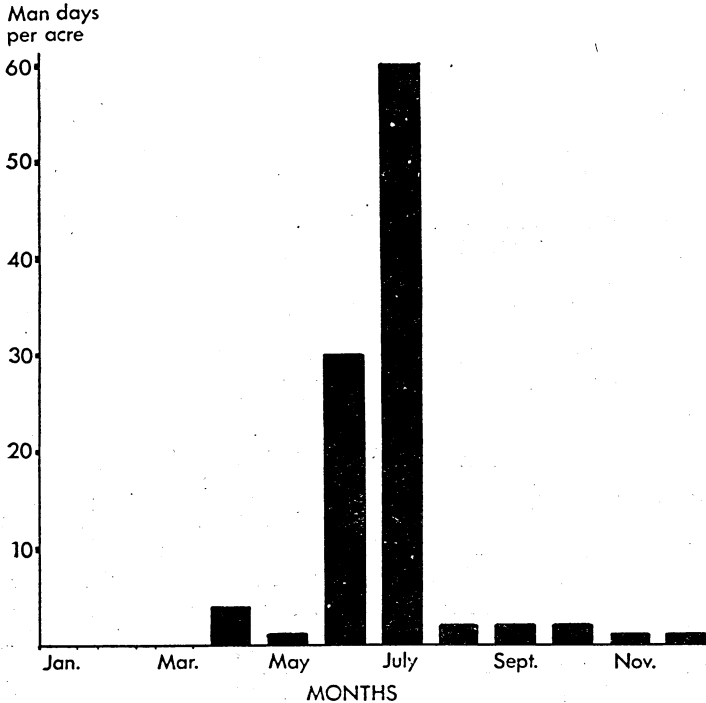


FIG. 11.
LABOUR REQUIRED ON STANDARD PRACTICE CHERRY ORCHARD.

on an intensive farm. On an extensive farm cherry picking comes in when cultural operations on field crops are finished and when there is little work with livestock. Permanent labour forms the nucleus of the picking gangs and if casual labour can be taken on at the actual cherry season this simplifies the matter.

On many predominantly fruit or extensive farms in North Kent smaller areas of mixed vegetables are cultivated as profitable ways of keeping established gang labour occupied through the spring, summer and autumn, each farm varying the choice of crops to suit the individual situation. Part of the casual labour routine on one North Kent farm is—

1. Hop twining
2. Cherry picking or gooseberry picking
3. Plum picking
4. Holidays or combine harvesting
5. Hop picking and pear and apple picking
6. Packhouse and cold store work.

Six to eight pickers are a normal gang and under straightforward conditions this gang will pick about four acres of mature trees in a season. Forty-foot long ladders are necessary to reach the topmost branches of mature trees, making the work of picking appear somewhat dangerous. Many of the pickers are women, unable to move such heavy ladders and it is necessary to employ a man with each gang capable of moving the ladders and more importantly, setting them safely against the tree. This man is the gang's weigher, leader and spokesman, and is paid appropriately. Depending on the other farm enterprises, labour may be available on the farm or may have to be recruited locally on a casual basis. The traditional unit of picking is the 24 lb. half sieve but this is now less commonly used, being replaced by the 12 lb. unit. The latter are preferred because:

1. They can be purchased cheaply in bulk, often secondhand;
2. A choice of types and materials is available. Used wooden tomato trays are cheap and withstand handling very well;
3. A 12 lb. unit is more suitable for women to handle;
4. Fruit in the bottom of the box is less subject to damage from the weight of fruit above.

Summary

The cherry trees now in bearing were planted at various times in the past—some of them as much as seventy years ago, so it is not surprising that a re-appraisal of cherry-growing may be necessary. Cherries are nowhere a grower's sole interest and have to be fitted in with other crops or have other crops fitted to them. Four main

types of cherry-growing farm can be distinguished. On one of these (the large fruit farm) cherry trees tend to be old and to yield lower net income per acre than modern plantations of apples and pears: in North Kent, however, the cherry orchards are on the whole younger, have shown higher profits than other fruits in relation to the work involved, and will not easily be ousted by any other crop. On another type of farm (pastoral use of land in an area where cherries succeed) cherries are less profitable than in other situations but are more profitable than any suitable alternative crop. In other situations (on mixed farms, whether farmed intensively or not) the cherry orchard is often not viable, and so it has been left to grow old: such orchards may originally have been too small, on unsuitable soil, or poorly sited and they tend to be less profitable than many other crops could be. There is no secure place for cherries on most of the mixed farms apparently suited to growing them.

Just as, when looking at the market for cherries there seemed to be a latent, untapped demand which could become effective if cherries were plentiful enough and made easy to buy, so in the production of cherries there seems to be a certain neglect of the crop which in some cases may be unjustified. The problems of achieving just what seems to be required to raise the status of the cherry industry are just as thorny in the production sphere as in the marketing sphere.

The combination of high investment per acre and the long waiting period involved in commercially establishing a cherry orchard should rule out speculative planting and limit it to sites where success can be assured. Not all farmers who could grow cherries are "fruit conscious", and viable acreages cannot be extended much at present without disturbing carefully-balanced demands for casual labour on the large farms concerned. All in all, the main conclusion of this economic study is that growth and progress in English cherry-growing depends upon it becoming a more highly localized and specialized farming activity in North Kent.

PART III: WHAT OF THE FUTURE?

CHAPTER 7

GROWERS' ATTITUDES TO THE CHERRY CROP

Cherries have been a long time finding their level as a farm crop within British agriculture. It would be rash to say that their permanent level has now been found: there is too much seeming contradiction in the current demand and the supply situations for stability to be reached at the present level of acreage.

The seeming contradiction, as exposed in Parts I and II, can be expressed in two simple statements.

1. In most years, there are plenty of consumers who would buy good cherries and pay a fair price for them, who do not get the opportunity to buy them;
2. There are very few English farms on which cherries are the best choice of crop (although these farms are large farms).

Unless there is a quick injection of new ideas and a new evaluation of the cherry crop, the trends of the last twenty years will continue and cherry growing will go on declining. Consumers' demand will go unrequited.

What, briefly, are the current trends? First, there will be progressive restriction of marketing to south-east England; second, a decline in marketable output; third, an increase in the amount of cherries going for processing. With market prices and net returns for cherries as they are now, the present body of growers will make no effort to continue production if that means re-planting. In many cases, of course, the grower is right: gummy trees in a small and gappy old orchard are not suggestive of a bright future.

Growers' attitudes to cherries vary from enthusiasm down to regarding them as a curse: this naturally has much effect on the treatment the present orchards receive and on their chances of survival and replacement. At least half of the present number of cherry growers have stated that they are not in favour of planting up new orchards, or of maintaining their existing acreage. Several growers are manifestly in favour of removing them completely from the farm. However, there is support for the crop, more largely from growers in North Kent than elsewhere. More often than not it is the

smaller growers who have least confidence in the crop. This may well be a reflection of the lack of economy in operating small blocks of cherries and of cherries often being an inferior use of good land on smaller holdings (see Table 27).

Growers who were considering grubbing cherries or had already done so gave the following reasons for their assessment.

1. Fruit farmers considered that the returns from cherries were not competitive with those from other top fruit;
2. Trees did not thrive under local conditions;
3. The expense of "minding" a small area was too great;
4. Market prices were too low;
5. It was too difficult to recruit pickers;
6. Yields were too low, and the trees did not respond to measures to increase yield.

These several reasons have been shown in their wider context in Parts 1 and 2 of this report.

It is noticeable here that growers tended to look *away* from the orchards to find reasons for non-success: by this account, they are sensitive to changes occurring off the farm (i.e. in the market), but evidently less ready to declare the short-comings of their own management. There was hardly any mention of the trees having been left to grow too old, of unpopular varieties not regularly picked, or generally light crops of stony cherries which gave no incentive to pickers, or of any rough budgeting to find out what the cherry orchard was costing in terms of barring the land to other crops.

One-third of the present number of growers believe that there is a continuing place for cherries on their farm: one-half wish to

TABLE 27.
GROWERS' ATTITUDES TO CHERRIES AS A CROP

				In favour	Not in favour	No opinion
				%	%	%
<i>Growers</i>						
Overall	..	..	..	31.50	55.25	13.25
N. Kent	..	..	..	44.00	39.80	16.10
E. Kent	..	..	..	26.30	66.00	7.89
Ragstone	..	..	..	25.58	62.70	11.62
Weald	..	..	..	20.00	68.80	11.11
<i>Acreage affected</i>						
Overall				66.60	17.70	15.60
N. Kent	..	..	..	79.60	8.40	12.00
E. Kent	..	..	..	33.50	34.75	31.75
Ragstone	..	..	..	38.10	31.20	30.70
Weald	..	..	..	48.00	45.70	6.30

oust them. The remainder are undecided. The one-third in favour of the crop, however, control two-thirds of the present acreage, and it is upon this feature that the long-term estimate of future supplies on page 64 relies. As will be argued later, it would be wrong to conclude that a favourable attitude to the crop will always result in increased planting of cherries—for the very good reason that most growers cannot well become more specialized in cherries than they are at present. The greatest hope of increase in the supply of sweet cherries for market is in the replacement of ageing mixed apple or plum orchards on fruit farms having good cherry land.

The gradual elimination of fresh cherries from the Englishman's diet would be contrary to what would be expected in view of the post-war increase in personal disposable income and the wide scope for "impulse" buying: but it will be hard to reverse the trend. Growers' attitudes to cherries are usually correctly based, although they may not be fully aware of what the future has in store for them. For instance, it seems that English growers cannot expect cherry growing either to become more simplified technically, to carry fewer risks than in the past or be free of competition from imported fruit. Nevertheless there are situations in which no other crop would have the appeal of, or be so profitable as, cherries. This point of view is expanded and explained in the rest of this part of the report.

Technical Aspects

Development in the techniques of cherry cultivation in the near future is unlikely to alter radically the economic prospects for the crop. The cherry tree has been the subject of a considerable amount of research work in centres throughout the world; in many of these studies it has merely been a test plant in physiological research but some work has been directed towards improving its cropping. In Britain, studies have been concerned with three aspects of the crop; varieties, cultural hazards and rootstocks. While work on varieties has produced some very promising new fruits, the main cultural hazard, bacterial canker, is without a solution; and it is unlikely that a rootstock conferring both early-maturing properties and reduced vigour on scion varieties will be developed and field-tested within 15 years. Growers may expect, then, that the tall tree will be with them for as far ahead as they would care to plan.

This being so, the potentially most rewarding field for improvement is in machine-aided harvesting and to a lesser extent in bulk handling of cherries. Attempts in America to perfect a system of bulk handling cherries for processing, using large water-filled tanks, have met with marked success; cool water removes field heat and the fruit arrives at the factory in a

better condition than when harvested in 25–35 lb. field boxes. In Britain, the opportunities for the application of this technique are fewer since the overall tonnage processed is smaller and is made up of individually smaller farm contributions than is the case in the United States. A system could be organized by English canning firms if the improvement in fruit quality and the reduction in costs were sufficiently great.

Complete mechanical harvesting of sweet cherries for market seems to be a non-starter but a less laborious method of picking the fruit off the trees may be realizable. American research here has some application to British cherries: two “leads” are (a) drop-picking and (b) tree shaking. Whittenberger and Hills in Washington have shown that to drop cherries into nets suspended below the trees increases the rate of hand picking by 36 per cent.: bruising was “only slight” and the fruit kept satisfactorily for a week at 37° F. Reports of the Michigan Agricultural Experimental Station, 1959 (onwards) review the use of tractor-mounted boom shakers and canvas collecting units as a harvesting technique. Tree shakers have been used commercially for about ten years in parts of California. They are accepted as a labour-saving method of harvesting nuts and some fleshy small fruits destined for processing, and the machines themselves have now been developed to a point where the shaking motion applied becomes something of an art and not the mere transmission of power. An initial “twitch” will dispose of cull fruits and thereafter 70–90 per cent. recovery of marketable fruit can be obtained: there is little bruising and the whole operation is estimated to reduce harvesting costs by one half. Damage to the tree bark and roots is reported to be slight. So long as English cherries have to be fine and unblemished specimens to *attract* consumers, the fruit cannot be allowed to sustain a long drop: the alternative would seem to be to lift the whole apparatus as nearly as possible to the level of the fruit. No doubt the first step in this direction will be the elevated cage for pickers.

Is it unrealistic to assume that a 500 × 12 lb. crop of cherries will not be picked for less than £100 (4s. per chip) ten years from now? If not, and a machine were to replace four-fifths of the number of people now needed to harvest the crop, prospective savings amount to £1,600 a year on a 20-acre block of cherries: an investment of £5,000 or so in serviceable harvesting equipment would not be excessive in these circumstances.

If foreseeable changes in the technique of harvesting are largely a matter of mechanization, then the economic prospects will change as well, because the full crop will become cheaper to harvest per unit than the light crop; consequently the grower could make the

same profit per acre at a slightly lower price than otherwise, and if the grower were satisfied with a slightly lower price the fruit could travel farther and thus extend the area over which cherries were marketed. It is also conceivable that on the largest farms a battery of picking machines could increase daily output (if desirable), concentrate it at one point and initiate controlled distribution of the crop. A wider distribution of the crop throughout the country will become more feasible when the technique of using ice-trucks to distant markets has been mastered. The trucks presently in use are 4-ton units and since few growers can fill one from a day's picking, co-ordination of loads from several farms into full truck loads will be an essential part making the technique an economic proposition.

Risk in Planting Cherries

Any general conclusion that developments in harvesting and marketing are likely to be to the advantage of growers would be vitiated if the fruit offered was not good enough to *attract* consumers. There is nothing to be gained by prolonging the present state of affairs, and there are real risks that if indiscriminate planting-out now takes place, improvement in the overall quality of fruit may not be realized. The "general" grower of cherries may not "make the grade" either because his fruit is often marked, or because his yields are low.

In post-war years the public demand for fresh fruit has shown a preference for apples and pears, stone fruits have been less popular. It is no accident that progress in fruit consumption has occurred where quality and reliability in the product have been improved and marketing season extended. To increase consumption of cherries in the same way will not be as easy. There is no storage season, and the grower has less control over quality than he has with apples and pears.

Not only is the risk of the crop failing to become established as a fruitful concern very real but the profitable life of a mature orchard can be shortened by disease and inclemency of weather: undoubtedly the best evidence as to whether cherries are likely to succeed on the farm is a cherry orchard similar to that concerned, which is already bearing good yields. A grower in East Kent attempted to set up a five-acre cherry unit using capital from within the business. It was evident twelve years later that the local conditions were unsuitable and this orchard will now be grubbed. This venture represented a direct financial loss (expenditure minus revenue) to the grower of over £1,050 plus an added £125 for grubbing, and had the money been invested a further £1,000 in interest payments could have been received. Assuming a modest profit of £50 an acre from some other

intensive use of the land the alternative profit foregone was at least £3,000: in fact some intercropping was done but nevertheless the venture was a great loss to the grower.

Under present conditions an orchard of at least ten acres is essential to make a worthwhile production unit and the total capital outlay on such a venture over 12 years could be £4,100 plus a notional figure for lost revenue from other crops. A smaller unit is likely to be uneconomic on any type of farm because of the cost of bird-scaring during harvest time and on a non-fruit farm the acreage would have to be a good deal larger to justify the maintenance of special equipment and spray machinery. The optimum units are perhaps of 10 to 15 acres alongside other fruit crops and above 40 acres with or without other fruit crops. The big units have certain economies of scale in their favour, particularly in machinery usage, marketing and business organization while smaller units aim to produce a higher quality, higher priced fruit with an individual appeal but inevitably at a higher real cost in operations and family labour. The long term and large scale nature of the crop make it more suitable for inclusion on big enterprises and even here its inflexibility is a disadvantage. Already the growers who are re-planting significant acreages are the large farmers in North Kent and on the Ragstone ridge; smaller plantings on farms with inherently good soil conditions make only a small part of the re-planted or new acreage.

These considerations should be a warning to general fruit growers against planting up a few acres of cherries as a gamble on potential shortage of cherries lifting their price significantly. It seems to be implied by this study of cherry growing that progress lies in the direction of regional specialization: it will not help to have small parcels of cherry orchard scattered throughout Kent unless their produce is destined for sale locally. It is unlikely that most of the present fruit farms, which have been sited with apples and pears in mind, contain an unplanted area on which economic cherry orchards could be established. Some growers of apples and pears may be attracted by the prospective stability of the net returns from cherries—for instance, there is less bienniality in cherries. This, however, is as much a result of location as of regularity of bearing. There is no evidence that yields of cherries away from the favoured North Kent area are as regular as those obtained in North Kent, the area from which the average figures of net returns per acre gain their present stability.

Imports

European production of cherries is rising as the post-war

plantings come into bearing, but consumption is rising too. Italian planting has slowed down recently and in any case is designed to provide cherries earlier in the year than can the new acreage in Germany. The planting of new areas in other north European countries appears to have stopped and only the more successful plantings are being maintained, the general consensus being that almost any crop can make as good use of 'good average' land as a mediocre crop of cherries will.

Fortunately, a considerable but unknown quantity of the continental European production and trade is in sour cherries suitable for processing and cooking; for instance, 44 per cent. of the trees in Germany are of sour varieties while only 8 per cent. of the trees in Britain are of this type. There is a remarkable lack of data on yields and type of fruit grown in various countries and existing data are often contradictory.

British growers will have to get used to the idea of early-season imports because there will be a "pull" arising from the shortage in Britain as well as a "push" arising from fruit surpluses abroad. Italian fruit will be the main problem. However, even with no restrictions on trade, exporters to Britain are not going to find it in their interests to flood the market with fruit to the point at which prices slump: and while growers in Northern Italy currently have somewhat lower labour costs than the British grower does, the pressure on labour from other industries is already being felt. The costs of a simple grading system and of refrigerated rail and sea transport are added burdens for the exporter in Italy who, all in all, is no better able to stand low prices than the Kent grower.

The assumed lack of complete overlap of the Italian and British seasons means that, with the currently limited storage life of the cherry, the British grower is likely to have all the market for at least half of the British season. The only north European country with an exportable surplus is Belgium and, currently, most of this surplus goes to Holland. The surplus is small, showing no signs of increasing, but if a redistribution of imports and exports left a small amount available to send to Britain it could have an unwelcome effect on the British growers' part of the main season market. In any event imported produce can only drive British fruit off the market if the quality, rather than the presentation, of that fruit is markedly below the standard of the European fruit (and there is no reason why it should be) or if there is more purposeful marketing of imported fruit.

The Extent of Future Changes: 1970 onwards

Since there is a fifteen-year gap between the decision to increase production and its realization, projections for 1975 can be

made firmly on facts as reported in 1960, and clues to some of the happenings between now and 1975 can be had from recent events. Moreover, knowing growers' present attitudes to cherries, and assuming that these remain unchanged (or even if they do not), projection of future supplies can be carried still further into the future.

No matter what the recent Orchard Census may show for 1962, it is incontestable that cherry trees have not been planted since 1950 on a scale sufficient to maintain the present acreage. Production, of course, could be higher from fewer acres if all orchards were more productive. Age-of-tree data from the Censuses of 1951 and 1957 are given in Table 28.

TABLE 28.
CHERRY ACREAGE: PERCENTAGE OVER AND UNDER 7 YEARS OF AGE:
ENGLAND AND WALES

	Under seven years	Over seven years
1951	23·50 per cent.	76·50 per cent.
1957	14·60 per cent.	85·40 per cent.

Source: Ministry of Agriculture, Fisheries and Food.

Among cherry businesses, as with all types of businesses, there is a vast range of physical and financial performance. In the future it is likely that uneconomic orchard units, that is, units which it would pay the grower to replace by another crop, will slowly disappear. (There may be increased reluctance to grub, but much less increased incentive to re-plant.) Consequently, the general level of performance in cherry-growing for the market may be expected to rise. Certainly, relatively few growers are now obtaining what is considered to be a "good average" level of production. Those entrusted with the management of the remaining units may well decide to grub their less successful orchards and find a cheaper way of harvesting those they retain (i.e. those not to be replaced). Already such grubbing without replacement has taken place in the Weald where there is a high proportion of older trees: Weald orchards as a whole are reasonably fruitful and financially successful, but, despite this, few growers are anxious to keep a due proportion of young trees. Growers in the Ragstone ridge area were more inclined to re-plant but existing orchards are comparatively the least successful of any in Kent though there are a few notable exceptions. Both in the Weald and on the Ragstone ridge cherries are a subsidiary enterprise on farms and to a less extent this is true of East Kent. There are only two units of over 50 acres in these areas and the

cherries are not holding their own against the claims of other fruit crops, of vegetable crops and of hops-inspired rotations: in all three areas cherry growing is declining in extent and popularity.

North Kent is the only area where re-planting is being undertaken on a considerable scale, and even here the rate is not sufficient to maintain the existing acreage. While the bulk of the cherry crop is produced in North Kent the yield per acre is often only a moderate one and many businesses flourish only because of the large scale of production and low overhead costs: cherries are grown because few other crops would produce these moderate results with so little attention. The cherry acreage in the area is constantly being reduced by the demand for the land for other intensive crops, for the building of houses and roads: several orchards had been sold to brickmakers—these demands are all more lucrative to satisfy than is that for cherries.

In order to maintain any given acreage of cherry orchard in its prime, 2.068 per cent. of the whole requires re-planting each year: thus, for full replacement, 14.5 per cent. should be aged 7 years or below, 31 per cent. 15 years or below and 62 per cent. below 30 years of age. This ideal state is not realized even on farms where it is intended that cherry growing shall continue: 27 per cent. (not 31 per cent.) of all trees on two-thirds of the present acreage of cherries were under 15 years of age. Up to one-third of the present acreage is unlikely to be replaced unless prospects for cherries improve radically. Translated into terms of the acreage in Kent (12,738 acres in 1957), this implies:

- (a) that 4,250 acres will go out of production and not be replaced (see Table 29);
- (b) that 8,500 acres will be replaced, but not fully: the present population of young trees will only furnish 7,300 bearing acres in their prime for the period 1970-80.

TABLE 29.

AGES OF CHERRY TREES MANAGED BY GROWERS FAVOURING THE CROP:
PERCENTAGES OF SAMPLE ACREAGE

Years		less than 15	15-30	31-50	over 51
Overall	per cent.	26.70	29.60	33.00	10.50
North	acres	285.00	428.50	110.50	110.50
Kent	per cent.	22.70	34.12	34.40	8.80
East	acres	25.50	12.50	18.00	7.00
Kent	per cent.	40.40	19.80	28.50	11.10
Ragstone	acres	67.00	10.00	24.00	30.00
	per cent.	51.10	7.63	18.30	22.90
Weald	acres	41.75	14.00	44.50	18.00
	per cent.	35.30	11.80	37.60	15.20

But the 8,500 acres are not completely self-regenerating, and in addition, for a number of years—up to about 45—there would be the rapidly wasting and ageing 4,258 acres and the unreplaced acreage of 1,200 (8,500 minus 7,300) where cherries were left to grow old.

So a temporary (at least) fall in commercial output seems inevitable. In fact 56·3 per cent. (not 62 per cent.) of the cherry acreage in Kent is less than 30 years of age. A slight preponderance of present trees must now be above 30 years of age; these trees will be eliminated in the next 25 years and cause a fairly swift drop in commercial acreage, which will thereafter level out at 8–9,000 acres before finally falling to 7,500 if no “wave” of new planting occurs in the next decade.

If a forecast of the British cherry acreage is made on the basis of the likely decline in the Kent acreage it is found that over a period of 40 years the national acreage would decline to about 10,000 acres. This assumes that the current attitudes of Kent growers are reflected throughout the country and that nothing happens which will change their attitudes to cherries as a crop. The general attitude of growers could change—and without proper cause—if it were known that leading growers were planting up strongly.

Trees known to have been taken out recently averaged only 48 years. This includes many which were taken out prematurely (below 20 years of age), for the general opinion on the economic life of a cherry tree is 55 years from planting i.e. 40 years of full cropping. There are, of course, some of the original “foundation stock” of trees, now 90 years old, which are still productive. In spite of a reduction in acreage in the past five years home production has been variable about its 1951–1955 average of 23,000 tons: this suggests that the acreage being grubbed was making little contribution to the annual output. Changes as large as those forecast may not be disclosed in the current statistics because orchards out of commercial production but not yet grubbed may still feature in the acreage returns.

The Ministry of Agriculture, Fisheries and Food, through a committee of specialists, has been giving attention to the question of cherry varieties, and is preparing for publication a list of (a) varieties to be recommended for planting, (b) varieties found satisfactory in certain districts, and (c) varieties not recommended for planting. By courtesy of the Ministry, a list of the (a) and (b) varieties is given in Appendix 7, p. 74. Information concerning these varieties, where not already available in fruit literature, may be obtained from the National Agricultural Advisory Service.

STRIKING THE RIGHT BALANCE

The Case for New Planting

It is from within agriculture that cases of perversity in supply response are usually quoted, and to take cherries as an example, it is quite conceivable that during the next fifteen years cherry prices will rise and production will continue to fall. Some growers are taking out their cherry trees and not re-planting them for the very good reason that it will not pay them to do so. A few growers who could succeed with the crop have no cause at present to plant up with it. A few growers like the crop and intend to continue, but there is little room on their farms for much expansion, otherwise the balance of crops, developed to suit the organization of the farm, will be destroyed. When—or before—the area of cherries in Kent is down to 7,500 acres, more growers will think it has fallen too low. Would they be right to anticipate this situation, and by how much?

Assuming a healthy life of 55 years, with 35 years in full bearing, a productive orchard averaging 500 chips an acre at today's prices could average a net profit per acre per year of £165 for 55 years after capital re-payment and depreciation have been deducted: this represents an annual return of 40 per cent. on initial investment. Bear in mind, however, that 47 per cent. of the acreage surveyed was yielding less than 200 chips an acre and this would give at the most a $7\frac{1}{2}$ per cent. return on investment. Does this not clarify the issue? With costs and prices as they are today a good cherry orchard seems a more worthwhile investment than any other sort of orchard—and there is good reason to believe that any changes in the market price will be in the growers' favour. On the other hand, if cherries do not succeed, almost any crop would show a better return on investment.

Twenty years hence supplies of English cherries will almost certainly be scarce. At present about 34,000 tons of cherries are consumed in Britain annually in both fresh and preserved forms. If the consumption per head remains stable then the forecast population of 57 millions in 1980 could absorb about 37,000 tons of cherries: a 10 per cent. increase in national demand for fresh cherries as a result of better distribution, and the southward move of population, aided by higher personal incomes, could bring the figure up to 40,000 tons, leaving a deficit of something like 25,000 tons. If, by that

time, processors will take 5,000 tons of the English crop, there will merely be 9,000 tons of English cherries sold fresh. This is no more than half the 1960-62 level of production. Moreover, even if 12,500 tons of processed cherries are then imported each year, the same amount (some 12,500 tons)—that is, five times the present volume,—of imported fresh cherries would be necessary to re-create the *status quo* of 1960-62. Trees planted after 1962 are unlikely to make much contribution to home production before 1976-80. Consequently, Britain will have to place more reliance on imported cherries until such times as home production shows signs of increasing. Trends to the end of the century are forecast in Table 30.

TABLE 30.
POSSIBLE NATIONAL CHERRY ACREAGE TRENDS 1960 to 2000

	1960's	1970	1980	1990	2000
<i>Acreage</i>					
Total	16,800	15,000	13,000	11,000	10,000
Bearing	13,500	11,000	9,000	8,000	7,500
Estimated annual production (tons)	23,000	19,400	16,360	15,000	14,500
Estimated yield per bearing acre (12 lb.)	318- 320	330- 350	340- 390	350- 400	360-
Estimated annual production given higher average yields (tons)	23,000	20,600	18,700	17,000	
Population (millions)	52.5	55	57.75	60.5	63.75

Population estimates from: Annual Abstract of Statistics 1961.

A cut of 50 per cent. in the supplies of English cherries is a far more radical change in the economic scene than anything that has happened since 1945 and it is bound to react on prices. A grower who is contemplating planting now has to be thinking ahead to 1980. If a modest increase in price of 20 per cent. is assumed to follow the 50 per cent. fall in good supplies by 1980, with harvesting methods much changed in nature but costing no more than they do today, the prospects for cherries appear much improved in relation to those for apples and pears on (the best) cherry land. Notwithstanding the long wait for the trees to come into bearing, the notional £400 an acre investment in cherry orchards would be recouped after two years of full bearing. In this respect the financial risks appear negligible and so they are to the grower with the right land to spare. And as an alternative to dessert apples, cherries can be attractive in the right situation. For one thing, a grower can embark on cherry production without having to allow for further heavy outlays

of capital on packhouses or cold stores. Also, in the more popular apple and pear trade, standards of quality will be higher and competition "tougher" than the confirmed cherry grower will really appreciate. The economic "terms of exchange" between dessert apples and sweet cherries are set out in Table 31. At a yield of 200 halves (400 by 12 lb. chips) an acre, the aggregate profit from cherries (subject to what has previously been written concerning area and site) would overtake that from apples (at 300 marketed bushels an acre) about ten years after the apple orchard had begun to pay. Cherries would be the better alternative to apples bearing at 300 bushels an acre right down to a yield of 150 marketed halves an acre. To be self-sufficient in the 1980-90's Britain would need at least 23,000 bearing acres of cherry trees or a total of 27,000 acres of all ages, 11,000 of which would have to be planted immediately and all grubbing without replacement would have to cease. This total acreage is much higher than has ever been known in Britain.

At present, because price is not much affected by increases in supply (i.e. demand is elastic) growers' market returns are thought to be higher from a large crop than from a moderate or low crop. (Experience in 1952 can be discounted, because it is assumed that if a future crop is of the same size, it would be of much superior quality.) Secondly, because harvesting and marketing costs per acre are four times the annual cultivation costs, there tends to be considerable differences between market revenue and net returns, the deduction per chip being relatively constant. Thus any above-normal crop of acceptable overall quality, would result in higher net returns.

The market features of cherries have already been referred to. When this economic study of cherry-growing was designed, it was hoped that the price-and-quantity movements would give a clue about the level of output which would maximize cherry growers' incomes. (When so much of the total acreage of a crop is localized, it is conceivable that growers could act together, in the manner of an *industry*, and definitely plan to have that area of cherries which, in terms of profit per ton and number of tons sold, would entail maximum profit.) However, economists cannot give in this respect the help they intended to give. In fact, the market for good cherries is still unsatisfied and the level of production which would maximize growers' incomes is somewhere beyond any level previously attained, but exactly where the limit would be reached it is impossible to say.

More than a hint of what is in store for growers of good cherries may be contained in Figure 10 (p. 47), which shows how computed net returns from cherries sold both fresh and for processing have increased since 1954 (and may continue to increase, of course). To

place too great a reliance upon the extent of the improvement would be unwise, as the basic data may be incorrect: but even if the sense (i.e. upward direction) of the movement is correct, some cherry growers who have grubbed without replacement have made a questionable decision.

The forecast of market trends for fresh fruit is fortified by a consideration of the requirement of processors. It is clear, moreover, that more cherries for canning and otherwise preserving are going to be needed in Britain than are at present supplied and this should be of concern to growers. The forward planning of the production of some food crops is aided by production contracts between the processor/canner and the grower. While the time element with cherries makes unworkable a contract of the sort used for say, vining peas, it is desirable that the processors should take more interest in the future of the industry: one opening would be to sponsor some research to find the most suitable varieties and the likely quantities required in future for culinary work, canning, crystallizing and for fresh consumption. There is not a very clear distinction between acid and sweet cherries used in the processing and preserving trade which adds to the confusion. At present the food trade seems to be able to get adequate supplies of preserved acid cherries from overseas, it is said to be short of sweet white cherries suitable for canning.

On this analysis the British grower could consider producing more fruit of the good canning varieties, perhaps, by top grafting some less successful early dessert varieties: later dessert varieties will have the advantage that they will not have to meet such strong competition from the main season Italian fruit but all home grown fruit must be of a quality which will bear comparison with the "export" grade from other countries. It is unlikely that there will be much need for the British grower to plant acid varieties as the demand is well supplied and since the fruit is preserved advantage can be taken of good years to replenish stocks. Acid cherries are less demanding of the best environment than sweet cherries, they come into bearing more early in life and the response to a greater demand would be a good deal more swift than in the case of sweet cherries.

Prescription for Success

If horticulture in Britain were to be planned or zoned, no doubt Kent would still have the majority of the cherry orchards. So long as there is land which will grow *all* fruit crops, and only the best of this will grow cherries well, it will be advantageous to put the best land into cherries. Apples and pears (say) can be grown almost equally well on the remaining fruit land, whereas if cherries are grown on the less good land, they do not succeed. It is a simple case

of comparative advantage: in the first case the consumer could have cherries *and* other fruit: in the second he could have other fruit but fewer cherries. This economic argument, conceived in the public interest, holds good for the individual grower, too, so long as cherries are just as profitable as apples and pears: there is now plenty of evidence that in the right situation cherries are a profitable crop. Under these conditions growers could agree to plant cherries on the best sites.

Two deterrents remain however; harvesting, and the waiting period. At present, the cherry crop is most secure on large farms able to give pickers four months' casual employment. There can be little doubt that before many of the cherry trees now in their prime reach the end of their commercial life mechanization of harvesting—whether of the soft fruit, vegetables or hops—will at some point have broken into the traditional pattern of casual work on the large cherry-growing farms, and the picking gangs which have been such a feature will have begun to disintegrate. Growers will be compelled to turn to other methods of harvesting. Given time, harvesting machines will be designed and then refined, and getting the crop picked will no longer be an obstacle preventing growers from planting up. What will then restrain them from planting? Possibly the inherent risks in waiting fifteen years or more to see the return on the investment: this will not suit the small farmer. Only growers having adequate acreage *without* cherries are likely to have land to spare for new cherry orchards. Even so, a new venture into cherries could fail for a number of reasons and it behoves an intending grower to seek all the advice available about peculiarities of varieties and sites.

Decisions in the field of marketing are very much crabbled by the cherry's short season. A market situation as outlined in Part I might galvanize many an industrialist into immediate market research—until he remembered that his product would be available for only a few weeks each year. All the same, the traditional method of distribution does not accord the cherry much distinction. No doubt salesmen make efforts to sell: does the product always help them, and is its presentation unflinchingly attractive? From what little has been learned during this enquiry about cherry marketing, it seems that there is possibly more scope for organizing the marketing and distribution of this fruit crop than any other. There are considerable possibilities. A large part of the supply is in the hands of a small number of large growers, who farm in the same part of Kent. There is less local production of cherries than of any other fruit and consequently more consumers than usual are dependent upon the arterial distribution system. Could there be circumstances more suggestive of successful sales promotion? Known already in the

London markets, cherries from these farms, if carrying a brand name and packed for safe travel could top the high price fresh market over much of the country. Some move of this sort will be desirable if only to differentiate the good cherry from the produce of inferior orchards. Whether the cherries are packed for the consumer on the farm or not (probably it would be better done along the chain of distribution) is immaterial. The need is to lift the good eating cherry out of its environment and offer it as a new commodity.

When discussing the marketing of cherries in the future, there are numerous suppositions to be made—suppositions which, to the practising grower, mean risks that have to be taken. For example, if the introduction of machines speeds up harvesting, will it be necessary or desirable to have the long-picking sequence of varieties? Why ask consumers to make regular purchases of cherries, just when strawberries are getting cheaper? Would there be advantage in concentrating supply into three or four weeks, so creating a definite cherry season, and marketing cherries throughout the country? The indications are that growers have more to gain by allowing more people to make one or two purchases of cherries than by encouraging fewer people to make repeated purchases. It is hard to imagine the wholesale trade being galvanized into cherry-distribution just for three or four weeks of the year (on top of the strawberry rush). In any case there would not be enough cherries to satisfy everybody: but the operation appears reasonably manageable for one or more groups of retail chain stores. The source of present failings is that there are not enough good English cherries to allow a nation-wide habit of once-a-year cherry-buying to develop.

Part of the apparent effect of Italian cherries on the price of English cherries recently can be ascribed to the earliness of the English crop: there have been three early seasons and one very early season in the last five years. The English crop has latterly been in full pick by the last week in June—and more of the Italian crop has been spreading over into July. As the tide of English cherries recedes, that of imported cherries may advance. English growers have consoled themselves with the thought that they have the advantage in the later half of the present marketing season. It can be seen now that to extend or amplify the cherry season by prolonging it is not necessarily the best policy. A bulk earlier in the season when cherries are still a relatively cheap fruit, and when imports add interest to the market, is a valid alternative to the more popular policy of concentrating supply in the later part of the season.

Comparative Advantage

Where, then, lies a new balance between supply and demand

for English sweet cherries? Though the data in Figure 10 may be somewhat inaccurate, ordinary economic reasoning would suggest that good crops of cherries are likely to increase in value relative to good crops of apples. Confirmed cherry-growers already have a workable and durable proportion of cherries on their farms. Who else is likely to be interested? It may, perhaps, be two types of grower, those with large fruit farms (but few cherries) in North Kent, and those with large mixed farms but predominantly extensive crops in the same favoured locality. The decision of growers with a large acreage of fruit already may hang on the future expectation of income from dessert apples. Cherries need no gas stores (but if a technique for holding them in controlled atmosphere chambers were designed, some storage space would normally be available in June and July) and no packing shed. Taking £70 an acre (say 5s. a bushel) as a profit norm for apples, the scope for cherries seems considerable.

In their budgeting, fruit growers would have to take into account the comparative advantage of cherries as against, say, dessert apples on *potentially good cherry land*. Taking a moderate average yield (though double the present average) of 200 halves (400 by 12 lb. or 2.15 tons) an acre, and an anticipated price 20 per cent. higher than in 1960-62, net returns per acre would be about £335 and the profit after paying harvesting and cultural costs and meeting overheads would be £200 an acre. For comparison, figures of £20 and £75 have been taken for non-fruit crops and dessert apples respectively.

Table 31 shows how a fruit grower who *could* produce good crops of cherries would conceivably profit in the long run if (a) he added to his fruit acreage by planting cherries, and (b) he replaced an existing orchard with cherries instead of dessert apples.

Apparently the fruit grower would have to wait nineteen or twenty years for any real gain from planting cherries—ten years longer than for apples—if an addition to or in replacement of apples in his orchards. With a longer economic life *and* higher profits an acre, cherries would be preferable to apples once established.

The large-scale mixed farmer, on the other hand, might be attracted to cherries because, although his expectation of income was below that of the fruit grower's, cherries were considerably more profitable on certain land on the farm than any alternative. His calculations might show a situation like that in Table 32.

Bearing in mind that mixed farmers have less than half the fruit growers' acreage of cherries, no great increase can be expected among this group of growers. From the market's point of view, moreover, it is desirable that the cherries should be well grown.

TABLE 31.
THE COMPARATIVE FINANCIAL ADVANTAGE OF CHERRIES

	A for an extension of planting (per acre)	B for replacement of dessert apples with cherries (per acre)
	£	£
Direct cost of commercial establishment (15 years) ¹	400	100
Net profit sacrificed during establishment period	300	550
Total extra "cost" of cherries	700	650
Extra annual net profit from cherries ²	180	130
Time after which cherries become the more profitable	19 years (4 years' crops)	20 years (5 years' crops)

Notes:

- ¹ interest charges included: apple orchard assumed to be profitable after 9 years, and to cost £300 an acre to establish.
- ² this gain in profit begins when the cherry orchard is 15 years old.

TABLE 32.
A COMPARISON: CHERRIES AND FARM CROPS

	assuming an annual average crop of 250 chips an acre
	£
Direct cost of establishment (15 years)	400
Net profit sacrificed during period	300
Total cost	700
Increased annual net profit	60
Estimated time to recoup all costs	27 years (12 years' crops)

If with greater interest and purpose in the cherry crop, some differentiation of use (and price) were to develop, there may be scope for a predominantly processing cherry. Such a crop would not be grown to the specification of a market sample, and would enable cherry production to spread to other farms than those on land ideal for growing a market crop. In particular, cherries on a "pastoral"-type farm would come into their own. Other types of farm may not be generally large enough to support cherry production, and would have less reason for doing so because there are equally good alternatives: but no other intensive crop would offer the same advantages as cherries in some pastoral situations. If harvesting could be left

to a contractor, who will then have a machine and a small team instead of the present gang, the crop will virtually grow itself, once the trees are established.

Summary

Looking backwards over the years, the picture is one of an undistinguished fruit, grown somewhat indiscriminately on a large number of farms. Failing a re-appreciation of the crop, annual production will continue to dwindle. Twenty years hence the crop of good market quality will be half that of today, and although the consequent rise in market price may be small relative to the fall in supplies, it will be sufficient to make cherries a more attractive orchard crop, and there may be another "boom" of unwise planting. Prudent planting now could help to prevent this situation occurring, and could initiate a brighter future for cherry growers.

It is not expected that the few cherry growers who form the backbone of the industry can plant up much more of their farms with cherries. Nor is it recommended that all fruit growers and mixed farmers should plant up a few acres. The most appropriate basis for expansion of the cherry industry is (a) planting market varieties of cherries instead of other orchard fruit in minimum blocks of ten acres, on suitable land on large fruit farms where the capital investment and long waiting period will be less noticeable than elsewhere, and (b) planting processing varieties of cherries on large pastoral farms where the investment can be minimized and harvesting undertaken mechanically. Implicit in this programme for planting is an effort to raise the value of the market cherry by improved methods of presentation and distribution. The market pointers suggest that by 1980 the present annual output of 23,000 tons could be sold at higher real prices than today, with production costs possibly reduced. There seems to be no way of meeting the full potential demand of 37,000 tons. Up to 14,000 acres of cherry trees (12,000 in bearing, 2,000 young) will be required to maintain production at its present level, and it has been shown that, without a change in attitude to the crop, the acreage will then be about 9,000. To plan for forty years ahead in the way outlined, calls for faith in the future and a regard for future generations on the grower's part. Only the large-scale grower in North Kent seems fitted to shoulder this responsibility.

APPENDIX I

The 20 per cent. sample of farms from which records were obtained compares closely with the actual situation in Kent in many respects as is shown below:

Distribution of cherry acreage					Whole of Kent per cent.	Wye College Study per cent.		
North Kent	61·53	73·88	58·87	74·51
East Kent	12·35		15·64	
Ragstone	14·35		13·83	
Weald	11·76		11·63	
Distribution of number of farms growing cherries								
North Kent	50·40	62·70	44·30	60·75
East Kent	12·30		16·45	
Ragstone	19·26		20·67	
Weald	18·01		18·56	
Distribution of acreage of cherries among types of farm								
Mainly fruit	49·46		44·34	
Fruit with Intensive	11·68		12·63	
Fruit with Hops	9·57		10·74	
Fruit with Extensive	24·93		27·42	
Grubbed and Unrecorded	4·33		4·84	

APPENDIX 2

Import Restrictions

Britain is currently isolated to some extent from European trade by the following restrictions on the importation of cherries.

<i>Prohibited</i>	1 June—30 September inclusive	Southern Italy Portugal Spain
	16 June—30 September inclusive	Northern Italy France (south of 46° N.) Austria Buglaria Hungary Yugoslavia

Outside these limits raw fruit is inspected for larvae of cherry fruit moth (*Rhagoletis cerasi* L.), each consignment being passed or rejected individually without hindrance to other consignments of similar origin.

Tariff Cherries are on open licence (no quota restrictions) if consigned from Western Europe but are subject to a 10 per cent. *ad valorem* tariff throughout the year and from the 1st June to the 15th August such fruit as is not barred by reason of origin or of pest is subject to a tariff of 4d. a pound.

Imports from Commonwealth countries are admitted free of duty.

APPENDIX 3

Cherry Production and Trade in European and East Mediterranean Countries

	1957	1958	1959	1960	1961	1962
<i>West Germany</i>				Tons		
Production	98,000	210,000	149,000	249,000	211,000	210,000
Imports Fresh	7,312	13,992	16,799	22,783	19,952	23,951
„ Processed	—	1,064	1,462	1,617	2,630	—
Exports	1,200	—	—	—	—	—
<i>Italy</i>						
Production	112,000	172,000	175,000	185,000	199,000	213,000
Exports Fresh	7,181	17,084	23,137	30,927	24,547	31,292
„ Processed	—	—	12,760	16,374	21,742	—
<i>France</i>						
Production	67,000	62,000	80,000	91,000	91,000	98,000
Imports	328	5,956	244	691	656	733
Exports	164	70	1,163	3,323	1,985	1,404
<i>Switzerland</i>						
Production	19,000	48,000	22,000	61,000	61,000	54,000
Imports	3,000	3,900	3,600	3,479	2,900	4,000
<i>Austria</i>						
Production	16,000	32,000	16,000	30,000	39,000	19,000
Imports	2,590	2,086	2,137	2,944	1,492	1,809
<i>United Kingdom</i>						
Production	23,400	26,900	14,700	29,600	18,400	26,300
Imports Fresh	844	988	1,977	2,614	2,586	1,521
„ Processed	8,438	10,511	9,443	10,624	11,092	21,655
<i>Belgium</i>						
Production	20,000	30,000	12,200	20,000	—	—
Imports	283	412	793	1,855	1,857	—
Exports	1,024	4,557	1,801	3,534	1,508	—
<i>Netherlands</i>						
Production	3,000	8,300	6,900	12,200	9,200	—
Imports	982	3,861	2,168	3,128	1,617	4,859
Exports	—	—	—	478	—	—
<i>Yugoslavia</i>						
Production Sweet	50,100	50,600	60,400	43,700	66,700	60,100
„ Sour	29,400	21,200	31,900	24,700	35,300	30,600
Exports	2,042	1,509	1,329	1,500	3,543	—
<i>Turkey</i>						
Production Sweet	32,000	32,000	46,000	40,000	47,000	—
„ Sour	16,000	17,000	18,000	19,000	23,000	—
Exports	—	—	—	—	—	—
<i>Bulgaria</i>						
Production	12,000	25,000	40,000	26,000	39,000	—
Exports	—	—	—	—	—	—

<i>Czechoslovakia</i>							
Production	Sweet	43,500	74,100	35,300	65,300	—	—
„	Sour	6,100	11,000	5,700	11,500	—	—
Exports		—	—	—	—	—	—
<i>Eastern Germany</i>							
Production	Sweet	—	35,800	37,700	60,600	37,500	—
„	Sour	—	58,700	46,300	76,300	44,300	—

Notes: Exports (i) Figures include fresh fruit only, except where stated otherwise.
(ii) Blanks may represent either "none" or "not reported".

Source: Fruit Intelligence.

APPENDIX 4

Operations on Cherry Orchards—Estimated Scales of Treatment

Full Scale Treatment

- 20 gang mowings per season
- 1 Tar oil spray
- 1 D.D.T. spray
- 1 Magnesium spray
- 5 Bordeaux Mixture (may be only 3)
- 15 cwt. Fruit Manure in 3 applications
- Careful pruning.

Medium Scale Treatment

- 12 gang mowings per season
- 1 Tar oil spray
- 1 D.D.T. spray
- 1 Bordeaux Mixture spray
- 7 cwt. of Fruit Manure in 1 or 2 applications
- Pruning out dead wood and crossing branches.

Small Scale Treatment

- 5 mowings with blade mower
- 1 Tar oil or D.D.T. spray
- 5 cwt. of straight fertilizer
- Pruning to remove dead wood.

No Treatment

—

APPENDIX 7

Cherry Varieties

Varieties to be recommended

Early Rivers
Werder's Early Black
Governor Wood
Frogmore
Nutberry Black
Circassian
Merton Glory
Roundel Heart
Kent Bigarreau (Amber)
Merton Bigarreau
Napoleon
Noir de Guben
Emperor Francis
Bigarreau Gaucher
Bradbourne Black
Florence
Ironsides (syn.: Ohio Beauty)

Varieties found satisfactory in certain Districts

Guigne d'Annonay
Early Amber
Peggy Rivers
Bigarreau Schrecken
Merton Favourite
Merton Bounty
Bedford Prolific
Merton Premier
Ursula Rivers
Windsor Black
Elton Heart
Bigarreau de Mezel
Noble
Baker's Seedling

Note: Varieties are listed in approximate order of ripening.

APPENDIX 5

Quantities of Cherries Available for consumption—United Kingdom (tons)

PART I

	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
<i>United Kingdom</i>												
Harvested Production	17,100	37,200	17,400	16,400	24,500	25,200	23,400	26,900	14,700	29,600	18,400	26,300
Imported—Fresh												
Italy	3,501	1,412	1,235	1,037	2,559	414	844	987	1,891	2,378	2,307	1,226
Other	216	202	220	21	—	17	—	1	86	236	279	295
Imported—Preserved ¹	— ²	7,072	8,012	8,476	9,695	9,868	8,438	10,511	9,443	10,624	11,092	21,655 ³
TOTAL	20,817	45,886	26,867	25,944	36,754	35,499	32,682	38,399	26,120	42,838	32,078	49,476

Estimated Quantities of Cherries used Fresh and Preserved in the United Kingdom (tons)

PART II

	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
TOTAL	20,817+	45,886	26,867	25,934	36,754	35,499	32,682	38,399	26,120	42,838	32,078	49,476
Used Fresh	20,700	35,000	17,600	16,000	25,477	22,600	22,800	25,000	15,577	30,000	20,000	26,000
Used Preserved (by subtraction)	117+	10,886	9,267	9,934	11,277	12,899	9,882	13,399	10,543	12,838	12,078	23,476

Notes: ¹ Preserved in syrup, in water, or as glacé fruit.

² Not known.

³ Includes an additional 11,000 tons (preserved in syrup) mainly from Canada but also from Italy.

Source: Fruit Intelligence.

APPENDIX 6

Varietal Yields of Cherries in the First Fifteen to Seventeen Years of Planting: 28 trees of each variety, North Kent

Variety	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
Early Rivers	—	—	—	—	—	1	2	30	19	50	34	41	91	191	94	122	66
Governor Wood	—	—	—	5	11	16	16	54	64	68	49	48	135	114	138	273	84
Merton Favourite	—	—	—	—	—	—	—	8	6	11	16	19	20	71	28	107	45
Merton Heart	—	—	—	—	—	—	1	12	9	13	6	5	49	1	40	87	19
Nutberry Black	—	—	—	5	6	22	9	43	10	51	50	72	70	197	96	136	192
Circassian	—	—	—	—	—	—	—	9	6	25	20	33	31	99	63	124	55
Merton Bounty	—	—	—	—	—	1	—	13	12	20	8	9	74	37	72	175	60
Frogmore Early	—	—	$\frac{1}{2}$	3	15	11	18	47	15	48	26	40	55	131	92	149	93
Napoleon Bigarreau	—	—	—	4	14	17	23	84	40	50	54	59	134	162	239	357	514
Webb's Black	—	—	—	6	21	24	17	82	49	67	73	47	118	188	144	234	220
Merton Bigarreau	—	—	—	—	—	—	—	14	8	7	—	1	34	69	87	128	186
Bigarreau Gaucher	—	—	—	—	—	—	—	—	5	16	20	15	32	49	65	99	280
Florence	—	—	—	—	—	1	1	12	4	11	4	2	6	4	12	12	17

Notes: 1 Units 24 lb. halves.

2 Original plant of 28 trees of each variety (Circassian 56 trees.)

3 Merton Heart and Florence proved to be unsatisfactory varieties, and in the years since about 1957, the trees of these two varieties have been grafted to, or replaced by, trees of other varieties. A negligible amount of fruit has been picked off these latter young trees.

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