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# A SURVEY OF STONE FRUIT PLANTINGS IN WESTERN AUSTRALIA

This article presents the results of a survey of commercial stone fruit plantings in Western Australia, carried out by officers of the Department of Agriculture during 1966. The main purpose of the survey was to provide varietal and other statistics not previously available in this State.

The results also give useful indications of future trends in the

industry.

DURING the 1966 stone fruit season, officers of the Division of Horticulture in the Department of Agriculture collected data on variety and age of trees for the main kinds of stone fruits—plums, peaches, apricots, nectarines and cherries for all fruit growing districts. The age categories were 0-5 years, 6.25 years and over 25 years.

For the purpose of the survey, a commercial planting consisted of "recognised varieties being grown in a commercial orchard in a husband-like manner and producing fruit for market." Thus, small groups of stone fruit trees growing in pome fruit or citrus orchards were included, whereas trees non-productive on account of neglect, even in fairly large plantings, or where the fruit is not normally marketed, were omitted.

For this reason the survey figures are below those published by the Bureau of Census and Statistics.

#### Industry trends over the past 20 years

Before considering the survey data, a brief look at the trends in stone fruit plantings over the past 20 years will give a better appreciation of the current figures. A series of graphs prepared from statistics published by the Bureau of Census and Statistics (Fig. 1) shows the changes which have occurred.

In the years immediately after the World War, plum plantings went through a period of re-adjustment, but from about 1953 onwards there was a fairly continuous expansion to meet export demands, mainly

from Singapore. Over the 20-year period to 1967, plantings of plums increased by 17 per cent.

Peaches followed a fairly similar expansion trend and now occupy an area 18 per cent. greater than in 1947. This increase is roughly equivalent to the plantings of canning varieties for processing.

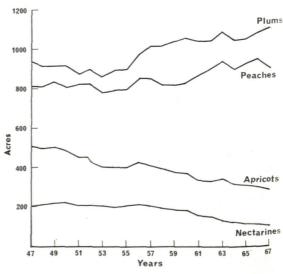


Fig. 1.-Acreage of stone fruit



The majority of plums are grown in the Hills district within easy reach of port facilities

Apricots, on the other hand, have steadily declined in area, which is now 40 per cent. less than in 1947. At the same time nectarines have diminished by 42 per cent. Overall, there are now 2,417 acres of stone fruits which is 1.8 per cent. less than in 1947.

As would be expected there is a considerable lag between increases in plantings and production, and this is obvious in Fig. 2. For plums, there is a slight variable decline in production for the 10 years 1947 to 1956, but after that a gradual increase is apparent, with a definite acceleration about 1964; 1960 was an exceptionally poor year for all stone fruits. Comparing the five year period 1963-1967 with 1948-1952 there is a 35.7 per cent. increase in production.

With peaches the position is not quite as clear because seasonal variations are more extreme, but the trend is similar. Again comparing the five year period 1963-1967 with 1948-1951 there has been an increase of 35.2 per cent. in production. This increase is due to the development of canning peaches, the production of which is now more than 40,000 bushels. This means that the production of dessert varieties has probably decreased over the 20-year period.

The production of both apricots and nectarines has dropped considerably over the 20-year period and if a comparison

similar to that for plums and peaches, is made, the production drop amounts to 28.5 per cent. and 19.2 per cent. respectively.

#### Exports

Stone fruit exports have increased fairly continuously since 1946 and are still expanding. The main export has been plums, and Fig. 3 illustrates the changes which have occured. Peach exports have been minor compared with plums, but shipments have also been on the increase.

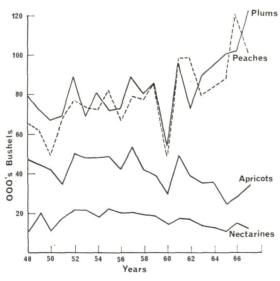
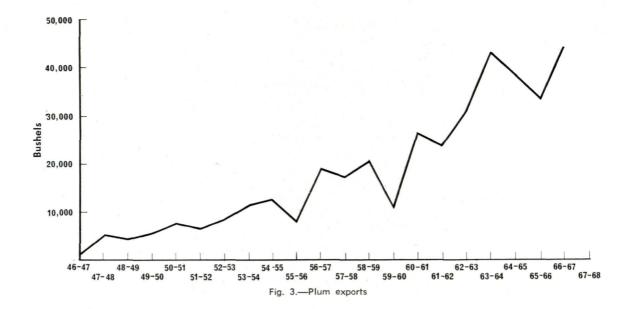


Fig. 2.-Production of stone fruits.



#### Survey results

The survey data was collected in shire districts and the summary in Table 1 presents the details in this form. The table sets out the total number of trees and percentage of each kind of stone fruit in each shire and also gives the number of properties surveyed.

Three-quarters of all stone fruits are grown in the Hills districts, with the

greatest concentration in the Kalamunda Shire. The largest plantings elsewhere are at Donnybrook and Manjimup.

To simplify graphic comparisons, some grouping of shire districts has been necessary and this forms the basis of later discussions.

For instance, the Shires of Armadale-Kelmscott, Gosnells, Serpentine-Jarrah-dale and Murray have been grouped under

Table 1.—Summary of stone fruit survey results by shire districts

Shire District	Japanese plums	European plums	Cherries	Peaches	Nectarines	Apricots	Total trees	Number of pro-
Armadale-Kelmscott	20,263	35	119	11,673	504	5,680	38,274	107
Kalamunda	47,197	80	23	17,061	379	7,225	71,965	199
Gosnells	572		4	238	34	311	1,159	8
Eastern Hills	8,340	141	25	4,725	233	2,010	15,474	99
Serpentine-Jarrahdale	386		4	356	1	3	750	3
Swan-Guildford	510			3,718	11	363	4,613	93
Murray	417		12	167	40	15	651	6
Harvey	24			. 6	12	362	404	2
Collie	20			93	9		122	2
Dardanup	60			57	58	35	210	3
Capel	1,047	60	190	538	211	215	2,612	13
Donnybrook	7,325	84	429	4.897	1,517	175	14,427	94
Balingup	2,127	379	270	1,829	927	28	5,560	33
Greenbushes	222		50	2,852	51	78	3,253	3
Bridgetown	1,463	7	38	3,785	1,506	57	6,856	36
Manjimup			4	14,328		152	14,484	18
Plantagenet	107		373	292	37	149	958	5
	90,080	786	1,541	66,615	5,530	16,858	181,772	724
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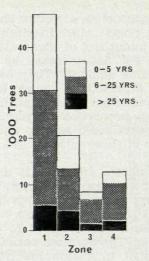


Fig. 4.—Plum age groups and districts: 1. Kalamunda. 2. South Suburban. 3. Eastern Hills. 4. South West.

South Suburban. The south west zone includes all Shires from Harvey to Manjimup and where the south west is segregated as in the case of peaches, then Harvey, Collie, Dardanup and Capel are included with Donnybrook.

#### Plums

Practically all commercial plum orchards are now Japanese varieties. Only 786

European plum trees were recorded, scattered through older orchards.

The development of the export market in Singapore has played an important part in growers' decisions to expand plum plantings, both as regards varieties and the main areas involved.

The distribution of plum plantings is illustrated in Fig. 4. Eighty-six per cent. of all plum trees are growing in the Hills districts within easy reach of port facilities; 47,197 are in Kalamunda-Pickering Brook and 20,263 in South Suburban. A third of all plum trees are less than six years old.

#### Plum varieties

Detailed statistics were collected on 18 plum varieties (Table 2), the rest (less than 1 per cent. of the total) were lumped together. The four main varieties Narrabeen, Santa Rosa, Ruby Blood and Wickson make up 73.2 per cent. of plantings. Age distributions are shown in Table 2 and illustrated in Fig. 5.

The Narrabeen, which is essentially an export plum, is the main variety grown in this State and accounts for 24.9 per cent. of plantings. 30.7 per cent. are under six years old which indicates the confidence shown by growers in the export

Table 2.—Age distribution of the main Japanese plum varieties

	0-5 y	ears	6-25 y	ears	Over 25	years	Total	
Variety	No. trees	%	No. trees	%	No. trees	%	trees	%
Narrabeen	6,461	29.9	12,819	58.9	2,670	12-2	21,950	24.9
Santa Rosa	4 121	33.3	8,324	45-1	3,982	21.6	16,437	18.7
Ruby Blood	4 699	31.4	9,160	61.2	1,102	7.4	14,961	17-0
Wickson	1 474	15.9	7,742	73.5	1,107	10.6	10,523	11.9
Satsuma	959	19.0	1,754	34.8	2,318	46.2	5,031	5.7
Wilson's Early	2017	53.3	1,581	41.7	186	5.0	3,784	4.3
Mariposa	2 591	77.9	729	22.0	3	0.1	3,313	3.8
Require	700	27.9	1,329	52.3	499	19.8	2,537	2.9
Elizabeth	1 134	46.0	1,249	50.7	78	3.3	2,461	2.8
Delaware	99	5.5	851	47.8	831	46.7	1,780	2.0
ormosa	1.070	69.8	436	28-2	30	2.0	1,545	1.8
Shine	261	41.1	170	26.7	204	32.2	635	0.7
Kelsey	200	33.4	358	57.2	58	9.4	625	0.7
Elephant Heart	300	55.3	241	43.3	7	1.4	556	0.6
Gem	124	28.4	314	71.6		100000	438	0.5
Croswell	94	33.5	115	39.0	84	27.5	295	
Rurhanle	6	4.0	10	6.7	133	89.3	149	1.7
Climay					42	100.0	42	1.7
Other	495	48.6	283	27.6	240	23.8	1,018	1.7
TOTAL	27,041	30-7	47,465	53.9	13,574	15.4	88,080	

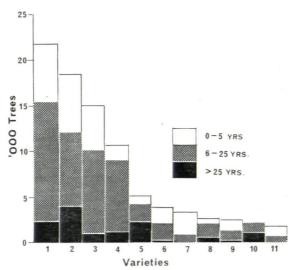


Fig. 5.—Plum varieties and age groups: 1. Narrabeen. 2. Santa Rosa. 3. Ruby Blood. 4. Wickson. 5. Satsuma. 6. Wilsons Early. 7. Mariposa. 8. Beauty. 9 Elizabeth. 10. Delaware. 11. Formosa

industry; 58.9 per cent. also come in the 6 to 25 year old category so that a very substantial lift in production can be anticipated in the near future.

The Santa Rosa, which is important on the local market as well as for export, is second with 18.7 per cent. of plantings and 33.3 per cent. under six years. A larger proportion (21.6 per cent.) comes into the over-25 year group than in the case of Narrabeen but Santa Rosa trees normally have a longer life so this is unlikely to seriously offset the expected increase in production from young trees.

The waning popularity of the Wickson is indicated by the smaller proportion of young trees (15.9 per cent.). Many of the older trees will go out of production so that the potential for increased production is much less for this variety.

Ruby Blood is still being extensively planted (31.4 per cent. under six years) and this no doubt reflects the favourable position it holds on the local market as well as its export potential.

Lesser varieties in which growers have shown considerable interest in recent years are Mariposa, Wilson's Early, Elizabeth and Formosa. There are from one to two thousand young trees of each of these varieties.

In view of the large proportion of young trees, it is obvious that the production of plums will continue to rise and that Narrabeens will be the largest contributor.

The high proportion of young Santa Rosas and Ruby Bloods must inevitably lead to increased quantities of these varieties but Wicksons will not increase by anything like the same amount. They could, however, be expected to more than hold present production for a number of years.

The high proportion of young Wilsons and Mariposas could lead to doubling the production of these varieties in a few years time.

The Elizabeth, although it has all the makings of a good export variety has never become very popular, and it is interesting therefore to note that almost half of the present plantings have still to come into full bearing. The Formosa variety has also been planted in reasonable numbers in recent years.

#### **Peaches**

Plantings of commercial peaches are considerably less than plums—66,615 as against 90,080. Of these, 43,575 are dessert varieties and 23,040 canning type, mainly Golden Queen. Dessert varieties are concentrated in the Hills (Fig. 6), mainly South Suburban and Kalamunda with lesser plantings in Eastern Hills and the Swan. Only 15 per cent. are in the South-West, mainly at Donnybrook.

Most canning peaches are in the South-West and less than 5 per cent. are grown in the Hills districts. Manjimup is the main centre, with significant plantings also in Bridgetown and Greenbushes.

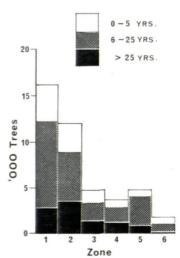


Fig. 6.—Dessert peach age groups and districts: 1. Kalamunda. 2. South Suburban. 3. Eastern Hills. 4. Swan-Guildford. 5. Donnybrook. 6. Bridgetown

Table 3.-Age distribution of the main peach varieties

	0-5 y	0-5 years		ears	over 25 years		Total	
Variety	No. trees	%	No. trees	%	No. trees	%	trees	%
Golden Queen	8,642	37 · 5	14,280	62.0	118	0.5	23,040	34-6
Iberta	787	12.6	3,855	61.4	1,627	26.0	6,269	9 - 4
Ruby Red	152	3 - 1	2,987	61.5	1,719	35.4	4,858	7 - 2
Halehaven	3,001	62 - 1	1,780	36.6	50	1 · 3	4,831	7 - 3
pinks	1,576	32-8	2,886	60 - 2	335	5.4	4,797	7 - 2
Blackburn	1,067	22.9	3,072	65.9	521	11.2	4,660	7.0
dwards VII	678	24.6	1,335	48 · 4	746	27 - 0	2,759	4-1
Dunhelm	284	11.6	1,038	41 - 8	1,161	46 · 6	2,483	3 - 7
riumph	61	3 - 1	678	34.2	1,242	62.7	1,981	3 - 0
. H. Hale	545	36 - 3	759	50 · 5	199	13.2	1,503	2 · 3
Viggins	26	2.0	487	36.6	817	61-4	1,330	2.0
Anzac	300	25 · 1	266	11-1	628	63.8	1,194	1 - 8
tarking Delicious	1,041	87.8	144	12.2		****	1,185	1.8
Vestralian Beauty	56	3 - 3	717	68 · 2	279	26 · 5	1,052	1.6
Natts Early	63	12-1	334	64.2	123	23.7	520	0 - 8
Rowe's Slip	6	1 · 2	158	30.8	349	68 - 0	513	0.8
Others	1,094	30 · 1	1,780	48 · 9	766	21.0	3,640	5 · 4
TOTAL	19,379	29 · 1	36,556	59 · 4	10,680	16.0	66,615	

#### Dessert peach varieties:

Detailed figures were collected on 15 dessert peach varieties which comprise almost 95 per cent. of plantings (Table 3). Elberta heads the list, but Ruby Red, Halehaven, Spinks, Blackburn and the early varieties Edward VII and Dunhelm type follow closely (Fig. 7). These seven make up 70 per cent. of plantings.

A significant feature of the survey figures is that 24 per cent. of dessert peach trees are over 25 years of age and this is counterbalanced almost exactly by the proportion of trees under six years old. Varieties with a high percentage of old trees are Anzac (63.8) Wiggins (61.4) Rowe's Slip (68.0) and Ruby Red (35.4). These varieties, with the exception of Anzac, also have a very

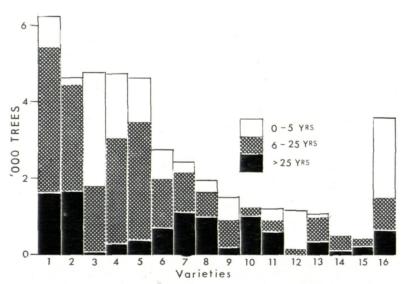


Fig. 7.—Dessert peach varieties and age groups: 1. Elberta. 2. Ruby Red. 3. Halehaven. 4. Spinks. 5. Blackburn. 6. Edward VII. 7. Dunhelm. 8 Triumph. 9. J. H. Hale. 10. Wiggins. 11. Anzac. 12. Starking Delicious. 13. Westralian Beauty. 14. Watts Early. 15. Rowes Slip. 16. Others

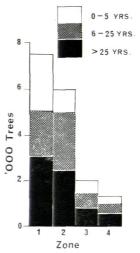


Fig. 8.—Apricot age groups and districts: 1. Kalamunda. 2. South Suburban. 3. Eastern Hills. 4. South West

small proportion of young trees and their production must decline.

Varieties which have better proportions of young and old trees and should therefore hold their present production are Elberta. Blackburn, Edward VII and Watts Early.

The most spectacular production increase can be expected from Halehaven (62.1 per cent, under six years), Starking Delicious (87.8 per cent. under six years) and Spinks (32.8 per cent. under six years). Some interest has been shown in planting J. H. Hale (36.3 per cent. under six years) but the actual number of trees is small.

#### Canning peaches

The only significant canning variety is the Golden Queen, 23,040 trees were recorded in the survey. Of these 37.5 per cent. are still under six years old and only 0.5 per cent. are older than 25 years. This is a young industry and considerable increases in total production will occur.

#### Apricots

In view of the continual decline in the acreage of apricots over the past 20 years it is surprising that the survey showed that 29.8 per cent. of present trees are less than six years old. Apricot trees normally have a long life and therefore the fact that 45 per cent. are over 25 years old does not necessarily mean that these trees will go out of production quickly. The overall effect may be an upturn in production in the near future.

Most (92.6 per cent.) apricot trees are in the Hills (Fig. 8) with Kalamunda first, followed closely by Armadale-Kelmscott. Considerable commercial plantings are also located in the Mundaring area. Apricots are of very limited significance in the South-West.

#### Apricot varieties

The eight varieties included in the survey make up 96.1 per cent. of plantings (Table 4). The Newcastle Early leads with 37.3 per cent. followed by the Royal with 21.5 per cent. and Trevatt 11.6 per cent. (Fig. 9). Considerable plantings of young trees have been made in all these varieties as well as the more recent introduction Bullida. More than 80 per cent. of Bullida trees are under six years old. However, Newcastle Early heads the list of new plantings with more than twice the number of young trees of any other variety.

Table 4.—Age distribution of the main apricot varieties

			0-5 ye	ears	6-25 ye	ars	over 25	years	Total	
Var	iety		No. trees	%	No. trees	%	No. trees	%	trees	%
Newcastle			1,829	29.0	1,848	29.4	2,623	41 · 6	6,300	37 · 3
Royal			931	25.7	825	22.8	1,863	51.5	3,619	21.5
Trévatt			779	39.5	924	46.9	261	13.6	1,964	11.6
Moorpark			252	18-6	322	23.8	782	58 · 6	1,356	8.0
Bullida			888	80 - 1	190	17-3	31	2.0	1,109	6.6
Blenhelm			57	5.6	180	19.4	697	75.0	934	5 - 5
Dullins			61	9.4	104	16.5	467	74-1	632	3.7
Tilton			93	31.2	110	31 - 3	120	37 - 5	323	1.9
Others			132	27 · 3	89	14-1	411	58 · 6	632	3.9
TOTAL		-	5,022	29.8	4,592	27 · 2	7,255	43 · 0	16,869	

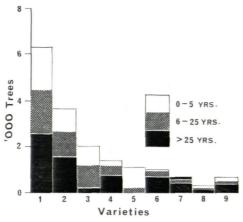


Fig. 9.—Apricot varieties and age groups: 1. Newcastle. 2. Royal. 3. Trevatt. 4. Moorpark. 5. Bullida. 6. Blenheim. 7. Oullins. 8. Tilton. 9. Others



Most nectarines are growing in the south-west from Donnybrook to Bridgetown (Fig. 10). Less than one fifth are in the hills.

The Goldmine variety dominates the scene, with 74 per cent. of plantings (Table 4, Fig. 11). The only other variety of consequence is W.C. Fripps but this accounts for only 13.7 per cent. The age groupings do not suggest any real likelihood of nectarine production increasing. Young trees will do little more than replace those going out of production due to old age.

#### Cherries

Only 1,541 cherry trees were recorded in the survey. Of these, 981 are located in the South West, mainly in the Donnybrook, Capel and Balingup Shires, 373 are

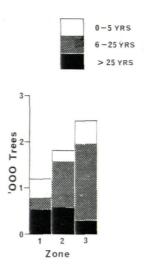


Fig. 10.—Nectarine age groups and districts: 1. Hills. 2. Donnybrook. 3. Bridgetown

in Plantagenet and the rest are scattered through the Hills districts. The renewed interest in cherries is indicated by the fact that 46 per cent. of trees are less than six years old. A further 33 per cent. are from six to 25 years old. Although cherries are often not very productive, a substantial increase in production can be expected particularly as most new plantings are in the districts more favoured for this crop.

#### The future of stone fruit

The survey indicates that the trends in production set out in the early part of this article can be expected to continue. Plums are well catered for both as regards supplies for the local market and for export, and present varieties give a good spread of supplies during the full season.

Table 5.—Age distribution of the main nectarine varieties

	0-5 years		6-25 years		over 25 years		Total	
Variety	No. trees	%	No. trees	%	No. trees	%	trees	%
Goldmine	876	21.2	2,190	53 - 5	1,027	25.3	4,093	74.0
W. C. Fripp	87	11.5	481	63 · 5	190	25.0	758	13.7
Or. Chisholm	101	60-5	17	10.2	49	29-3	167	3.0
ictoria	6	4-2	73	50 - 0	67	45 - 8	146	2.6
Newboy	78	64.5	21	17.4	22	18-1	121	2.2
lasterpiece	. 8	12-4	47	73.5	9	14-1	64	1.2
Rivers	29	58-0	21	42.0			50	0.9
Others	10	7.6	97	74-1	24	18.3	131	2.4
TOTAL	1,195	21.6	2,947	53 · 3	1,388	25 · 1	5,530	

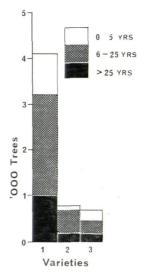


Fig. 11.—Nectarine varieties and age groups: 1. Goldmine. 2. W. C. Fripp. 3. Others

Production of all the more popular varieties can be expected to increase considerably and there appears to be no justification for further extensive plantings.

Peaches show no indication of an overall increase in production except for the Golden Queen canning variety. The early and late dessert peach market is fairly well catered for, but there does appear to be a need for planting varieties to ripen in the first half of January, that is, between the early varieties and Halehaven.

At present this period is covered by the Ruby Red but as this variety declines in popularity other varieties will be needed to fill this important mid-season period.

It is hoped that some of the new imported peach varieties will provide suitable replacements for some of the less desirable varieties now being grown and also enable an expansion of peach plantings, which seems desirable in view of the static nature of dessert peaches at present.

New apricot plantings are heavly in favour of early varieties. There would appear to be a need for a more balanced programme of planting to provide greater production of mid-season and late varieties.

Nectarine production is heavily based on one variety, the Goldmine, a fact which must be carefully weighed in any consideration of large scale plantings of this fruit. New varieties are needed to spread the harvest period.

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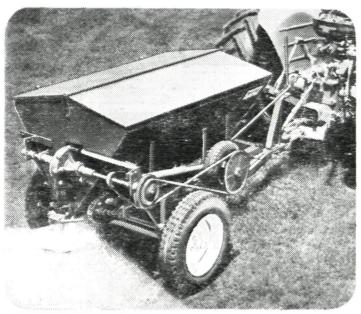
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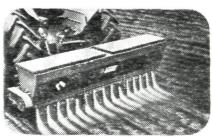
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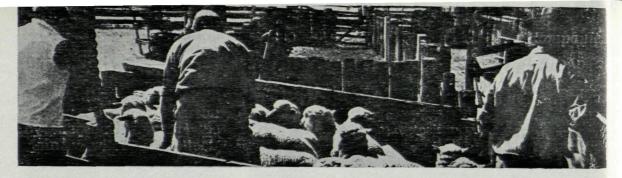


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