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Recent Developments in Market Gardening

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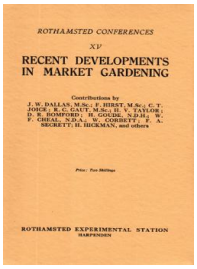

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CANNING OF FRUIT AND VEGETABLES: WHAT THE CANNER WANTS

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The Growers' Standpoint

The rapid development of the canning industry during the last six years has brought about a material improvement in the outlook of the fruit grower. The situation in all branches of horticulture at the beginning of this period was very discouraging, and the creation of a new market for the produce of the orchards and market gardens has done much to brighten the prospects of those engaged in the growing of fruit and vegetables.

Fruit prices in this country have always been liable to violent fluctuations on account of the uncertainty of the climate with its consequent effect upon the crops. Any extremes thus caused are disadvantageous to the grower, for the high prices ruling in a season of short crops are not sufficient to offset the low yield obtained, while the low prices offered during a glut period may not even be sufficient to pay the cost of picking the fruit.

In the years previous to the advance of the canning industry to a position of economic importance to the grower, the only outlets for the fruit crop were to the fresh fruit market and to the jam manufacturer. The amount taken by the latter was considerable, but the position changed during the next few years when large quantities of cheap fruit pulp, preserved in sulphur dioxide, were imported into this country for the manufacture of jam. The partial loss of a valuable outlet, and the rise in imports of fresh fruit, caused prices to fall, and in many cases the growing of fruit became unprofitable.

By the year 1929 the demand for fruit by the canner began to make itself felt, and the rapid expansion of the industry since that date has exercised a very noticeable effect on the prices of certain fruits.

The recent imposition of a tariff on imported fruit and pulp has caused the jam manufacturer to look to the home market to supply him with a proportion of his requirements, and this has helped to maintain or raise prices, but more particularly it has served as a means of disposal of fruit which is not quite up to the standard required for the fresh market or for the canner.

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The effect of the entry of the canner as an important buyer was first to give a greater stability to prices, and to protect the grower against a severe slump in glut seasons. But during the past year the increasing demands made by the industry, taken in conjunction with the change in the political situation, has caused fruit to become a rising market, even in times when other products of the land are in a state of severe depression.

The Canner's Standpoint

The first task in developing a canning industry in this country was to build up a demand for fruits other than those normally imported from abroad. Peaches, pears and apricots do not yield sufficiently well in England to produce crops which can be marketed at a price which would be economic to the canner, and for this reason attention had to be confined to soft fruits, plums and cherries. The quality of the strawberries, raspberries, loganberries, currants and blackberries grown in the British Isles is unsurpassed by any other country, and with the provision of such excellent substitutes for the imported peaches and pears, the canning industry has been able to make rapid strides in a very short space of time.

Unfortunately, these berries and currants are fruits of high initial cost, and the canned products are apt to be more expensive than the imported articles. The only fruits which can meet the foreign competition on a basis of price are gooseberries and plums, and of these the latter are very popular— in particular such varieties as the Victoria and Pershore.

The chief difficulty confronting the canner in this country is precisely the same as that which faces the grower—namely, fluctuation in prices of the fruit. This makes it difficult to foretell the extent of the season's pack, and causes unsteadiness in the wholesale prices of the canned products.

It has been stated that the advent of the canner on the fruit market has contributed towards a general hardening of prices to the material advantage of the grower. Unfortunately, this also acts as a check on the development of the industry, the remedy for which must be sought in the establishment of a proper understanding between the industry and the fruit grower.

Co-operation in the Industry

In 1925 the only canneries operating in the country were three or four of the earliest pioneers, but from that date rapid progress has been made, and by the year 1932 the number of factories has risen to eighty-four. This spectacular advance, which developed in the first place in the three main fruit-growing areas of Cambridge and Wisbech, the Vale of Evesham, and Kent, later spread to the areas of lesser importance, and at the present time there is no large fruit growing centre without at least one cannery.

It is gratifying to note that success attended this sudden development, in spite of the fact that very few trained men were available for managing the factories. This difficulty was overcome

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by the provision of technical advice and assistance on all the theoretical and practical problems of canning by the Campden Research Station, which had been engaged for several years in building up an organization for this purpose. The subsequent action of the can-makers in supplying closing machines and full service with their cans, enabled the firms engaged in the industry to eliminate the chief source of trouble which is normally associated with the closing of the cans.

By co-operation between the canner, can-maker, machinery manufacturer and the Research Station, the industry has been able to develop along sound scientific lines from the outset, and this, more than any other factor, has been responsible for its success.

The next stage of co-operation which becomes more urgent the greater the extension of the industry, is between the canner and the grower. The very large quantities of soft fruits required for canning has necessitated the planting out of new acreages of fruit of the varieties suitable for canning, and to guard both parties from the fluctuations in price which are so harmful to trade, a large proportion of the new fruit must be grown under contract at prices fixed at a definite figure for several years.

Quantity of Fruit Required

The output of canned fruit in 1932 is estimated at approximately fifty million cans ; this is very satisfactory in view of the fact that the plum crop was scanty and the damson crop a failure. As stated previously, plums and gooseberries are the chief fruits with which the English packers can meet the competition of imported peaches, pears and apricots, and a large quantity of plums are packed if the crop is good and the prices reasonable. During the last season the high prices ruling caused the output of this fruit to drop below the amount previously anticipated, and in a normal season a higher proportion of plums and damsons would be packed.

In view of the extent of the 1932 output, and the increasing demand of the public for British canned fruits, it may reasonably be expected that the 1933 fruit pack will amount to about seventy million cans, provided the fruit is available. It is extremely difficult to anticipate the manner in which this quantity will be split up amongst the various fruits, as the abundance of the crops, the market prices of the fruits and the relative popularity of the various canned products, all tend to alter the balance of these figures. As a rough estimate the fruits might be packed in the following proportions :

Gooseberries	6 per cent.
Strawberries	18 ,,
Raspberries	13 ,,
Loganberries	6 ,,
Blackcurrants	5 ,,
Cherries	2 ,,
Plums and Greengages ..	36 ,,
Damsons	10 ,,
Cultivated Blackberries ..	3 ,,
Apples and other fruits ..	1 ,,

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Taking these figures as a basis we are enabled to estimate roughly the tonnage of fruit required by the canner, and it may be worth while to deal with each fruit separately.

Gooseberries

This fruit cans remarkably well, but is not yet appreciated as well as it ought to be by the public. The quantity required by the canning industry next year will probably be in the region of 1,400 tons. For canning, green under-ripe gooseberries of medium size are preferred, but the berries must not be too immature or they will have little flavour. The varieties most popular are Keepsake and Careless.

Strawberries

There is a great demand for canned strawberries, and the quantity of fruit required would be about 4,000 tons for a twelve million can pack. To be suitable for canning the berries should be of medium size with good colour and flavour ; they should be firm in texture and free from ridges, wrinkles and black markings at the base of the berries. The varieties in greatest demand are Sir Joseph Paxton and Royal Sovereign.

Raspberries

The outlook for the raspberry grower has not been very encouraging during recent years. The greater part of the crop was originally planted to supply the jam manufacturer, and the demand from this source fell off rapidly when cheap, foreign fruit pulp came on the market. The canning industry only requires fruit in first-class condition, but the demand is now sufficiently large to encourage the planting of new acreages. It is estimated that about 2,500 tons will be required next season. Raspberries are easily bruised, and careful picking is essential. The berries should be gathered whilst they are firm and the fruit should be transported to the cannery in shallow baskets.

Loganberries

There is a great shortage of this popular fruit for canning, and we are still importing considerable quantities of canned loganberries. The demand for loganberry canes now exceeds the supply, and the quantity of fruit packed by the canner will depend on the amount available. A three million can pack would require about 800 to 900 tons of loganberries.

This fruit is much firmer than the raspberry, and will travel very much better. Both these fruits are liable to contain maggots of the raspberry weevil, and such fruit is useless for canning. The grubs leave the berries when the latter are heated during the process of sterilization and float in the syrup. Any grower, therefore, who contracts to grow raspberries or loganberries for canning, should take steps to control the weevil or the fruit may be rejected when

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delivered. Sprays containing Derris Extract, as recommended by the East Malling Research Station, have proved very efficient in controlling this pest.

Blackcurrants

Very few fruits preserve their flavour when canned so well as blackcurrants, but this fruit is not universally popular. A pack of three and a half million cans would require about 1,000 tons of fruit. Firm, ripe, juicy fruit of good size is required by the canner. The majority of the varieties commonly grown are satisfactory for canning.

Cherries

The quantity of this fruit canned is still small in view of the extent of the foreign imports—particularly from Italy—and only a few varieties are suitable. The Napoleon Bigarreau and the Kentish Bigarreau are both satisfactory for colouring red to take the place of the imported cherries. The sub-acid and acid cherries, such as the May Duke and the Morello, have an excellent flavour when canned, but neither is grown to a sufficiently large extent to supply the needs of the canner.

Plums and Damsons

The price of these fruits fluctuates greatly, but very large quantities are used for canning. In a favourable season about 10,000 tons of plums and 3,000 tons of damsons might be required. The best varieties are Victoria, Yellow Pershore, Purple Pershore and the Prune damson.

Cultivated Blackberries

Certain varieties of this fruit give excellent results when canned, and these are likely to become popular in the near future. The extent of the pack will largely be governed by the quantity of fruit available. The best varieties at present grown on a commercial scale are Black Diamond—a Californian variety established in the Vale of Evesham —and Himalayan Giant.

Apples

These are mainly packed sliced or quartered in gallon cans. The quantity canned will depend on the price of the fruit and the extent of foreign competition, but the recent tariff should encourage production. Half a million cans would represent roughly 2,500 tons of apples.

The requirements of the individual fruits given above may vary considerably, but the total quantity of fruit required to pack seventy million cans is certain to be at least 25,000 tons, which represents the yield of 15,000 to 20,000 acres of fruit. Whether this quantity will be available at prices which the canner can afford to pay, remains to be seen.

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Vegetables

The vegetable canning industry has also made highly satisfactory progress during the last four years. The prohibition of the use of copper sulphate in green vegetables, which came into force in 1927, threatened to destroy the small pea canning industry which was in existence at that time, but the discovery of an alternative and perfectly harmless method of obtaining the desired results put new life into the industry, and the developments since that date have been rapid.

The output of canned fresh peas in 1932 has been estimated at twelve million cans, which represents the product of about 4,000 acres of land under this vegetable. The peas are grown almost entirely under contract, and the price paid is sufficiently attractive to cause keen competition amongst growers to secure the contracts each year.

At present the Lincoln is easily the most popular pea for canning. In the past the variety Alaska has been canned to a certain extent, principally because the seed will withstand the adverse conditions often experienced in this country during the early months of the year. This variety, however, if not picked just at the right stage gets starchy very quickly, and for this reason it is not as popular as it used to be. A satisfactory early pea for canning is urgently required, but so far no variety has been discovered to take the place of Alaska.

In addition to the fresh picked pea there is a very great demand for the canned, resoaked, dried pea, which is one of the chief starchy foods of a large proportion of the British public. The best pea for canning in the dried state is the English Small Blue, grown mainly in Lincolnshire, and the pack during this year will probably be about thirty-five million cans.

Other vegetables, such as dwarf beans, carrots, beetroot, spinach, turnips, celery, cauliflower, etc., are being canned to an increasing extent, and the annual pack of these vegetables at the present time is in the region of eight million to ten million cans.

Dwarf and runner beans as usually grown in England are not very satisfactory for canning, as they are stringy and too dark in colour, but there is an excellent American variety—Keeney's Stringless Green Refugee—which grows quite well in this country.

Beetroot for canning should be small, and the plants should be grown much closer together than is the case with beet for the fresh market. Roots about 1½ to 2 inches in diameter are most in demand, and Detroit Dark Red and Globe are the best varieties.

When grown for canning, carrots should not be thinned out to any great extent, as small to medium-sized young roots are principally required. Good varieties are Champion Horn, Select Stump Rooted Early Horn, Early Nantes and Nantes Stump Rooted.

Turnips should also be young and small—not more than 1½ to 2 inches in diameter. White and Red Milan are both good.

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There is a fair demand for canned celery hearts, but with the ordinary type of celery there is too much waste. Experiments have been carried out this year in an endeavour to find a good dwarf type suitable for the purpose, but the canning tests on the many varieties which have been grown are not yet completed.

Canned asparagus is very popular, and there appears to be scope for the growing of this vegetable for canners. But new methods will have to be introduced, as the large amount of hand labour at present involved in the growing of asparagus makes the product too expensive for canning, except as a luxury pack.

Future of the Industry

The demand for English canned fruits and vegetables has been very encouraging, and the prospects of considerable further developments particularly in the export field are bright. In order that this expansion should be affected with the greatest benefit to all concerned, it will be necessary for the canner and grower to understand and appreciate each other's difficulties, and towards this end to co-operate in the development of new acreages of fruit and vegetables grown specially for canning.

As every important horticultural centre is now provided with at least one cannery, it would be to the advantage of the industry as a whole if the future expansion took place by extension of the existing factories rather than by the creation of a multiplicity of smaller units. If the latter procedure were adopted the industry would be hampered by excessive internal competition, with subsequent price-cutting and lowering of standards of quality ; moreover, the existing factories are already equipped to pack more than double this year's pack if the fruit was available. The present position of the canning industry is healthy, but at the same time it is increasingly obvious that the future prospects are similar to those encountered in other industries where high quality and high efficiency are the only true guarantees of survival.

Even in these days of severe economic depression the canning industry has helped to transform the outlook of the fruit grower from a condition bordering on despair to one of considerable hope for the future. In the space of six years the industry has risen from a factor of negligible importance to one of great practical value to the grower. The canner already asks for 25,000 tons of fruit, which is the equivalent of almost 20 per cent. of the annual crop of the various fruits in question. In addition to the 15,000 to 20,000 acres occupied in growing fruits, the canner requires the product of about 7,000 acres of vegetables and about 5,000 tons of harvested Lincolnshire peas. This demand has given the grower a rising market for fruits, a steady, profitable price for vegetables, and a reasonable safeguard against the worst effects of his most formidable economic danger—a glut crop.

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