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Apples - Prices

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Market Price Intelligence
for Dessert Apples

by

J. CHIVERS and J. H. KIRK

WYE COLLEGE MARKETING SERIES: No 1

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MARKETING SERIES:

REPORT No. 1

Market Price Intelligence for Dessert Apples

A study of the existing published sources of this intelligence and of its standards of accuracy and relevance, as tested against growers' sales records and considered in the light of the purposes it should serve.

by

J. CHIVERS and J. H. KIRK

Copies of this Report may be obtained, price 7s. 6d. post free, from the Secretary, Marketing Department, Wye College, near Ashford, Kent

February, 1967

FOREWORD

The main author of this Study, Mr. John Chivers, M.A., A.M.I.Mech.E., has been a Ministry of Agriculture Research Fellow in Marketing, who spent a sabbatical year away from business for the purpose of undertaking this research. The subject chosen accords with Mr. Chivers' interests and experience in fruit growing and processing. He has worked on it in the Department of Marketing which was set up at Wye College in October 1965; and this Bulletin is therefore one of its first-fruits.

The choice of market price intelligence reflects his belief, which I share, in the importance of accurate price reporting as a guide to selling decisions, not only for the commercial advantage of growers, but for the sake of improving the efficiency of the marketing system. Accidents apart, any misdirection or mistiming of the delivery of horticultural produce to market will result in some waste of economic resources, and some at least of this should be avoidable.

These remarks relate in a broad way to all horticultural produce. But each kind of produce poses its own problems, and in order to keep this Study within a reasonable compass, it has been confined to dessert apples, and in particular Cox's Orange Pippin. The dessert apple crop is the most important single horticultural product grown in the U.K., and the prices received for it are also highly significant for the substantial import trade in dessert apples as well.

The Study has been made possible by the willing co-operation of a substantial sample of growers who have made available intimate details from their sales records, under suitable safeguards. It is believed that this material is of such a standard of factual accuracy that it can be used without hesitation as a bench-mark against which to test the relevance and accuracy of the existing published price intelligence, upon which most growers now depend. These existing sources are the Ministry of Agriculture, three trade magazines, the B.B.C., and Messrs. Reuters.

It is inevitable, since we have been dealing with a situation believed to be capable of a good deal of improvement, that some of these sources have come in for a certain amount of criticism. Those criticized have been good enough to say, that while they do not necessarily accept all the criticisms, they can regard the Study as fair comment. It is particularly noteworthy that the Ministry of Agriculture have had no hesitation in allowing monies advanced for

the purposes of a Fellowship to be used for the criticism of one of the Ministry's own activities.

The Study concludes with a proposal from which it is hoped that a remedy may be developed. This relates in the first place to dessert apples, but should be capable of extension to a number of other horticultural products, though unfortunately not to all of them at this stage.

Reference should also be made to certain material printed in this Bulletin in Appendix II. It often happens that an investigation started for a particular purpose yields further information which may be of value for other purposes. Thus is the case here with certain of the basic data furnished by the participating growers, which while adding little to our study of market price intelligence as such, has an interest of its own through displaying the marketing practices and results of this particular cross-section of producers.

J.H.K.

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SECTION 1

BACKGROUND TO THE STUDY

The trade in horticultural produce in the United Kingdom is carried out through a free market system with few of the supports and safeguards associated with the marketing of the general run of agricultural products. Since the last war the greater part of the supply of dessert apples reaching our markets has been home produced (a change from the pre-war situation), and the total market has more than doubled in the period 1948-63 from about 200,000 to nearly 500,000 tons per annum.

Since the prices of dessert apples are notoriously variable and operating costs continue to increase, the U.K. grower must devote more time to the marketing of his produce in order to ensure that he stays in business. As far as is possible he must at all times ensure that he gets the best price his produce will fetch. The market information available to the grower is first and foremost his own sales information plus guidance from his commission salesmen in the markets, and secondly the published market price intelligence. For England and Wales, which accounts for virtually the whole dessert apple crop, this is available from four sources:

- (1) The Ministry of Agriculture. Agricultural Market Report—Horticultural Supplement. Issued weekly, covering nine main markets in England and Wales.
- (2) Trade magazines such as *The Grower* and *Commercial Grower*; both published weekly and quoting prices at a number of markets for the Tuesday preceding the date of publication.
- (3) The B.B.C. "Farming Today" Horticultural Bulletin.
- (4) Messrs. Reuters' Fruit Report.

These various factors, the free market, the high proportion of local supply, the narrow margins and competition from imports all combine to make the availability of reliable price intelligence to the grower or packhouse co-operative organization a matter of importance. It is also important to the smooth and efficient functioning of the marketing system itself, as was brought out in paragraphs 257-76 of the Runciman Report on Horticultural Marketing (Cmnd. 61). Paragraph 276 of that Report recommended some

extension of the market intelligence service now provided by the Agricultural Departments.

Quite apart from the commercial requirements of the trade, important decisions affecting the industry may well be taken by the Ministry, the N.F.U. and other official bodies on the basis of statistics of output values derived from statistics of volume and price. Among the more important uses, prices when multiplied by quantities give the horticultural component of the aggregate net income calculated for the agricultural industry as a whole, and this latter is one of the key statistics for the Annual Review. The value of output statistics are hardly less important for the several sectors of the horticultural industry taken in turn, so as to measure their relative importance or to consider whether these sectors may have been injured by excessive imports.

The need for the market price data to be sufficiently reliable for such statistical purposes is too obvious to need further comment. But the detailed standard of accuracy required if the figures are to be used as a guide to individual marketing must be even higher. Official statistics are usually concerned with broad averages and large aggregates, and may therefore conceal important variations within the data. Again, the major *statistical* demand is for annual data, which means that in so far as inaccuracies in quotations obtained at monthly or weekly intervals, or from individual markets, are randomly distributed, the annual aggregate statistics may nevertheless be satisfactory. By contrast, the situation facing the individual grower or trader is that he is interested in the prices obtained or obtainable for particular consignments, in comparison with the next best alternative, and the cancelling out of errors over a wide field will bring him no comfort.

These considerations prompted this Study, the purpose of which is to attempt to assess the accuracy and relevance of published market price intelligence against other information on prices received which was known to individual growers through their own sales records. As will be seen in more detail below, we have adopted the assumption (and have seen no need during the course of the study to modify it), that these sales records, which are the basis on which salesmen make out their cheques and the growers accept those as correct, must be of a very high standard of accuracy indeed, and liable to no more than minor clerical errors at most. We have adopted these records as the bench-mark against which to test the published price intelligence.

SECTION 2

OUTLINE OF METHODS USED IN THE STUDY

It was decided at the outset that it would be preferable to concentrate the work entailed in the Study, by both the authors and the growers, on one variety of dessert apple, rather than a range of varieties, so that the maximum possible weight of evidence could be collected, analysed, and directed to the verification of a comparatively small number of quoted prices. In this way the microscope is focused to maximum power. Even so the work entailed in this Study by the growers who have co-operated has been considerable, and it is doubtful if more than a handful would have agreed to co-operate if a full range of dessert apple variety prices had been requested. The verification of published figures is therefore narrow and specific (in terms of both variety and time) but all the more meaningful as a result of the small field of vision. The obvious choice of variety for the Study was Cox's Orange Pippin, and the conclusions derived relate primarily to that variety.

A circular was sent to some 140 of the larger growers in Kent, Essex, Suffolk, Cambridgeshire, Bedfordshire, Berkshire and the West Midlands, who it was thought would be supplying the main markets. At the same time the leading co-operatives marketing dessert apples were also contacted. Both were given details of the aims of the Study and asked to help by supplying details of their Cox apple sales over a period of four weeks (Nov.-Dec. 1965) in terms of date of sale, market, grade, net weight sold and gross value of sale. Gross value divided by net weight would give the gross price per unit weight at the market *before* any deductions for agent's commission, containers, transport, etc. It is demonstrated in Section 4 that this figure is directly comparable with the prices quoted in the published market intelligence. Although the four weeks in question may not represent quite the height of the season for sales of Cox, and for obvious reasons the Christmas rush would not have been a suitable time, nevertheless there is a very substantial trade in the second half of November and early December.

Growers were asked to separate sales on commission from outright sales (which have not been included), and as far as possible give details of each individual transaction rather than summary figures representing a number of small transactions.

The survey period of four weeks, Monday to Friday in each week, overlaps, and gives a comparison with three "Ministry weeks" which run Thursday to Wednesday. Comparisons with prices quoted by the commercial press have been made for four weeks. Although this period is short and cannot be considered to produce an exhaustive survey, published market intelligence, if reliable, should be correct at all times, including so important a period as the late autumn.

An assurance was given to growers that the information received would be dealt with in strict confidence and that the report would show growers, if at all, by code reference only. They were also asked to treat the existence of the Study as a confidential matter, particularly in market circles, in order that the Study itself should not affect in any way the normal routine of price reporting through the usual channels.

SECTION 3

CONSTITUTION AND RELIABILITY OF THE SAMPLE— THE RESPONSE RATE

In all, 34 individual growers and 4 co-operative organizations supplied sales information as requested. They were well distributed throughout the south of England with a preponderance in terms of numbers in Essex but on the basis of weight of fruit sold, in Kent. In general terms this appears to reflect the pattern of overall supply. Table 1 shows the number of participating growers or co-operatives by area:

TABLE 1

Area	No. of growers/co-operative organizations
Berkshire	2
Cambridge/Suffolk	7
Essex	15
Kent/Sussex	8
West Midlands	3
Wisbech	2
	—
	37
One National organization	1
	—
	38

By arrangement with the organization concerned it has been agreed that one corner of the veil of anonymity may be raised to disclose the identity of the largest co-operative dessert apple marketing organization in the United Kingdom, Messrs. Home Grown Fruits Ltd., of Canterbury, Kent, who supplied full sales information and without whose help this Study would have been of much less value.

The following questions now arise:

- (1) Were the suppliers who sent information a representative sample of those supplying the markets?
- (2) What proportion of total national Cox sales do the total Cox sales of those growers and organizations who have co-operated in this Study represent?

To answer the first question to the satisfaction of the statistician would require evidence that the sample of growers was randomly selected. Obviously some selection from known sources of information was made in order that letters were only sent to the larger growers thought to be supplying main markets. Small growers and those whose outlets were primarily very local and "at the farm gate" would not have been in a position to supply the information required. It seems virtually certain that those contacted had the necessary information in sufficient detail if they were prepared to co-operate. Following the preparation of this list of potential respondents, the selection was of course left to the discretion of the individual himself, as is inevitable with all enquiries of this sort. He decided whether or not to co-operate in accordance with his assessment of the value of the Study and the cost to him in terms of time and trouble in completing the necessary returns. This is certainly not selective on the part of those organizing the Study venture. The results give every suggestion that they came from a wide selection of growers. They have been analysed by means of a special punched card system known as "feature card analysis" whereby the features of each transaction are recorded by punching a hole in a card which represents one feature only of the sale such as the price (recorded in steps of one penny), the weight, grade, market and date of sale. In this way the diversity of the growers is immediately apparent in terms of the markets supplied, the prices obtained, the grade of fruit sold, the number of transactions per grower and the weights of each sale. The sample appears to compose the whole spectrum of growers from the very limited lower end of the scale where there are growers who recorded only 5-6 transactions, representing 2-4 tons weight, during the four weeks of the Study, through the middle of the range reporting 50-100 transactions representing 50-60 tons, up to the top end of the independent growers' scale where, selling in large quantities, one grower reported 30 transactions representing the sale of 140 tons in the period. Messrs. Home Grown Fruits stand apart at the extreme top end of the range, selling some 2,000 tons in the four weeks.

It must of course be admitted that a sample based on a response rate (in terms of number of growers or co-operatives) of slightly more than 25 per cent. must be open to bias in the sense that the respondents may differ in some material respect from the non-respondents. This is a species of bias to which all sample surveys are liable, and in point of fact a response rate of 25 per cent. is quite a good one by the standards of sample surveys generally, particularly when it is remembered that among our respondents are two major co-operatives which handle the business of many growers. In so far

as the bias, whatever it may be, has lead to the Survey prices being unrepresentative of national prices for the same fruit, we would expect the Survey prices to be on the high side. Experience teaches that the respondents in a sample survey of a commercial character tend to be more commercially-minded than the non-respondents; and one assumes that the more commercially-minded growers are likely on the whole to be producing better apples and marketing them more effectively. This seems to us more likely than the opposite inference which could perhaps have been drawn from this response rate, viz. that the growers who received the higher prices were in some way motivated to abstain from responding. The exact significance of our interpretation will become clearer when we come to compare Survey prices with the Ministry prices, which might on the strength of this argument be expected to be the lower of the two. To sum up, therefore, the answer to the first of the questions posed earlier is that while no absolute or certain proof can be given that the sample of growers is representative, the general character of the response and the range of the returns received seem to justify a considerable degree of confidence in the validity of the comparisons to be made.

The validity of the results obtained can be further tested by reference to the second question: what proportion of the national Cox sales do the total Cox sales of those growers and organizations who have co-operated in this study represent? The Ministry quote a figure of 125,000 tons of Cox as the production for 1965. Allowing for wastage and losses the actual output sold may be considered to be around 120,000 tons or less. Messrs. Home Grown Fruits' *total* Cox sales, through both markets and other outlets for 1965-66 is quoted at 17,000 tons. As the tonnage of Cox reported on in this Survey by H.G.F. and all others is roughly equal (all others slightly exceed the H.G.F. tonnage, the actual ratio being 1.125 : 1.0), it may be inferred that the Survey is based on an equivalent annual sale through all outlets of around 36,000 tons of Cox. This is 30 per cent. of the total national market, which is a high proportion for any survey and one which gives confidence in the findings. If anything, this is probably an understatement of the position; Messrs. H.G.F. themselves are confident that they have more than 14 per cent. of the total market (a point that possibly throws some doubt on the official statistics on the total sales of Cox).

Finally, it is necessary to consider the grade and quality of the fruit. Participants in the Survey were asked to give a rough assessment of the grades they were marketing, but this was more for the purpose of assisting in the classification of the returns than in any expectation that price could be closely related to grade by this

means (see Appendix II, Section (ii)). Until national standard grades are in operation such refinements are impossible. The following Section discusses the effects of any differences in the grade composition of Cox in the Survey and the grade composition of all Cox in the market.

SECTION 4

DESCRIPTION OF THE SURVEY PRICE QUOTATIONS

As it is intended to use these price quotations as a bench mark against which to test quotations obtained from other sources, clearly it is necessary to make explicit what stage of marketing they represent, and what grades of fruit are covered. The comparisons must not be open to any reservations on the ground that the fruit prices reported in this Survey or by the Ministry, or the Trade Press, are relating to different things.

The Survey prices in every case are prices obtained on sales made by growers through commission agents (who may also be described as salesmen and, less accurately, as wholesalers) to buyers attending markets. (A small number of quotations based on outright purchases by wholesalers have been excluded partly because this is an unusual method of selling home-grown apples, and partly to avoid the confusion which might arise if two kinds of sale were included in the same study.) From these prices the commission agent deducts the charges he is entitled to make, such as the cost of transport and containers if these are supplied by himself. We are not, however, concerned with prices net of these charges. The prices in the Survey are in fact the prices which, if the agent were a true wholesaler buying outright, he would receive from his own customers, such as secondary wholesalers, retailers, processors or caterers. In other words, the Survey prices are prices established after completion of the first, and usually the only, wholesale stage.

It is now necessary to see whether this description of the Survey price substantially fits the trade in home grown dessert apples as reported by the Ministry and the Trade Press. We may take first the comparatively minor point of outright purchase by wholesalers. The Ministry and the Trade Press cannot be covering many transactions of this type for the reason that they are relatively uncommon for apples at the primary markets which predominate in their published quotations. Even where these outright sales occur, it would be our expectation that the wholesaler would not report the price that he paid for the fruit but the price he charged for it, i.e. the wholesale price obtained for apples sold in competition with those sold on commission to the same class of buyer. On that assumption the occurrence in the Ministry and the Trade Press

quotations of a small proportion of outright sales would only disturb the comparisons to a negligible extent.

It must be conceded that the apples reported on in this Survey and those reported by the Ministry and the Trade Press will not necessarily have travelled the same distance to market nor have reached it in the same types of vehicles or containers; moreover vehicles and containers are in some cases supplied by the merchants and in other cases by the growers. In all these respects the details of the marketing pattern may be a little dissimilar as between the Survey transactions and the rest. This, however, is of no consequence whatever. Both the Survey prices and the prices with which they are being compared are prices inclusive of carriage to the market and wholesaling services at the market, and while the differences in the former will, of course, be relevant to the growers' net prices, they can be of no relevance to the prices which competing buyers will be prepared to offer. A buyer is concerned with the quality and condition of the fruit offered him and not with the distance it may have travelled or the means by which it did so.

There is, however, one point relating to containers at which some slight incompatibility of the price quotations may arise. Apples which have been transported in stout containers may well arrive at the market in a better condition for that reason and thus command a higher price. The same may also apply to apples which have been packed by one or other of the more sophisticated methods practised by some growers. Again, extending this train of thought a little, exactly the same considerations apply to apples which before packing were of superior grade. It is proposed to deal with this point in more detail later on when numerical comparisons are made between the Survey prices and the prices from other sources, when it will be seen that the point is of little consequence when the comparisons are conducted in terms of limits of price ranges, though they will obviously be of some consequence in comparisons of average prices obtained.

Lastly there remains the question of secondary wholesalers. The importance of this is that a certain proportion of the apples entered at primary markets are bought there by secondary wholesalers for transportation to secondary markets for subsequent re-sale. So far as the Survey is concerned the price quoted is that obtained at the market of first destination and the figures do not include any prices realized on subsequent sale. The extent to which this is true of the Ministry and the Trade Press quotations cannot be certain. Most of the markets covered by the Ministry and the Trade Press are known to be primary markets, and it would be a reasonable inference from this that comparatively few subsequent sales fall into

their price reporting systems. Nevertheless, we cannot exclude the possibility that both the Ministry and the Trade Press quotations may on average tend to be slightly higher than the Survey quotations simply because of the inclusion in the former of a small proportion of subsequent sales which have been eliminated from the latter.

SECTION 5

PRICES OBTAINED COMPARED WITH MINISTRY FIGURES

SECTION 5(A)—TRUE WEIGHTED AVERAGES

The Ministry Agricultural Market Report, Horticultural Supplement, Part IIA, summarizes information from Part IIB, where both "range" and "most usual" prices are quoted for each of nine markets in England and Wales, to give one overall figure for "range" and one figure for the "most usual" price.

The true average price, in its strictest sense, consists of the mean of all transactions occurring in all or a representative selection of markets, and the price for each transaction should be weighted by the volume of goods to which it relates. In some circumstances an unweighted mean might be acceptable, or a median, which is derived by arranging all the quotations in an ascending or descending order and selecting the mid-point as an average of the whole.

But it would appear that it would not be practicable for the Ministry to ascertain either the mean or the median for the reason that neither can be established without taking into account every quotation in the market (since all must in one way or another enter into the computations). Such an approach might be practicable if all the transactions took place in a single hall but this is not the case at any of the main city markets. Even at those which have recently been reconstructed selling takes place simultaneously in a variety of premises occupied by different merchants. The Ministry's investigator cannot be present in all of them, and the amount of work involved in obtaining retrospectively a complete tally of all the sales in all the premises would be prohibitive. The procedure is therefore for the investigator (normally the Horticultural Marketing Inspector for the area) to visit selected salesmen in turn on the day in question to enquire the most usual prices realized during the preceding few hours. At the same time enquiries are made as to the range within which transactions have been completed.

In this section it is this "most usual" price (or "mode" as it may also be described) which will be compared with the prices, market by market and week by week and also overall, thrown up by our Survey. These Survey figures are used unweighted for the purpose of comparison against the Ministry's "range", but weighted (as a

weighted mean) for comparison against the England and Wales averages derived from the Ministry's "most usual" prices.

Taking all three weeks together and taking the true weighted Survey mean of all H.G.F. and independents' Cox¹ sold through *all markets* in England and Wales, the overall price was 9.04d./lb. (H.G.F., 9.55d./lb., independents, 8.60d./lb.).² This figure is the mean of several thousand individual transactions representing a total weight of 3,400 tons sold over three weeks.

The Ministry "most usual" figures for each of the three weeks were:

24.11.65	10.46d.
1.12.65	10.75d.
8.12.65	10.86d.

The average of these was 10.69d./lb. On this basis the Ministry figure appears to be about 1 $\frac{2}{3}$ d. *per lb. too high*, for the three weeks as a whole and for England and Wales as a whole. Messrs. H.G.F. figures alone have been further analysed into three separate weeks of the Survey. (The corresponding figures of the independent growers have not been similarly analysed on account of the formidable extra task this would involve, which it was felt would not materially add to the value of the Study.) The results are shown in Table 2 below:

TABLE 2
True Weighted Average of H.G.F. Figures in each Week
v. Ministry "Most Usual" for the Week
(all figures converted to pence/lb.)

Date W/E	H.G.F. average at Ministry markets			H.G.F. av. for whole of England and Wales	Ministry most usual for the week
	8 excluding Cov. Garden	Covent Garden	Total		
24.11.65	9.54	9.42	9.49	9.30	10.46
1.12.65	9.67	9.95	9.80	9.50	10.75
8.12.65	9.85	9.95	9.89	9.80	10.86

¹ The description "independents" is used throughout this report to distinguish between the results of Messrs. H.G.F. Ltd. and all other suppliers. Although the description "independents" is correct for by far the greatest number of growers, included amongst them there are three co-operative sales organizations.

² (i) No conclusions should be drawn regarding the relative profitability of sales, through Messrs. Home Grown Fruits or through other channels. As has already been made clear, the prices are gross prices, and are subject to a variety of deductions for commissions, tolls, transport, etc. It has not been the purpose of this Study to compare the deductions falling on H.G.F. members with those falling on independents, though it is of course obvious that most of them must be common to both.

(ii) The figures do not take into account any direct sales by H.G.F. and some independents. This Study is concerned only with sales through main wholesale markets, and it therefore takes no account of the proceeds from direct sales made by H.G.F. or others. For this further reason the figures given in the text are not to be taken as indications of growers net returns.

Here again, while the difference is not quite so marked, as the H.G.F. average is higher than the independents, there remains a gap of just over 1d./lb. on each of the three weeks, taking the H.G.F. figures for the whole of England and Wales against the Ministry figures.

Nevertheless, in order to assess the true position it is necessary to weight both H.G.F. and independents' results in the proportion of their respective volume of sales. As has been shown in an earlier section of this report H.G.F. sales may represent 14 per cent. of the total market, and if this is so, then the independents' figure should be given a weighting equivalent to an 86 per cent. share of the market in order to arrive at a true picture. On this basis the true average price re-calculates to:

$$\frac{86}{100} \times 8.60 = 7.39$$

$$\frac{14}{100} \times 9.55 = 1.34$$

$$8.73\text{d./lb.}$$

With the Ministry quoting 10.69d./lb. the differential may be as much as *nearly 2d./lb.* Expressed as a percentage this gives the alarming figure of a $\frac{1.97}{8.73} \times 100 = 22.6$ per cent. difference.

On the other hand if Messrs. H.G.F. have more than 14 per cent. of market sales for Cox, the error would be slightly less than this.

In theory such a discrepancy could be produced, not by mis-reporting at any individual markets, but by an unfortunate choice of markets and the weight given to each. (The Ministry in fact give Covent Garden a weight of four, and all the others a weight of one each.) But it is not likely that the weighting could be so far wrong as to account for more than a small part of the discrepancy. Indeed, reference to Table 3 suggests from an inspection of the results from the individual markets, that the Ministry reported too high a figure for the "most usual" price from most of them; and that this accordingly must be the main explanation.

Mention was made earlier that out of all the comparisons attempted in this Study, the only one capable of being significantly affected by differences of grade composition between the apples in the Survey and all the apples on the market, would be a comparison of two "averages" in pence per lb. But the likely difference in grade composition can do nothing to explain the price difference

that has in fact been found, since the participating growers and co-operatives are almost certainly marketing fruit which is superior in grade and quality to the overall average of all Cox apples on the market, and on this score the Survey figures should be higher than the Ministry's, not lower. Similarly the participating growers and co-operatives are almost certainly marketing fruit which is better packed and presented than the average, and the same conclusion follows.

SECTION 5(B)

"AGRICULTURAL STATISTICS"

It was stated in Section 5(A) that the average of the Ministry "most usual" figures for the three weeks of the Survey was 10·69 pence per lb. This is not, however, the only form in which the Survey figures can be compared with Ministry figures since for the purpose of deriving what might be called an "output price" certain adjustments are made to the latter, and it is these figures (known as the "average wholesale price"), which are quoted in "Agricultural Statistics". These average wholesale prices are calculated from certain combinations of the market data by the method shown in Table 2A. Further, an attempt is made by the Ministry to account for the effect of volume in two ways:

- (a) London (Covent Garden) has been given a weight of four compared with one each for the other eight markets;
- (b) whenever possible, the average weekly wholesale prices have been weighted by throughput derived from information on production and marketings supplied by the Horticultural Crop Intelligence Committees.

It so happens that for the three weeks under review the Ministry did not find it necessary to make any special adjustment to take account of varying quantities (other than by weighting the Covent Garden figures by four), so that the average is the straight average of the figures for each week. In order to make the calculation quite clear it is set out in full in Table 2A on page 16.

While the average for the three weeks on this basis is very slightly lower at 10·43d. per lb. than the straight average of the Ministry "most usual" for the same period, 10·69d. per lb., there still remains a discrepancy between this and the overall Survey average price at 9·04d. per lb. of *nearly* 1½d. per lb. Again, as against the weighted H.G.F. and independents' figures at 8·73d. per lb., the discrepancy is *nearly* 1¾d. per lb.

To summarize the position, it seems clear that while the figures

TABLE 2A

*Ministry method of calculation of Average Wholesale
Weekly Prices in England and Wales for "Agricultural Statistics"
Cox Orange Pippin—
Average Wholesale Weekly Prices in England and Wales*

Range of prices	Wt.	Week 1	Week 2	Week 3
		(W/E 24/11/65) s. d. per cwt.	(W/E 1/12/65) s. d. per cwt.	(W/E 8/12/65) s. d. per cwt.
Nottingham ..	1	56/- to 140/-	28/- to 140/-	37/4 to 130/8
Newcastle ..	1	37/4 ,, 130/8	37/4 ,, 130/8	56/- ,, 121/4
Manchester ..	1	37/4 ,, 140/-	37/4 ,, 140/-	46/8 ,, 140/-
Covent Garden ..	4	56/- ,, 140/-	46/8 ,, 149/4	46/8 ,, 149/4
Liverpool ..	1	56/- ,, 130/8	46/8 ,, 140/-	46/8 ,, 140/-
Leeds ..	1	46/8 ,, 130/8	37/4 ,, 130/8	46/8 ,, 140/-
Cardiff ..	1	56/- ,, 140/-	56/- ,, 140/-	56/- ,, 140/-
Bristol ..	1	56/- ,, 140/-	56/- ,, 149/4	56/- ,, 140/-
Birmingham ..	1	37/4 ,, 130/8	46/8 ,, 130/8	56/- ,, 140/-
Median of range ..	12	56/- ,, 140/-	46/8 ,, 140/-	46/8 ,, 140/-
Mean of medians of range ..	..	98/- (10·50d. per lb.)	93/4 (10·00d. per lb.)	93/4 (10·00d. per lb.)
Most Usual ..	..	97/7 (10·46d. per lb.)	100/4 (10·75d. per lb.)	101/4 (10·86d. per lb.)
<i>Av. Wholesale price</i> (Av. of mean of medians of range and the most usual)	..	97/10 (10·48d. per lb.)	96/10 (10·38d. per lb.)	97/4 (10·43d. per lb.)
<i>Average of all 3 weeks</i>	..	10·43d. per lb.		

quoted by the Ministry for both the "most usual" price for the week, and the average wholesale price in "Agricultural Statistics", may faithfully reflect the trend, they appear to be nearly 1½d. to 2d. per lb. too high compared with the Survey, and a 1½d. differential would seem a conservative estimate.

SECTION 5(c)

PRICES AT PARTICULAR MARKETS QUOTED BY THE MINISTRY

Part IIB of the Horticultural Supplement gives both "range" and "most usual" prices at eight English and one Welsh market individually.

Results showing the number of transactions at each price (to the nearest whole penny) from both H.G.F. and independent returns are shown graphically in Table III. The total number of independent growers' transactions at any given price is indicated by means of a solid black area, while the total number of H.G.F. transactions at any given price is indicated by a shaded area. The outline therefore

shows the total of both independent growers and H.G.F. transactions at each price. The Ministry quotations for "range" are indicated by means of arrowheads, and "most usual" prices by solid square blocks.

Taking first of all the figures quoted for "range" it should be noted that the Ministry reporters are permitted to ignore figures not considered representative, such as clearing up prices at the end of the day. This, to some extent blurs the meaning of the quotation. However, some firm conclusions can be drawn. To take the week ending 8.12.65 as an example it seems quite clear that the reporters at Nottingham, Newcastle, Manchester, Covent Garden, Liverpool, Leeds and Cardiff (7 out of 9) have missed the top end of the range. These are surely not clearing-up prices that have been omitted.

Looking at both ends of the range it does appear from each of the Covent Garden weeks that the Ministry figures are too narrow to give a true picture of the spread of prices. Too many transactions at both ends of the scale appear to have been ignored. On the other side of the coin it should be noted that there are some apparently perfect results, see Leeds week ending 1.12.65 and Birmingham week ending 24.11.65. Naturally if the Ministry range is *wider* than the Survey results they may well have found prices not included in the Survey net, as would be quite possible. This, however, is the exception not the rule (it explains only 9 cases out of 54 possibles). This in itself seems to point to the Survey being based on more reliable information than Ministry figures. On the other hand the Survey shows a wider range than Ministry figures in 34 cases out of 54 (63 per cent.). In 11 cases Survey and Ministry agree. It can be said therefore that on the range figures the Ministry are misleading to the extent that in some 60 per cent. of cases they are too narrow.

Are the figures quoted for "most usual" prices any more reliable? While in some cases they appear perfect by Survey standards (take for instance Birmingham week ending 24.11.65), there are others, e.g. Birmingham during the other two weeks and Nottingham during all weeks, where Survey and Ministry certainly do not agree. Indeed according to the Survey results, the Ministry's figure for Nottingham appears in every case to have been the most unusual price. In fairness, however, it must be conceded that there may be freak effects at particular markets and that there may have been some gross abnormality in the ratio of "survey" transactions to total transactions. Nevertheless, out of a total of 27 market-weeks which can be brought under review, half this number might well be classified as misleading. On this basis the verdict must unfortunately be, "unreliable".

SECTION 6

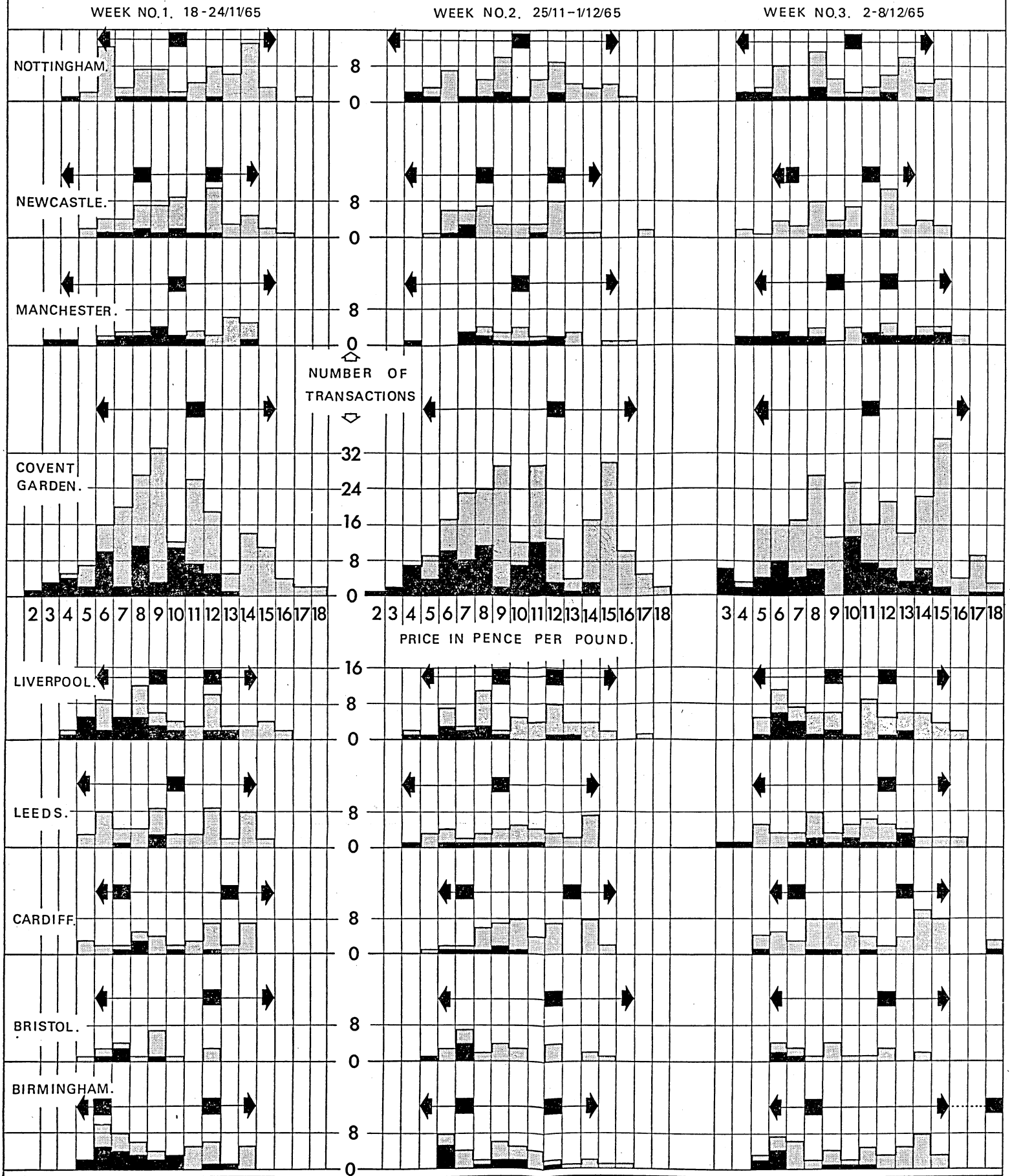
PRICES OBTAINED COMPARED WITH FIGURES QUOTED IN THE TRADE PRESS

The two trade journals of most interest to growers are the *Commercial Grower* and *The Grower*. Both are published weekly and quote prices at fifteen markets in the case of the *Commercial Grower* and five markets in the case of *The Grower*, for the Tuesday preceding the date of publication. In addition *The Grower* also re-publishes the weekly Ministry figures covering nine main markets which are reviewed in the preceding Section. Both publications quote maximum and minimum prices for the general run of produce each Tuesday. In *The Grower* these are the prices obtained during the first few hours of Tuesday morning. This magazine also ignores any exceptionally high or low figures—particularly the clearing up prices at the end of the day. The *Commercial Grower* say that owing to the variation from hour to hour, it is not possible to use their figures other than as a guide to market trends.

Before the prices published by these papers are reviewed in detail, it is necessary to say something about their methods and apparent intentions. The methods used to collect price information by both magazines are similar, in that they rely on reports from informed men in the markets. Generally these are salesmen, although the *Commercial Grower* also receives reports from the market superintendents' offices, and usually reports are received either over the telephone or on a special report form. While reports for Covent Garden prices are also obtained from salesmen the position is slightly different in that members of the magazine staff usually meet these salesmen face to face in the market to receive their reports.

With regard to intentions, a trade magazine has a choice of many features it can offer its readers and most of these will be competing for space and money with the others. If the magazine gives its readers a service which is appreciated by them, and does not fall into error through negligence (which in these cases is unlikely) it cannot be criticized for lack of perfect accuracy. It must also be expected of any magazine which has to have a popular appeal that there will be some lack of rigour in its definitions and uses of terms. Both *The Commercial Grower* and *The Grower* expressly

TABLE III PRICE DISTRIBUTIONS AT MARKETS QUOTED BY THE MINISTRY.



avoid some of the risks of inaccurate or imprecise reporting by making it explicit that they are concerned only with identifying the extremes of the normal run of prices, omitting exceptional quotations.

It is certainly true that in order to give a general picture of the normal run of trading in the markets it may well be sensible to ignore the extreme top and bottom of the range. This does however tend to blur the meaning of the "from-to" idea of price reporting to the point that no definition really worthy of the name remains, and the choice of the figures actually used is bound to be rather subjective.

If one takes a somewhat sterner view and requires that the words "from-to" should have a definite meaning, then the comparisons do show several shots which are rather wide of the mark compared with Survey figures. Clearly if the published figures quote a range that is *wider* than the Survey range then obviously the reporters have got figures into their net outside those from our own correspondents. But on the other hand, if the published figures show a *narrower* range than the Survey results then the published figures must presumably be at fault since the Survey transactions were known to have taken place.¹

Nevertheless, while bearing these various conditional factors in mind, it seems reasonable to make a comparison of Survey and "trade journal" figures, for price ranges at particular markets, and these are shown in detail in Appendix I.² Summary Table 4 shows the number of quotations which seem on the evidence to agree with the Survey, disregarding differences of less than 1d., and the number which seem *not* to agree, i.e. are *within* the Survey range, even after allowing for that tolerance. (The detailed figures in Appendix I, making no allowance for the tolerance, show a rather darker picture.)

A result (in the first of the two cases) of nearly 40 per cent. "not in agreement" must indicate that many more transactions than just a few odd exceptions, high and low, were either ignored or, perhaps, overlooked. Either the extremes of the price range should always be ignored, or else they should always be taken into account. A mixed policy can only confuse.

The figures in *The Grower* while appearing, at first sight, rather

¹ This statement is open to an element of doubt in respect of a few growers who could not always be sure of the date of sale. However, much the greater weight of evidence in terms of numbers of transactions was supplied by H.G.F. and here the date of sale is sure.

² Where the published range is wider or outside the Survey range the difference is shown with a + sign; where the difference is within or narrower this is shown with a — sign.

TABLE 4
*Comparison of Commercial Grower and The Grower
 Ranges with Survey Ranges*

Commercial Grower
Numbers of quotations

	16.11.65	23.11.65	30.11.65	7.12.65	Totals	Totals as a %
Agreement	17	17	16	16	66	60·5
No agreement (Diffs. of 1d. or more) ..	11	11	10	11	43	39·5
Total	28	28	26	27	109	100

The Grower
Numbers of quotations

	16.11.65	23.11.65	30.11.65	7.12.65	Totals	Totals as a %
Agreement	5	4	3	3	15	39·6
No agreement (Diffs. of 1d. or more) ..	5	6	5	7	23	60·4
Total	10	10	8	10	38	100

more often wide of the mark than those in the *Commercial Grower* only relate to prices for the general run of produce during the first few hours of Tuesday morning. In this case, therefore, we are not considering like with like in making the comparison, and a fair proportion of discrepancies was only to be expected. This qualification, however, only raises a further point. While the figures reported by this magazine may well represent a fair picture of the trade in the early hours, Table 4 suggests that this is a different picture from that of the trading throughout the day as a whole. Since a fair volume of trade is conducted outside the early hours there must be some danger in confining reporting to the early hours only, which may lead to the presentation of results which are not representative of the trading on that day. Alternatively, of course, the differences where they occur may well be due, once again, to the fact that the extremes of the price range are sometimes being ignored. Whatever the reason for the differences may be, the figures quoted in *The Grower* appear inconsistent when compared with the Survey figures for range.

A third journal, probably of more interest to importers, buyers and agents in the commercial world of fruit, than to growers, is the *Fruit Trades' Journal*. This magazine publishes London and pro-

vincial price intelligence. No testing of the London prices quoted can be made since these refer to early Tuesday morning, while the information collected in the Survey is not so specific as to time and not therefore strictly comparable. However, the provincial market information refers to Tuesday's trading and comparable figures are available. These are set out in Appendix I, in exactly the same way as *The Grower* and *Commercial Grower* information has been tabulated. Summary Table 5 below sets out the overall picture:

TABLE 5
Comparison of Fruit Trades' Journal Ranges with Survey Ranges
(Numbers of quotations)

	16.11.65	23.11.65	30.11.65	7.12.65	Totals	Totals as a %
Agreement	10	16	13	12	51	66.2
No agreement (Diffs. of 1d. or more) ..	10	4	7	5	26	33.8
Total	20	20	20	17	77	100.0

While these results look better than those for both *The Grower* and the *Commercial Grower*, i.e. only 33 per cent. "not in agreement", the picture is not entirely satisfactory and seems to indicate that, once again, it is more than the odd exception which is being ignored. What seems to be needed here, once more, is a more consistent approach. Sometimes the full limits of trading prices seem to be accounted for, and at other times ignored. If it is felt that only the bulk should be included, which may well be a reasonable policy, then this should be made clear and adhered to firmly according to precise criteria.

SECTION 7

B.B.C. HORTICULTURAL PRICE BULLETIN— “FARMING TODAY”

The B.B.C. make a contribution in this field with their market intelligence service presented on the early-morning “Farming Today” programme. Unfortunately an evaluation on the lines presented for the Ministry and trade magazine intelligence services is not possible. The B.B.C. service quotes prices for three markets, Covent Garden, Manchester and Leeds for 6.15 a.m. on that day. The method used in this Survey to ascertain prices does not make it possible to define the time at which prices were made so precisely as to give a proper comparison. While the prices reported by the B.B.C. are as up to the minute as possible and may well be a reliable indicator of the early morning trade, which at Covent Garden is considered by some to be a “trend-setter” for provincial markets, they may, even so, not be truly representative of the prices received over the full day’s trading. The scope of the quotations, presumably governed by the exigencies of programming, limits the value of the service to growers and the trade as a whole.

It should be noted that the “Farming Today” programme also includes weekly quotations from the four producer auctions, Spalding, Wisbech Chase, Cheltenham and Pershore. Producer auction prices are, however, outside the scope of this Survey.

SECTION 8

REUTERS' FRUIT REPORT

This report, which may also be known by its previous name, "Comtel Reuter", is published daily and is primarily concerned with world fruit crop estimates, shipments, rail movements and foreign market prices and news. As would be expected the reports are of a highly professional nature and give in some twelve pages a considerable and detailed picture of world trade affairs for fruits and vegetables. Subscribers to the service are mainly importers and wholesalers. Reuters do however include daily fruit and vegetable prices ruling at Covent Garden, this being the only U.K. wholesale market covered. The prices quoted are defined as the maximum and minimum for sales of good average quality fruit and exclude poor quality produce. The figures are intended to show general market prices, not the extremes. They are arrived at by a Reuters' representative following the questioning of a number of wholesalers.

A comparison with Survey figures can be made by taking the Reuters figure for Cox for each day in the "Ministry week" and thus arriving at an overall "Reuters' range" for the week. The results of this comparison are shown in Table 6 below:

TABLE 6

Comparison of Reuters' Range with Survey Range (Covent Garden)

			18-24/11/65	25/11-1/12/65	2-8/12/65
Reuters' range	..	..	6d.-1/2d.	6d.-1/3d.	6d.-1/3d.
Survey range	..	..	2d.-1/6d.	2d.-1/6d.	3d.-1/6d.

The criteria of ignoring the extremes and reporting only the normal run of trading appear here to be strictly adhered to giving reliable figures in so far as "general market prices" or "normal run of trading prices" is a definable standard. Certainly the results are consistent.

Nevertheless, the range quoted is, for each of the three weeks over which comparisons have been made, narrower than the Ministry range, and as has been pointed out earlier, this latter range is too narrow to give a true picture of the spread of prices

at Covent Garden. While Reuters include the good produce, they ignore both the best, and anything past its prime.

Generally the figures quoted are found to be reliable in so far as reliability against a rather indefinable standard can be assessed at all.

The foregoing remarks relating to the comparison of Reuters' range with the Survey range for Cox also apply to the figures quoted by the *Financial Times* in their commodity section, since these figures are supplied by Reuters' Economics Services.

SECTION 9

SUMMARY

The sheer volume and complexity of trading in any horticultural commodity makes the provision of adequate and reliable market intelligence a near superhuman task. For the reasons that have been given in detail, the difficulties are of such a magnitude as to tempt one to expect nothing much more than a general guide to trends rather than even an approximation to an absolute figure. Bearing in mind the difficulties, the various agencies engaged in attempting to produce a market guide are to be congratulated on their efforts. Nevertheless, while both the Ministry and trade publications obviously take pains to try to ensure that the market information they publish is reliable, the factual evidence presented on the subject of Cox apple prices in this Survey suggests that the results are not satisfactory.

The Ministry figures for "range" appear, on the whole, to be too narrow, and the "most usual" prices are probably between 1½d.-2d. per lb. too high. In general the figures do not seem to be reliable and may be misleading. This finding has of course implications for "official statistics" as well as for market price intelligence.

The "from-to" quotations in the trade press appear to be inconsistent, sometimes including the full price range and at other times ignoring the extremes. They can only be used to give a general picture of market trends, and even then the apparent inconsistencies may mislead.

Coverage on the B.B.C. price bulletins is considered too limited to be of real use. Messrs. Reuters' quotations appear to be consistent, but information is given only for one market, Covent Garden.

In the circumstances it is not surprising that discussion with growers indicates that very little use is made of present published market price intelligence. In the first place many of them doubt the validity of the information. Secondly, there are difficulties in interpretation; the units used vary from source to source, and surely all figures could be quoted per lb. Grades and packaging are ignored, or at all events not specified. The definition of "most usual" and "from-to" is probably only vague in the minds of many growers and others, and, in the case of the "from-to" quotations it is in fact vague. Finally, although price trends can be followed over

a period of time if the reader is prepared to copy and list the quotations from any one source, the importance of these trends suggests that they might well be made explicit each week in the form, e.g. of percentage changes as compared with an earlier date.

Generally, a reliable market indicator would be of value to growers because they have so much at stake in the best choice of market—either which town to go for, or which wholesaler, or which month or week in which to concentrate the bulk of their sales. Given more reliable information in sufficient detail the grower would be in a position to compare, either during or at the end of the season, the prices his own produce has made with the prices reported from other sources in the same or some different market. In this way he could compare alternative markets and his own position in those markets through which he is selling. This would guide the development of his marketing plans in respect of choice of market and choice of commission agent. The grower could also observe price movements over the season as a whole, even outside the period where he himself had fruit available for sale, thus obtaining surer guidance for the future as to optimum selling dates during or shortly after the harvest, choice of early or late varieties, and the net returns to be gained from storage.

It is not considered that a reliable market indicator would be of value to growers simply because it facilitated market chasing. However reliable the information on which this chasing was based it would still be bad commercial practice. The important uses of market price intelligence are first to make a choice, no more than once or twice a year, of markets or salesmen. Secondly, it may be used to indicate during the season the proportions in which the available produce should be allocated between the chosen markets and salesmen.

SECTION 10

A PROPOSAL FOR AN ALTERNATIVE SYSTEM

It is suggested that growers should take the responsibility for providing themselves with market price intelligence if, as may be the case with dessert apples, they could make effective use of information that is more precise in form and more accurate in content than anyone else can be expected to provide for them. For the reasons already given neither the Ministry nor the other sources can really be called upon to incur considerable extra expense and overcome considerable practical difficulties, for the sake of providing growers, at little or no charge, with information that they would quite properly turn to their own commercial advantage. Growers must face the position that if they need more precise information for their commercial purposes they must expect to pay for it themselves.

Fortunately information of the desired standard of accuracy is available. It is in fact the class of information used in this Study and consists of extracts and summaries from growers' sales records. This could be collated and then circulated among all growers, with anonymity preserved either by the use of code numbers or by averaging. In the main what matters to the individual grower is the comparison between his prices and the average of everyone else's. A system of this sort pre-supposes the existence of a national organization (of suitable status if it is to make its statistical findings authoritative for official purposes as well) to collect and process the data, and preferably there should be a separate organization for each commodity or commodity group. Possibilities for the creation of such organizations are beginning to exist, starting with apples and pears.

The mechanics of such a system could be based on the use of a simple punch card system. Once a month, or perhaps more frequently if this were desired, each grower would be called on to punch a few holes in one or two cards. Information supplied in this form can be analysed with great ease, speed and low cost. The amount of information to be given could of course be made to vary. While, for instance, it might not be considered necessary to specify all markets, it could be useful to have say five or six designated in different regions, one in London and one other in the

Midlands, the North-West, the North-East, and South-East and Scotland. In this way regional differences in trade would be apparent.

Since immediate and short-term marketing decisions must usually be taken on private information, and "market chasing" is bad sales policy anyway, it is doubtful if any commercial interests would be served by publishing such market intelligence at more than a four-weekly frequency. Such a frequency should give an adequate picture of trends during the season in the apple marketing trade. While size or count would have to be reported, the question whether or not it would be useful to report grade would have to be considered, and the answer would no doubt depend on whether or not the proposed official grading scheme fulfills all hopes. At the moment it seems possible that the larger growers and co-operatives may ignore one aspect of this scheme and rely on their own trade names and private grades. But even so, the existence of statutory grade designations should be indirectly helpful in giving precision to the market intelligence.

Differentiation between the more popular varieties would clearly be essential, but those varieties selling in limited volume and new varieties would clearly have to come under an "all others" umbrella to avoid the production of unnecessarily cumbersome statistics.

The size of the problem, if an attempt is to be made to produce reliable and absolute figures, is such that it would appear that only the application of modern data handling techniques allied to really reliable basic price information can produce the desired results. An attempt on one commodity, if successful, would no doubt lead to other similar applications to some of the other more important commodities in the horticultural field.

ACKNOWLEDGEMENTS

The writers wish to acknowledge assistance and guidance received from several quarters:

In the first place this Survey has depended on the willing co-operation of nearly forty growers or co-operative organizations. While publication of a full list of names would not serve any real purpose (and would not allow the preservation of anonymity) this does not in any way imply a lack of gratitude for the considerable trouble taken by these growers in supplying information. A particular debt is due to Messrs. Home Grown Fruits Ltd., and Messrs. East Kent Packers Ltd., both of Kent, who on account of their size and power in the market, might well have felt disinclined to disclose their results, but who in fact disclosed complete records for the period of the survey. The validity of the results obtained depends in great part on the generous co-operation of these two organizations.

We must also gratefully acknowledge the co-operation of the Ministry of Agriculture, Fisheries and Food, and of the editorial staff of the *Fruit Trades' Journal*, *Grower*, *Commercial Grower*, Reuters' Fruit Report and "Farming Today" for the special trouble they took in making perfectly clear the basis of their present price reporting. In particular the Ministry kindly undertook some special tabulations for this purpose.

Our colleagues on the staff in the Marketing and Economics departments at Wye College have assisted in numerous ways. Valuable guidance in the formative stages of the Survey was obtained from Mr. C. R. Thompson of Risby, Suffolk. Thanks are due also to Mr. F. J. Smith of Wisbech, Cambs., Mr. F. Martin of Tiptree, Essex, and to Mr. J. L. Jolley of Messrs. J. L. Jolley & Partners, High Wycombe, for his specialist advice on data handling techniques.

APPENDIX 1

This Appendix gives detailed information about price ranges at particular markets as reported by the Survey and by the Trade Press. Each Table shows the differences that have been found. Where the difference is preceded by a minus sign, this means that the price range disclosed by the Trade Press is narrower than that disclosed by the Survey, which should not be the case, since the Survey's range should in principle fall within the range reported by the Press reporters, not extend beyond it. But where the sign is plus, the Survey range is the narrower, as should normally be the case.

Cox Apple Price Range Comparison (16th November 1965)
 The Grower, Commercial Grower and Fruit Trades Journal
 All quoted prices converted to pence per lb.

Market	H.G.F. and Independents overall range		Commercial Grower		Difference: Com. Grower v. H.G.F. and Independents		The Grower		Difference: The Grower v. H.G.F. and Independents		Fruit Trades Journal		Difference: F.T.J. v. H.G.F. and Independents	
	From	To	From	To	From	To	From	To	From	To	From	To	From	To
Covent Garden	3	1/4½	8	1/2	-5	-2½								
Spitalfields	3	1/3½	6	1/3	-3	-½	3	1/-						
Brentford	5½	1/5	6	1/-	-½	-5	6	1/0½	-½	-3½				
Borough														
Liverpool	5¾	1/3	6	1/2	-½	-1					6	1/2	-½	-1
Manchester	7¼	1/4½	4	1/3	+3½	-1½					9	1/4	-1¾	-½
Birmingham	6	1/1	6	1/2		+1					10	1/1	-4	
Leeds	5½	1/2½	4	1/2	+1½	-½					6	1/-	-½	-2½
Sheffield	7	11									4	1/-	+3	+1
Hull	6	1/2	10	1/2	-4						6	1/1		-1
Southampton	6	1/2¼	6	1/-		-2¼	9	1/2½	-3	+¼	8	1/2	-2	-¼
Cardiff	6	1/2	6	1/2							6	1/2		
Leicester	5¾	1/1¾	6	1/-	-½	-1¾	9	1/1¾	-3¼					
Bristol	4	1/2	10	1/3	-6	+1					8	1/-	-4	-2
Bradford	6¼	1/2	4	1/-	+2¼	-2								
Derby			10	1/-										
Newcastle	5¾	1/0½	6	1/1	-½	+½								
Glasgow	6½	1/3					5½	11½	+1	-3½	8	1/-	-1½	-3

Cox Apple Price Range Comparison (23rd November 1965)
 The Grower, Commercial Grower and Fruit Trades Journal
 All quoted prices converted to pence per lb.

Market	H.G.F. and Independents overall range		Commercial Grower		Difference: Com. Grower v. H.G.F. and Independents		The Grower		Difference: The Grower v. H.G.F. and Independents		Fruit Trades Journal		Difference: F.T.J. v. H.G.F. and Independents	
	From	To	From	To	From	To	From	To	From	To	From	To	From	To
Covent Garden	3	1/4	6	1/1	-3	-3								
Spitalfields	2	1/2½	6	1/3	-4	+½	3½	1/-	-1½	-2½				
Brentford	6¾	1/2½	6	1/1	+¾	-1½	6	1/1¼	+¾	-1¼				
Borough	3¾	1/2¼	6	1/1	-2¼	-1¼								
Liverpool	6	1/2	11	1/2	-5						5	1/2	+1	
Manchester	9	1/1½	4	1/2	+5	+½					9	1/4		+2½
Birmingham	6	1/2	6	1/2							10	1/2	-4	
Leeds	5¾	1/2	4	1/2	+1¾									
Sheffield	4	1/2¼									4	1/2		-¼
Hull	6	10½	9	1/1	-3	+2½					4	1/1	+2	+2½
Southampton	5	1/2¼	6	1/-	-1	-2¼	10	1/3	-5	+¾	8	1/2	-3	-¼
Cardiff	5¼	1/2	6	1/2	-¾						6	1/2	-¼	
Leicester	5¾	1/0½	6	1/2	-¼	+1½	9	1/1¾	-3¼	+1½				
Bristol	6	1/-	6	10		-2					10	1/2	-4	+2
Bradford	5¾	11¾	4	1/-	+1¾	+¼								
Derby			8	1/1										
Newcastle	5½	1/2¼									6	1/2	-¼	-¼
Glasgow	7¼	1/1					6	10½	+1¼	-2½	8	11	-¾	-2

Cox Apple Price Range Comparison (30th November 1965)
 The Grower, Commercial Grower and Fruit Trades Journal
 All quoted prices converted to pence per lb.

Market	H.G.F. and Independents overall range		Commercial Grower		Difference: Com. Grower v. H.G.F. and Independents		The Grower		Difference: The Grower v. H.G.F. and Independents		Fruit Trades Journal		Difference: F.T.J. v. H.G.F. and Independents	
	From	To	From	To	From	To	From	To	From	To	From	To	From	To
Covent Garden	2	1/3 $\frac{1}{4}$	8	1/3	-6	- $\frac{1}{4}$								
Spitalfields	3	1/3 $\frac{3}{4}$	4	1/2	-1	-1 $\frac{3}{4}$	3 $\frac{1}{2}$	1/-	- $\frac{1}{2}$	-3 $\frac{3}{4}$				
Brentford	3	1/4 $\frac{1}{2}$	6	1/1	-3	-3 $\frac{1}{2}$	6	1/1 $\frac{1}{4}$	-3	-3 $\frac{1}{4}$				
Borough	5 $\frac{1}{2}$	1/3 $\frac{1}{4}$	6	1/2	- $\frac{1}{2}$	-1 $\frac{1}{4}$					6	1/3	+1 $\frac{1}{2}$	- $\frac{1}{2}$
Liverpool	7 $\frac{1}{2}$	1/3 $\frac{1}{2}$	6	1/3	+1 $\frac{1}{2}$	- $\frac{1}{2}$					8	1/3	-4	+5
Manchester	4	10									10	1/2	-4 $\frac{1}{4}$	- $\frac{1}{4}$
Birmingham	5 $\frac{3}{4}$	1/2 $\frac{1}{4}$	6	1/1 $\frac{1}{2}$	- $\frac{1}{4}$	- $\frac{3}{4}$								
Leeds	5 $\frac{1}{4}$	1/2	4	1/2	+1 $\frac{1}{4}$						6	1/2	-1 $\frac{1}{4}$	+ $\frac{1}{2}$
Sheffield	4 $\frac{3}{4}$	1/1 $\frac{1}{2}$									6	1/2	+ $\frac{1}{2}$	+1
Hull	6 $\frac{1}{2}$	1/1	10	1/1	-3 $\frac{1}{2}$						10	1/2	-4	
Southampton	6	1/2	6	1/-		-2					6	1/2	+1 $\frac{1}{4}$	- $\frac{1}{4}$
Cardiff	7 $\frac{1}{4}$	1/2 $\frac{1}{4}$	6	1/2	+1 $\frac{1}{4}$	- $\frac{1}{4}$								
Leicester	6 $\frac{3}{4}$	1/5 $\frac{3}{4}$	6	1/2	+ $\frac{3}{4}$	-3 $\frac{3}{4}$	4 $\frac{1}{2}$	1/3	+2 $\frac{1}{4}$	-2 $\frac{3}{4}$	10	1/2	-3	
Bristol	7	1/2	10	1/3	-3	+1								
Bradford	7 $\frac{1}{4}$	9 $\frac{3}{4}$	7	1/2	+ $\frac{1}{4}$	+4 $\frac{1}{4}$								
Derby			1/-	1/1							8	1/3	-2 $\frac{1}{4}$	+3 $\frac{1}{2}$
Newcastle	5 $\frac{3}{4}$	11 $\frac{1}{2}$					6	1/-	+3	-2	10	1/3	-1	+1
Glasgow	9	1/2												

Cox Apple Price Range Comparison (7th December 1965)
 The Grower, Commercial Grower and Fruit Trades Journal

All quoted prices converted to pence per lb.

Market	H.G.F. and Independents overall range		Commercial Grower		Difference: Com. Grower v. H.G.F. and Independents		The Grower		Difference: The Grower v. H.G.F. and Independents		Fruit Trades Journal		Difference: F.T.J. v. H.G.F. and Independents	
	From	To	From	To	From	To	From	To	From	To	From	To	From	To
Covent Garden	3	1/4 $\frac{1}{2}$	8	1/4	-5	- $\frac{1}{2}$								
Spitalfields	3	1/4 $\frac{1}{2}$	6	1/3	-3	-1 $\frac{1}{2}$	4 $\frac{3}{4}$	1/0 $\frac{1}{2}$	-1 $\frac{3}{4}$	-4				
Brentford	3	1/4 $\frac{1}{2}$	6	1/2	-3	-2 $\frac{1}{2}$	6	1/1 $\frac{1}{4}$	-3	-2 $\frac{3}{4}$				
Borough	5 $\frac{1}{2}$	1/2 $\frac{1}{2}$	6	1/3	- $\frac{1}{2}$	+ $\frac{1}{2}$								
Liverpool	5 $\frac{1}{4}$	1/3	10	1/4	-4 $\frac{3}{4}$	+1								
Manchester	5	1/4	4	1/4	+1						5	1/3	+ $\frac{1}{4}$	
Birmingham	5 $\frac{3}{4}$	1/2 $\frac{1}{2}$	6	1/1	- $\frac{1}{4}$	-1 $\frac{1}{2}$								
Leeds	5 $\frac{1}{2}$	1/3 $\frac{1}{4}$	4	1/2	+1 $\frac{1}{2}$	-1 $\frac{1}{4}$					10	1/2	-4 $\frac{1}{4}$	- $\frac{1}{2}$
Sheffield	5	1/2												
Hull	6		10	1/2	-4						10	1/2	-5	
Southampton	5 $\frac{1}{2}$	1/3	6	1/2	- $\frac{1}{2}$	-1	9	1/2 $\frac{1}{2}$	-3 $\frac{1}{2}$	- $\frac{1}{2}$	6	1/2		
Cardiff	5 $\frac{1}{2}$	1/2 $\frac{1}{2}$	6	1/3	- $\frac{1}{2}$	+ $\frac{1}{2}$					7 $\frac{1}{4}$	1/3	-1 $\frac{3}{4}$	
Leicester	5 $\frac{1}{2}$	1/2 $\frac{1}{2}$	6	1/3	- $\frac{1}{2}$	+ $\frac{1}{2}$	9	1/3	-3 $\frac{1}{2}$	+ $\frac{1}{2}$	6	1/3	- $\frac{1}{2}$	+ $\frac{1}{2}$
Bristol	9	1/-	7	1/3	+2	+3								
Bradford	9	1/2 $\frac{1}{2}$	4	1/-	+5	-2 $\frac{1}{2}$					8	1/2	+1	+2
Derby			8	1/-										
Newcastle	4 $\frac{1}{2}$	1/2 $\frac{1}{2}$												
Glasgow	7 $\frac{1}{2}$	1/3					6	1/-	+1 $\frac{1}{2}$	-3	6	1/4	-1 $\frac{1}{2}$	+1 $\frac{1}{2}$
											8	10	- $\frac{1}{2}$	-5

APPENDIX 2

A SHORT-TERM ANALYSIS OVER FOUR WEEKS OF THE MARKETING OF COX APPLES FROM LARGER GROWERS AND SOME CO-OPERATIVE ORGANIZATIONS (OTHER THAN MESSRS. H.G.F.) THROUGH MAIN MARKETS

This Appendix presents an analysis of the six factors, area of supply, grower, market used, gross price obtained and grade of fruit sold, based on the sales returns for Cox apples over four weeks, Nov.-Dec. 1965, from 37 growers and co-operative organizations (excluding H.G.F.) in Berks., Cambs., Suffolk, Essex, Kent, Sussex and the West Midlands. As previously mentioned in the main section of this Survey, it is believed that this is a reasonable cross-section of the larger Cox producers supplying main markets.

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(i) Overall Average Gross Prices Received by Growers

Table A presents in descending order of true average price a list of growers, coded 1-37, and against the code is shown the weight of Cox sold in lbs. during the Survey period and the gross overall average price the grower received for this fruit. Comparisons of one grower with another should be made with caution, since some sell their best quality produce through other outlets, such as large retail chain stores, and some are selling too small a volume over the four weeks to establish a true position. However, if most of a growers' sales were through main markets, and if a fair tonnage was sold during the period, the relative position in the Table should be meaningful.

Growers who participated in the Survey may find value in the results shown in this Table when combined with their own detailed knowledge of sales policy over the Survey period.

The very wide range of the *average* price received, from 12·45-6·0d. per lb. may be noted.

(ii) *Grade Distributions*

Table A which lists all the growers in terms of average prices received and grading percentages shows a * against some growers and a † against others. The * entries relate to growers whose prices

TABLE A
*Overall Average Gross Prices and Percent
Grade "A" and "B" for Each Grower*

Growers Code No.	Lbs. weight sold	Pence per lb.	% Grade "A" sales	% Grade "B" sales
1	15,486	12.45		
2	108,470	12.00	83.4	0.9
3*	73,673	11.72	35.7	34.4
4	117,210	10.60	54.4	21.7
5	251,155	10.50	79.5	3.8
6	131,460	10.04	75.6	6.1
7*	238,230	10.00	37.8	37.8
8*	63,918	10.00	33.3	33.3
9*	26,760	9.68	29.4	35.3
10	114,170	9.66	52.8	35.3
11*	272,590	9.58	36.4	37.6
12	4,440	9.45	100.0	0
13	121,725	9.43	53.0	27.8
14	326,160	9.3	70.0	30.0
15	160,300	9.26	62.5	20.0
16†	9,185	9.14	80.0	0
17	23,905	9.06	62.5	37.5
18	140,593	9.05	65.0	33.8
19	48,960	8.82	100.0	0
20*	30,840	8.70	22.6	24.6
21	29,130	8.70		
22	62,220	8.64	36.8	31.6
23*	34,110	8.50	21.4	57.0
24	65,385	8.34	100.0	0
25	83,380	8.06	50.0	50.0
26	379,590	7.95	0	100.0
27	897,340	7.95	0	100.0
28†	221,860	7.95	73.0	16.1
29	114,630	7.82	31.4	31.4
30	96,180	7.70	31.0	20.6
31	234,797	7.64	27.4	52.8
32	43,430	7.62	0	83.5
33†	9,960	7.22	69.0	31.0
34	403,970	7.18	24.0	40.8
35	329,330	6.82	40.0	33.4
36†	3,841	6.08	67.0	0
37	145,110	6.00	34.0	34.0
Overall average grade %..	..	..	46.6	32.2

Note: Although H.G.F. members are not included in this Table the fact that their overall average exceeds the average of the independents by 1d. per lb. makes it likely that the average prices received by some of their members would lie at or above the top of the range shown. Growers 1 and 21 gave insufficient information.

are higher than would have been expected from their grade "A" percentages, while those marked with a † indicate the reverse. Seven * growers may congratulate themselves on obtaining a good price in relation to comparatively low grade fruit, presumably either because of product size or marketing efficiency. Growers with a † shown against their code numbers would do well to consider both their growing and marketing practices.

It should be remembered, however, that an assessment on these lines depends entirely on fair reporting of grade by growers. No inference has been drawn in respect of growers showing either 100 per cent. grade "A" or "B" sales.

(iii) *Market/Grower Analysis*

Two kinds of analyses can be made of the relationship between choice of market and price received.

The first of these lists growers individually and in groups according to the prices they have received and then indicates the markets to which they have dispatched their fruit. This has been done in Chart B. The reader who wishes to pursue this further is referred to Table III of the main section of the Report where market/price distribution charts for main markets are shown.

The second method is to list markets in descending order of popularity, and from Chart B it can be seen that the markets most favoured by independent growers were, in descending order—Covent Garden, Spitalfields, Brentford, Liverpool, as might have been expected. It is not reasonable to present any of the remaining markets in descending order of popularity owing to the limited evidence available.

Unspecified markets, shown in the column headed "Others", are used predominantly by the top group of twelve growers. An analysis of these sales shows that good quality fruit, at high prices and in some volume, is sold through these outlets. It would appear that not all the best trade goes through main markets. (See also Chart C which shows a high percentage of Grade "A" through "Other" markets.)

(iv) *Market/Grade Comparison*

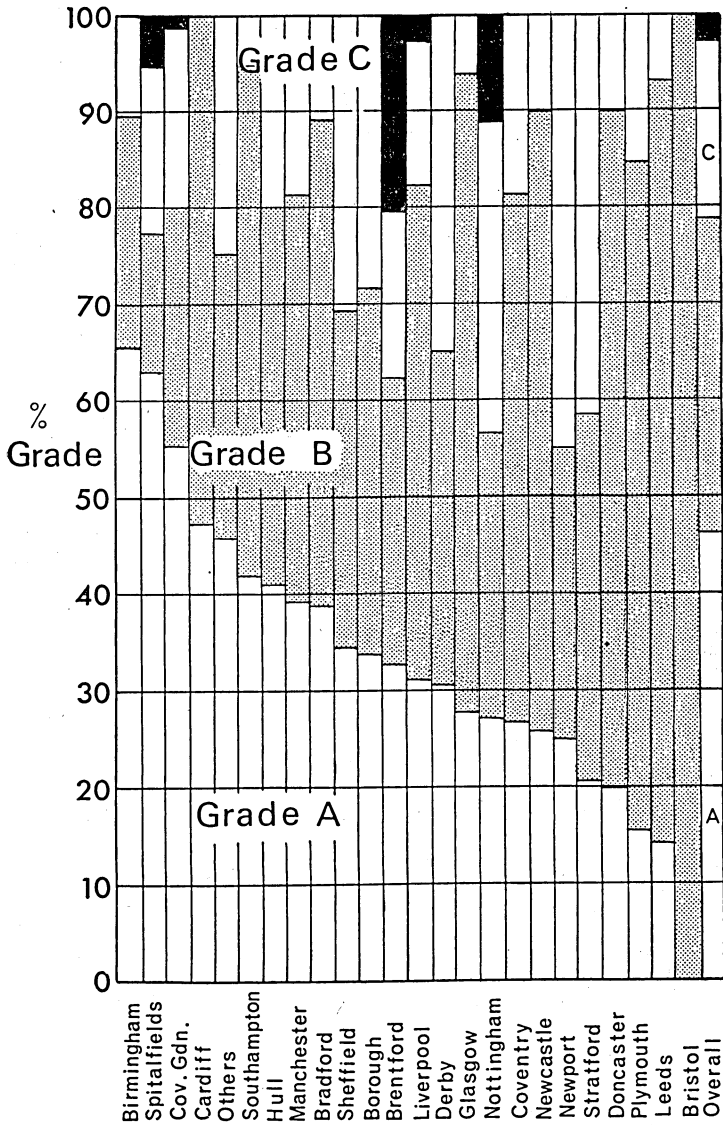
Chart C shows the per cent. A, B and C grade fruit handled at a range of markets to check if there is any tendency for certain markets to deal in any particular grade rather than others.

The Chart has been arranged to show markets in descending order of per cent. grade "A", omitting those showing under ten transactions in all. This material is not sufficient in quantity or precision to justify any very definite conclusions. Nevertheless the

Chart B. Market/Grower analysis.

Growers code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37		
Brentford	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Borough	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Cov. Gdn.	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Spitalfields	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Stratford	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Birmingham																																							
Bradford																																							
Brighton																																							
Bristol																																							
Cardiff																																							
Carlisle																																							
Coventry																																							
Derby																																							
Doncaster																																							
Glasgow																																							
Hull																																							
Leeds																																							
Leicester																																							
Liverpool																																							
Manchester																																							
Newcastle																																							
Newport																																							
Nottingham																																							
Plymouth																																							
Sheffield																																							
Southampton																																							
Wigan																																							
W-hampton																																							
Others																																							

Chart C. Market/Grade analysis.



general picture presented is that while some markets appear to have a strong affinity for high quality fruit and others for low quality fruit, these two kinds of market cannot be arranged in a consistent geographical pattern.

(v) *Distribution Analysis*

An examination has been made, see Table D, of the extent to which growers allocate their supplies to markets in particular localities. This analysis shows a random pattern with a spread of short, medium and long hauls. Evidently the growers have found that the cost of haulage is by no means the most important of the factors determining their net return from markets. For example, it

TABLE D
Distribution Analysis
No. of Transactions Producing Area → Market

	West					
	Berks.	Wisbech	Midlands	Kent	Essex	Cambs.
Brentford		7		25	52	2
Borough					48	
Covent Garden	7	5		39	160	54
Spitalfields				107	40	120
Stratford					24	
Birmingham		2	147	1	5	26
Bradford			4	5	9	
Brighton				2		
Bristol				15	3	
Cardiff	7		3	6	3	
Carlisle		1				
Coventry			7	5	10	
Derby		23				
Doncaster			7		3	
Glasgow		3		3	1	11
Hull	4			4	41	
Leeds				18	10	
Leicester			3		1	
Liverpool		4	10	25	21	33
Manchester	24	6		18	16	
Newcastle	4	3		16	8	
Newport			20			
Nottingham	2	2		2	38	
Plymouth					13	
Sheffield		7			19	
Southampton	7			10	2	
Wigan			9			
Wolverhampton			9			
Others	6	32	8	50	58	
Totals	61	95	227	351	585	246

may be noted that both the Essex/Plymouth and the Kent/Newcastle movements seem long hauls, bearing in mind the other growing areas lying within closer reach of these towns. On the other hand West Midland growers do seem to concentrate on Birmingham. Probably the main explanation of the predominantly random features displayed in the Table are that the two main supplying areas, Kent and Essex, are both located in one corner of England, and most of the markets in the country must to some extent depend on these two growing areas for their supplies.



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