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## SOME ECONOMIC ASPECTS OF FRUIT MARKETING\*

### With Special Reference to Seasonal Price Patterns

1. INTRODUCTION
2. APPLES
3. PEARS
4. ORANGES
5. LEMONS
6. BANANAS
7. CONCLUSION

### 1. INTRODUCTION

This is the second of two articles<sup>1</sup> prepared for the guidance of individuals and organisations interested in the marketing of fruit and vegetables.

In both articles attention has been focussed primarily on seasonal price patterns. The present article contains seasonal price graphs for certain varieties of pome and citrus fruits and also bananas. The graphs are based on wholesale prices recorded by the Division of Marketing and Agricultural Economics for New South Wales fruit at the City of Sydney Fruit and Vegetable Markets.

Much of the general comment included in the first article on marketing, the role of the Department and the statistical bases of the graphs, is also relevant to the present article. However, it is worth noting that in addition to the Plant Diseases Act and grading regulations, the Department of Agriculture administers the Fruit Cases Act, 1912-36, in order to regulate the size and description of cases used in the sale or export of fruit.

A discussion of the prices of fruit on the Sydney market must take account of the major sources of Sydney's fruit supply. This virtually means describing the marketing of fruit in Sydney against a background of Commonwealth planting and production trends.

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\* Prepared and compiled by officers of the Prices Section, Division of Marketing and Agricultural Economics, in co-operation with officers of the Division of Horticulture.

<sup>1</sup> The first article "Some Economic Aspects of Vegetable Marketing" appeared in this *Review*, Vol. 26, No. 1 (March, 1958).

† 29139—2

The following is a brief outline of the fruit supply to the Sydney market: Apples are received from New South Wales, Tasmania, Victoria, Queensland and South Australia almost throughout the year, according to variety and district ; however, the heaviest supplies are received in the period from March to September. Pears are received from New South Wales, Victoria and Tasmania almost throughout the year, but mainly from March to September. Citrus fruits are supplied from New South Wales, Victoria, South Australia and Queensland during the whole year, the heaviest supplies occurring during the peaks of the Navel season (June to October) and the Valencia season (December to April). Bananas are available throughout the year but the period of heaviest supply usually occurs between November and March. Stone fruits are supplied from New South Wales districts from November to March, with the heaviest supplies being received in December and January. Grapes are in supply from January to May.

The particular fruit products which are discussed in this article have been selected partly because of their importance in the market and partly because of the regularity of their appearance in the market, so making it possible to obtain sufficient price quotations to devise a reasonably reliable seasonal price pattern. It should be borne in mind that all fruits are to some extent in competition with each other, and that some fruits, or small quantities of a particular variety of fruit from a comparatively unimportant district, which are only on the market for a short period, may have a significant influence on prices at that time.

## 2. APPLES

The total area planted to apples in Australia, both bearing and non-bearing, has declined from the pre-war level of 101,184 acres to 82,336 acres in 1955-56.

The greatest decline has occurred in Victoria where the present acreage of 20,208, bearing and non-bearing, represents a reduction of almost 10,000 acres as compared with the area planted to apples in the seasons immediately preceding 1939. Tasmania experienced a decline of approximately 6,500 acres in the same period, while South Australian acreage fell by about 4,500 and New South Wales by more than 2,500. The total acreage in Queensland has increased from 5,400 to 9,400.

Despite these large reductions in acreage, the total Australian production of apples in post-war years has generally exceeded the pre-war average production of 10 or 11 million bushels. In the latest year for which statistics are available, *i.e.*, 1955-56, total production was approximately 13.5 million bushels. Even in Victoria, with its greatly reduced acreage, apple production for the five years to 1957 has exceeded 2 million bushels. The obvious improvement in average yield per acre may be attributed to improved cultural practices and also to the fact that much of the area that has gone out of production was unsuitable for apple growing.

**New South Wales**

In New South Wales the Granny Smith is the dominant variety, representing 40 per cent of all apple trees in the State; the proportion of non-bearing trees is approximately 16 per cent which is considered sufficient to maintain the present acreage level for this variety. The two next most important varieties, viz., Jonathan (comprising 19 per cent of all trees) and Delicious (comprising 17 per cent of all trees) have a higher proportion of their trees in the non-bearing category, *i.e.*, 26 per cent and 22 per cent respectively. These three varieties will be predominant in New South Wales apple production in the foreseeable future.

The emphasis upon planting Jonathan and Delicious varieties has been quite marked in the Orange and Batlow districts in recent years, although the Granny Smith remains the dominant variety in both districts. In the Orange district plantings of Rome Beauty are also substantial, with a significant proportion of trees in the non-bearing category.

Of the other well-known varieties, Gravenstein and McIntosh Red have substantial proportions of their total numbers in non-bearing trees. Both of these early varieties are concentrated mainly in the Camden and Parramatta districts where the Jonathan is also important and will become increasingly so in future seasons. It is also possible that there will be increased plantings of early varieties in the Gosford district, especially if unfavourable conditions persist for citrus growing. The extent of the increase in this area will, of course, also depend upon the availability of suitable apple growing land.

The relative importance of the main apple growing districts can be gauged from the following percentages of total New South Wales apple trees:—

Orange	..	..	..	27 per cent
New England	..	..	..	22 do
Camden	..	..	..	14 do
Batlow	..	..	..	11 do
Bathurst	..	..	..	10 do

However, some decline can be expected in the relative importance of both New England and Bathurst.

The overall prospect in regard to New South Wales apple production appears to be favourable. Although total acreage has declined as compared with pre-war years, cultural methods have improved, new plantings have generally been made in suitable growing districts and the varieties planted have usually been more suited to the particular district than was the case in pre-war years. There has also been an increase in the last ten to fifteen years in the use of selected seedlings as root stock and a decline in the use of Northern Spy stock. In addition, the use of organic fungicides has done much to increase the proportion of the apple crop which is of marketable quality without adversely affecting tree condition or significantly diminishing the volume of the off-season crop. Although it is not possible

to forecast future apple production, the levels attained in the five years to 1956-57 ranged from 1.1 million bushels to 1.8 million bushels, and this range provides a guide to the production levels which can be expected in the next few years.

### Other States

Tasmania and Victoria are the main interstate sources of Sydney's apple supplies; however, Queensland and South Australia also make a significant contribution.

Comparatively little is known about the planting and production trends in other States, except Victoria, but the following notes may serve to give some indication of the trend in varietal composition of apple supplies.

From the information available regarding planting trends in Tasmania, it appears that Sturmer, Jonathan, Democrat, Granny Smith, Cleopatra and Delicious will constitute the main varieties. The varieties Jonathan, Granny Smith and Delicious are likely to increase in relative importance. Apple growing in this State has largely adapted itself to meet the requirements of the export markets in Europe. However, consignments to Sydney are still substantial. As far as these latter consignments are concerned, the most important varieties are Jonathan, Democrat, Granny Smith, Delicious and Crofton.

The prospect for the future apple industry in Victoria is summarised in the following statement—"if present trends continue, the area of apples in Victoria should remain fairly constant for the next thirty years, or perhaps increase slightly. The varieties Jonathan and Granny Smith should increase their dominance, although Delicious and Gravenstein are also building up. Rome Beauty and some other varieties may decline sharply, but a few minor varieties are holding their own. No spectacular plantings of new varieties are being made".<sup>2</sup>

In Queensland it appears that Delicious and Granny Smith are the dominant varieties, with Jonathan and Gravenstein next in order of importance.

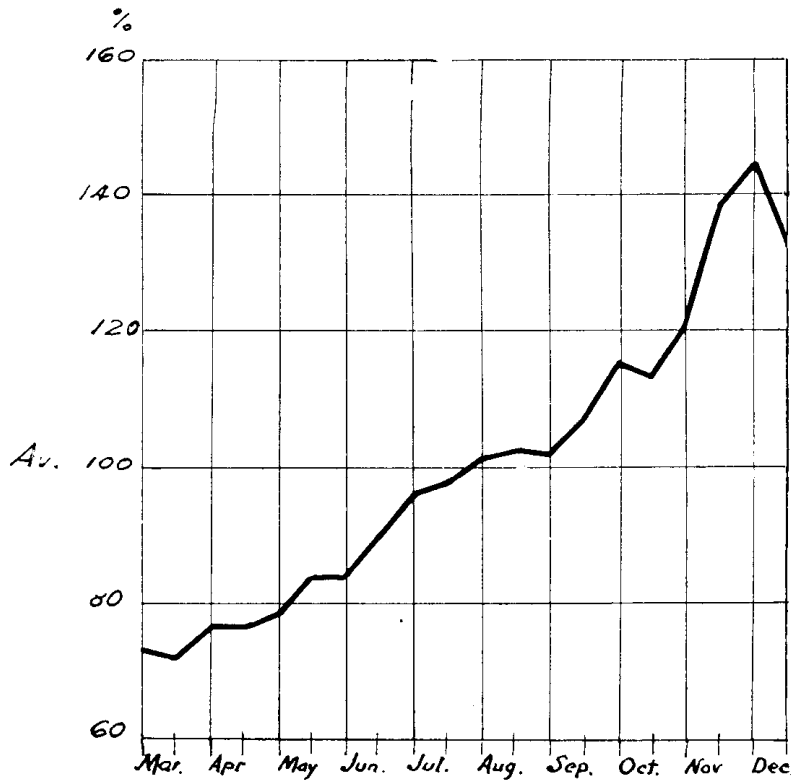
It has been estimated that the Jonathan variety comprises about 45 per cent of the apple plantings in South Australia, with Rome Beauty representing 25 per cent and Cleopatra 15 per cent.

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<sup>2</sup>C. E. Cole, "Apples and Pears in Victoria". An address delivered to the Annual Conference of Apple and Pear Growers' Association on 14th August, 1957.

**APPLES "GRANNY SMITH" 3"**

**113—125 COUNT**



**Fig. 1. Seasonal Price Pattern (1948-57) for N.S.W. Granny Smith Apples**

*A fair proportion of the Granny Smith apples available early in the season are from local districts and the Murrumbidgee Irrigation Area. They are generally of medium quality and are primarily used for cooking purposes. They are thus in competition with stone fruit and grapes until the end of May, hence prices are generally low.*

*From June values rise steadily until September when supplies of coloured apples become scarcer and a sharp upward trend is evident until the end of November. At this stage supplies of stone fruit are again available from early districts. The price decline at the end of the season may be attributed partly to the generally poorer quality of Granny Smith apples then available, as well as the competition from stone fruits.*

## APPLES N.S.W. "DELICIOUS"

125—180 COUNT

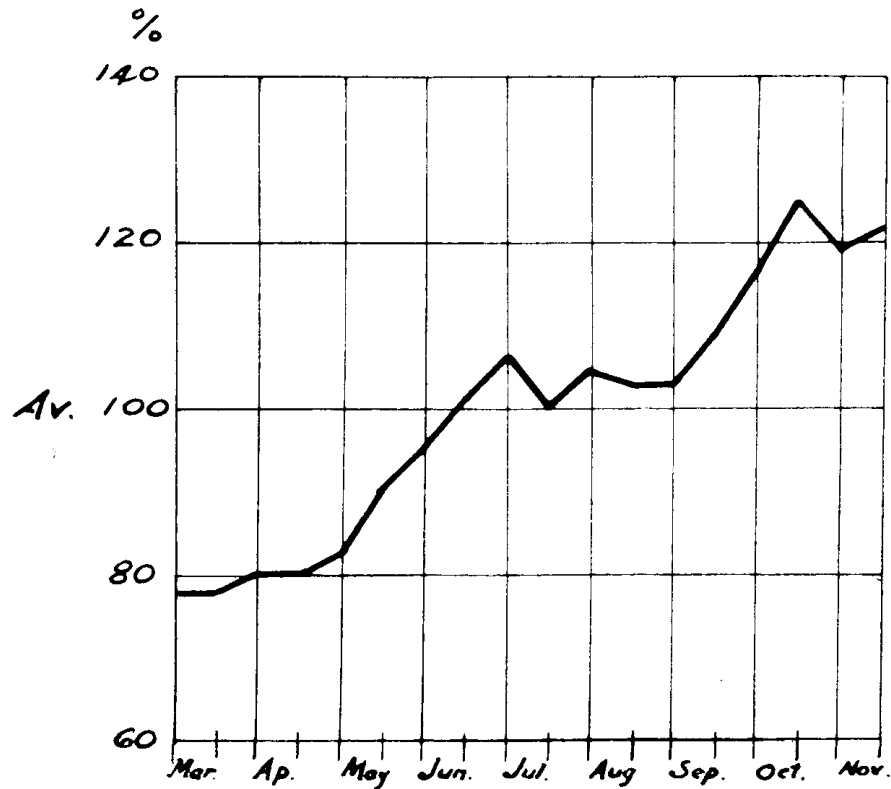


Fig. 2. Seasonal Price Pattern (1948-57) for N.S.W. Delicious Apples

Supplies of Delicious apples from March to the beginning of May usually include a fair proportion of small, immature and poorly coloured fruit as well as many lots unfit for cold storage. During this period Delicious apples are also in competition with the main New South Wales Jonathan crop and as a result prices are generally low. Thereafter, rates rise steadily until the end of June when a slight decline and recovery occurs followed by fairly stable prices in August. During July and August, heavy supplies of apples are generally received into the market and the graph for this part of the season may be a reflection of the market's adaptation to this supply situation. Prices rise sharply in September, as supplies of this variety begin to diminish, and reach the seasonal peak in the middle of October.

### 3. PEARS

The total area planted to pears in Australia is much the same as in the pre-war years, *i.e.*, 21,000 to 22,000 acres, but production has risen substantially. Production ranged from 2.0 to 2.7 million bushels in the five years ending 1938-39 whereas in the five years ending 1955-56 Australian pear production ranged from 3.5 to 4.7 million bushels.

#### New South Wales

In New South Wales the dominant varieties are Williams Bon Chretien (42 per cent of total) and Packhams Triumph (37 per cent of total). Other common varieties are Winter Cole, Beurre Bosc and Josephine, but Departmental reports as to non-bearing trees for the last two mentioned varieties suggest that additions to the present area or replantings have been negligible in recent seasons. For the State as a whole about 10 per cent of pear trees are non-bearing. It is clear that Williams Bon Chretien and Packhams Triumph will remain the dominant varieties.

Production of pears in New South Wales has ranged from 380,000 bushels to 536,000 bushels in the five years ended 1956-57.

Orange is the most important pear-growing district in New South Wales, with 39 per cent of the State's total planting. The Murrumbidgee Irrigation Area (18 per cent), Batlow (16 per cent), New England (11 per cent), Bathurst (5 per cent) and Camden (5 per cent) are next in order of importance.

#### Other States

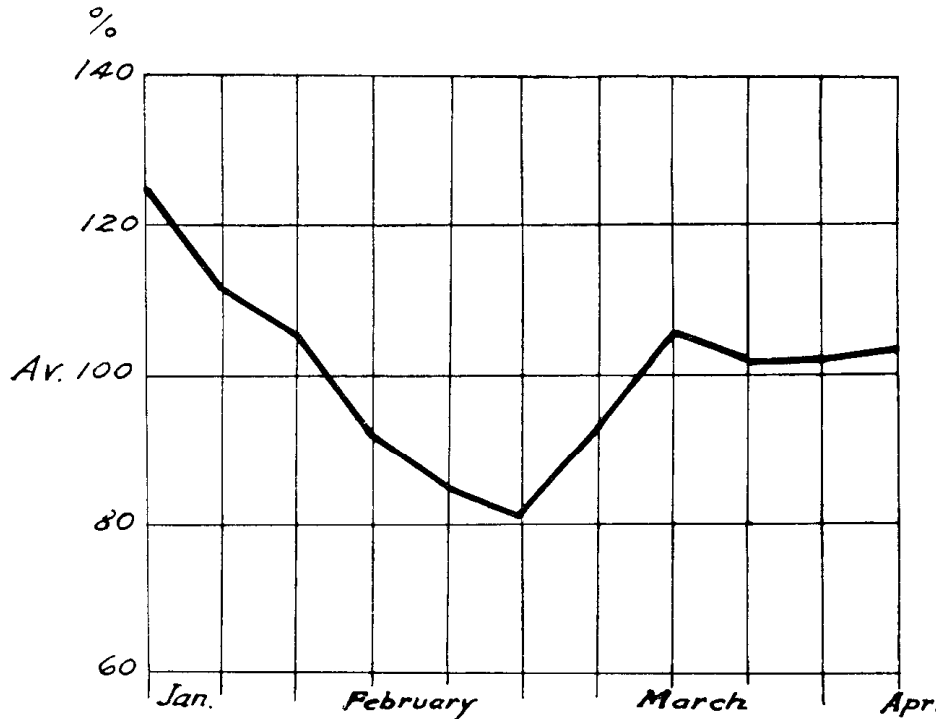
Of the interstate sources of supply, Victoria is by far the most important and its importance is likely to increase in future seasons. Consignments to Sydney from Tasmania and South Australia are comparatively small.

In regard to the Victorian pear crop it has been said that "the trends suggest an increase both in area and yield per acre and a substantial rise in production seems certain. The rate of increase in recent times has been of the order of one million bushels every ten years. These trends are attributable entirely to the varieties Williams Bon Chretien and Packhams Triumph, which together make up 80 per cent of Victoria's pear area".<sup>3</sup>

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<sup>3</sup> C. E. Cole, "Apples and Pears in Victoria". An address delivered to the Annual Conference of Apple and Pear Growers' Association on 14th August, 1957.



**WILLIAMS BON CHRETIEN PEARS**

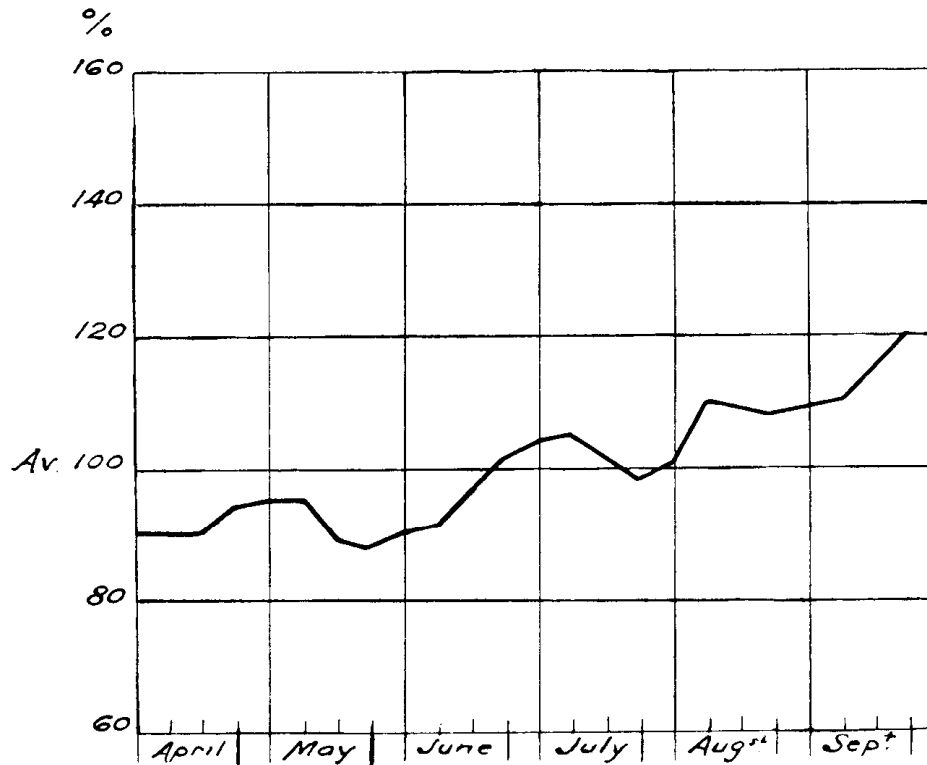
**Fig. 3. Seasonal Price Pattern (1948-57) for N.S.W. Williams Bon Chretien Pears**

*Following a break of more than three months, pears early in the season usually meet a good demand. The first variety available, Williams Bon Chretien, sells fairly steadily during January but as supplies increase, particularly from Victoria, an accumulation of fruit in a ripe condition is evident and prices are reduced considerably in an endeavour to make sales.*

*Once the offering of ripe fruit has been cleared, prices again rise until supplies are practically exhausted by the end of March.*

**PACKHAMS TRIUMPH PEARS**

**125—180 COUNT**



**Fig. 4. Seasonal Price Pattern (1948-57) for N.S.W. Packhams Triumph Pears**

*Supplies of Packhams Triumph pears from New South Wales growers are almost entirely from districts in the Central Tablelands and Southern Tablelands. A fair proportion of the crop is received from April to June, during which time stocks of other varieties, from both New South Wales and Victoria, are also available.*

*As supplies steadily decrease, prices rise from the latter part of July until the peak is reached towards the end of September.*

*It is to be noted that realisations for all varieties of New South Wales pears are governed largely by the supply and price of Victorian pears.*

#### 4. ORANGES

##### **New South Wales**

The dominant orange variety in New South Wales is the Valencia, comprising 64 per cent of total plantings, while Navels constitute 33 per cent of the total orange trees. The former variety has 17 per cent of its plantings in the non-bearing category while 16 per cent of Navels are non-bearing.

The Gosford district still contains a greater number of bearing trees, of each variety, than any other district in New South Wales, but the extremely low proportion of non-bearing trees is indicative of a significant decline in the district's relative importance. Departmental reports on tree condition in this district suggest that such a substantial proportion of the trees have been adversely affected by seasonal conditions, and in some cases by the declining interest of growers, that the district's previous production levels are unlikely to be attained in future seasons.

The Murrumbidgee Irrigation Area has the greatest total number of Valencia trees, bearing and non-bearing, with the latter category representing 29 per cent. of the district total; hence, the Murrumbidgee Irrigation Area can be expected to increase in importance as a New South Wales producer of Valencia oranges. Although there has been some increase in interest in the planting of Navels, the Valencia plantings continue to greatly outnumber those of the Navel variety.

On the basis of number of bearing trees, the Parramatta district ranks second in New South Wales, and while it may decline in importance relative to the Murrumbidgee Irrigation Area as regards Valencias, it can be expected to maintain its position in regard to Navel oranges, as 23 per cent of this variety are in the non-bearing category.

While growing centres in the Murray Valley rank below other well-known districts on the basis of tree numbers, the production potential of the district, both in terms of yield per tree and acreage of new planting, is significant. The production prospects for the areas west of the Murrumbidgee River are included in a later reference to production prospects for the whole Mildura district.

Taking New South Wales as a whole, it seems that no significant change in orange growing acreage can be expected and that production in the short run will probably fluctuate within the limits suggested by recent experience. In the five years to 1956-57, for example, production has ranged from 2.6 to 3.6 million bushels.

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**Other States**

Of the interstate sources of supply, Victoria and South Australia are the most important. Although Murray River districts, such as Cobram-Barooga, have for many years consigned large quantities of citrus fruit to Sydney it is only in recent years that the Mildura-Robinvale and South Australian Murray River districts have become important sources of supply to the Sydney market and these latter supplies are likely to increase in relative importance in future seasons.

A stable or slightly declining bearing acreage is expected in Victoria in the next few years. However, a decline in the bearing area in the Mildura-Robinvale area seems unlikely. It has been estimated that the Mildura district (including the New South Wales settlements) will produce 336,000 bushels of Navels and 400,000 bushels of Valencias in 1958-59.<sup>4</sup>

A recent outbreak of fruit fly at Dareton has restricted the movement of fruit from parts of this district to Melbourne and virtually eliminated New Zealand as an outlet for citrus fruits from the affected areas in the current season. Hence, much of the fruit in the areas affected by the restrictions is expected to be diverted to the Sydney market.

The Bureau of Agricultural Economics in its recent report on the Australian citrus industry,<sup>5</sup> suggests that South Australian orange production, which in 1955-56 equalled 1.5 million bushels, could rise to 2 million bushels "when the existing non-bearing trees reach full production".

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<sup>4</sup> "The Citrus News", April, 1958, p. 46.

<sup>5</sup> Prepared for the Annual Meeting of the Australian Citrus Growers' Federation, April 28 and 29, 1958, Berri, South Australia.

## COASTAL "VALENCIA" ORANGES

125—150 COUNT

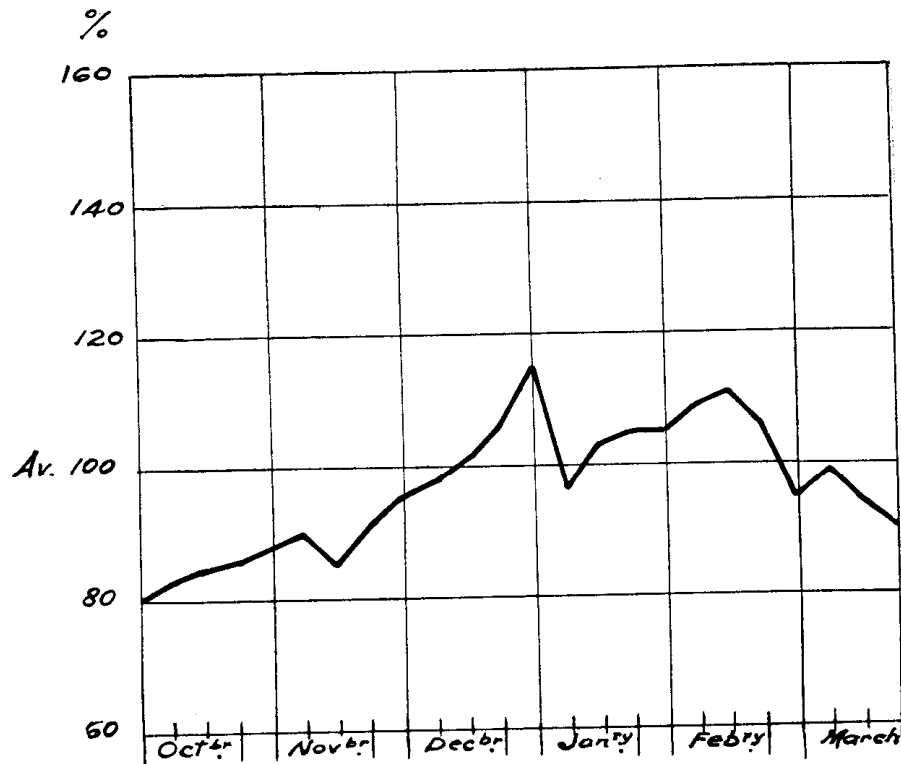
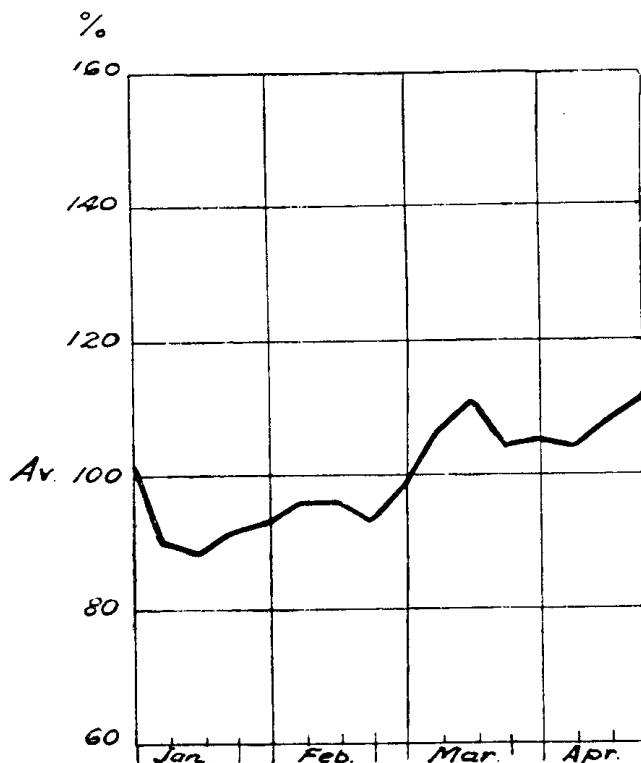


Fig. 5. Seasonal Price Pattern (1948-57) for N.S.W. Coastal Valencia Oranges

Fairly heavy stocks of Valencia oranges are received from Coastal districts during October, November and December and demand is generally weak. However, throughout the latter month, when supplies of other fruits are particularly light, prices rise sharply until the peak is reached about the Christmas holiday period. During January the market weakens considerably and rates generally are lower.

From January until March demand varies with the availability of supplies from other districts, particularly from the Murrumbidgee Irrigation Area (and in recent seasons the Murray Valley districts) and prices vary accordingly.

**M.I.A. "VALENCIA" ORANGES**



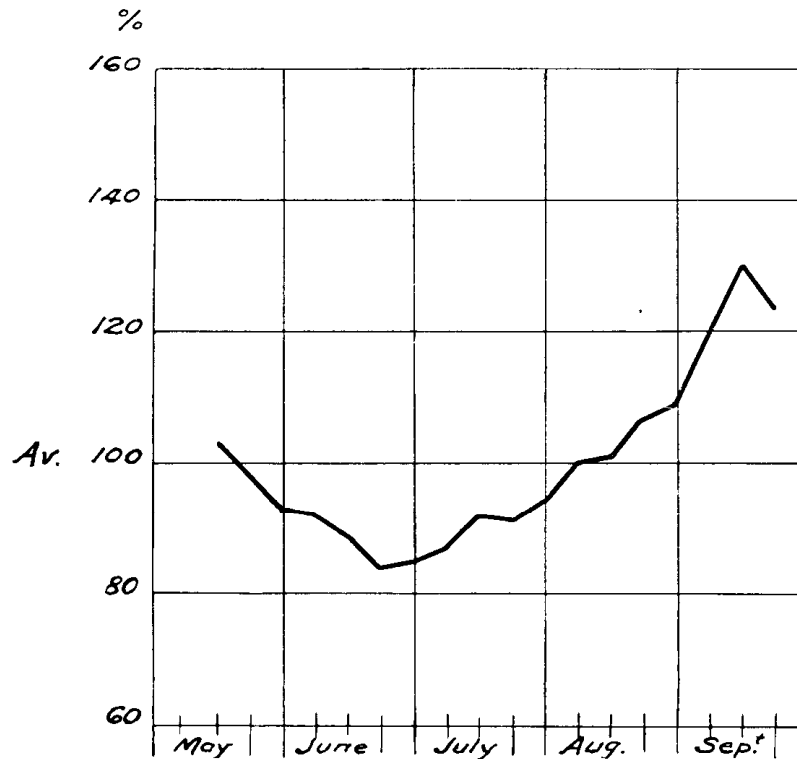
**Fig. 6. Seasonal Price Pattern (1948-57) for M.I.A. Valencia Oranges**

*A large proportion of the M.I.A. crop is marketed from January to March. The comparatively low average prices in the early part of this period may be explained by the fact that some M.I.A. growers have held fruit on trees to a stage where a decline in quality becomes apparent. Hence, market supplies include a fair quantity of poor and medium quality fruit which sells very slowly at prices which are generally low.*

*During the latter part of March when most of the M.I.A. Valencias are of better quality, prices rise and comparatively high price levels are maintained until the end of the season as supplies from coastal districts decline. It must be borne in mind that during the greater part of the period 1948 to 1957 supplies of Valencias from Murray Valley districts were not as significant as they are at present.*

## COASTAL "WASHINGTON NAVEL" ORANGES

125—150 COUNT



**Fig. 7. Seasonal Price Pattern (1948-57) for N.S.W. Coastal Washington Navel Oranges**

*Receivals from Coastal and near-Metropolitan districts during May consist mainly of artificially coloured fruit. The first few consignments sell readily, but as supplies increase demand weakens and although prices ease considerably an accumulation of fruit in this condition is evident until about the end of June.*

*Thereafter, rates show a gradual upward trend until the peak is reached about the middle of September.*

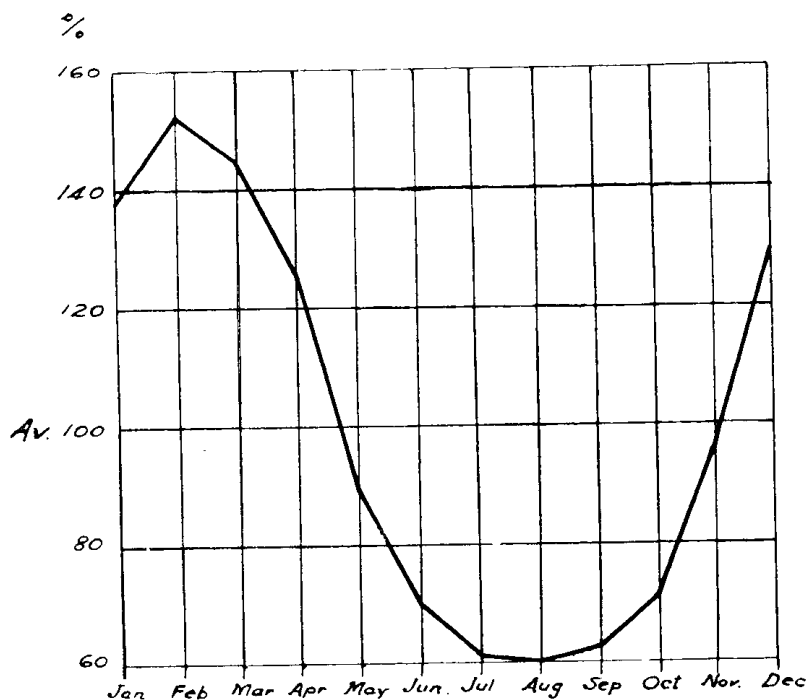
*A factor governing future prospects for Washington Navel oranges from local districts is the supply from the Murray Valley districts of New South Wales, Victoria and South Australia, which has been increasing in recent seasons. Consignments from these latter districts are now received from the end of May and, although early lots are usually slow of sale, a steady demand generally rules throughout the season.*

**5. LEMONS**

New South Wales lemon production is virtually concentrated in the Gosford and Parramatta districts. Economic conditions were unfavourable for this industry in 1956 and 1957, thus contributing to a decline in production. New South Wales has produced less than 400,000 bushels in each of the last five years (*i.e.*, to 1956-57) and on present indications production is unlikely to rise significantly above this level in the near future. By contrast, lemon production in 1950-51 reached a peak level of 451,000 bushels.

**N.S.W. LEMONS**

**163—180 COUNT**



**Fig. 8. Seasonal Price Pattern (1948-56) for N.S.W. Lemons**

Fairly heavy supplies of lemons are available from April to November from local districts and the Gosford area. Although processors operate to a limited extent the market demand generally in this period is not sufficient to prevent prices declining to very low seasonal levels.

A better demand is evident during the spring and summer months and as supplies are much lighter rates are much higher, the seasonal price peak being reached at the end of January.

The prices for 1957 were not included in the computations for the seasonal price pattern as it was an exceptional year. Supplies were particularly light and owing to heavy buying by processors a strong market ruled throughout the year. In addition, the bulk of the offering in 1957 contained a considerable proportion of small and very small fruit which would be outside the range of counts shown on the graph.



## 6. BANANAS

Over the past two decades New South Wales production centres have continuously increased their dominance in the supply of bananas to the Sydney market. Production is subject to considerable variation, e.g., New South Wales banana production equalled 2.52 million bushels in 1954-55, 4.04 million bushels in 1955-56 and 3.06 million bushels in 1956-57. However, Departmental officers have estimated that more than half the present bearing acreage is comprised of young vigorous areas which, in conjunction with improved cultural practices, could lead to a substantial increase in production in the next few years, if no abnormal seasonal conditions are experienced.

### N.S.W. BANANAS

#### SEVENS

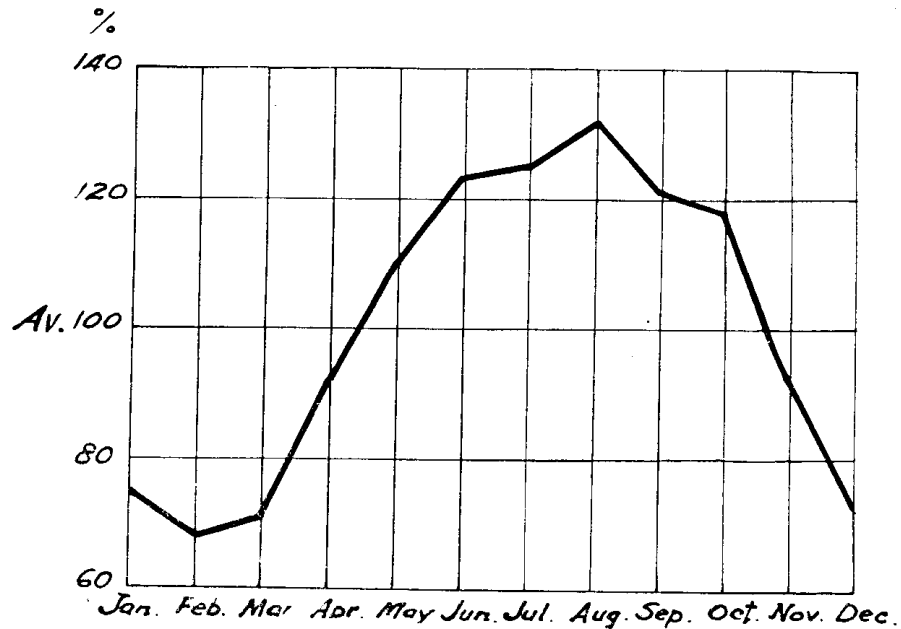


Fig. 9. Seasonal Price Pattern (1948-57) for N.S.W. Bananas

*Stocks of bananas are practically all from the North Coast districts of New South Wales. The market is fairly heavily supplied from November to March and, as this is also the main stone fruit season, prices are usually very low.*

*As receipts decrease from about the end of April, a sharp upward trend is evident until June. Supplies are very light during the next four or five months and having little or no competition from other soft fruits, prices generally remain high until October when heavier consignments lead to a sharp price decline.*

## 7. CONCLUSION

On the whole, Sydney's fruit requirements are adequately supplied during the greater part of the year under average seasonal conditions in the main growing centres. Of the fruit discussed in this article no significant change is at present expected in apple production, but production increases are likely in respect of pears, oranges and bananas.

Conclusions on the basis of available data can only be of a tentative nature, the implications of planting trends, export prospects and the pattern of local distribution and consumption are obscure.

This article has drawn attention to possible changes in the relative importance of the sources of Sydney's fruit supplies and the varietal composition of apples, pears and oranges. Where the evidence suggests that the change will be of some significance, for instance, in pears and oranges, not only will total supply change but the seasonal supply pattern and hence the seasonal price pattern may alter.

Two institutional changes which have appeared in recent years may have some impact upon fruit marketing generally. At the wholesale level, panels have been organised, *e.g.*, for Riverland oranges and New South Wales bananas, which handle fruit on a merchant basis and with an agreement regarding minimum prices. At the retail level, there appears to be a tendency for large departmental stores and chain stores to enter the food line, including fruit and vegetables, and there is also evidence of increasing interest in supermarkets and shopping centres. It is understood that the volume of sales direct from packing sheds has also shown an increase in recent seasons. It is too early to ascertain what, if any, effect such changes are likely to have on the seasonal price pattern.