

AVOCADO PLANTINGS IN SUNRAYZIA, AUSTRALIA

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Sunraysia is the local name for the irrigation area of the Murray Valley around Mildura and extends into Victoria and N.S.W. for a radius of about 100 km.

The first avocado planting in Sunraysia was made in 1928 at Red Cliffs of 25 imported trees from Armstrong Nurseries, Ontario, California, U.S.A. by Mr. W. T. Yates (Alexander, Maggs and Hawson, unpublished). One of the original trees still survives after being transplanted to the Commonwealth Scientific and Industrial Research Organization, Division of Horticultural Research, Merbein in 1966. At present, six avocado seedlings obtained in 1933 from Mr. J. L. Provan of the Victorian Department of Agriculture as well as four trees from a second importation made in 1935 from Armstrong Nurseries are still growing in the district. Apart from these early introductions, two trees of the Fuerte cultivar and one of the Anaheim were introduced between 1954 and 1957 from Longreach Farm, Brisbane, Queensland. However, commercial and experimental plantings were made in the early 1960's. Different avocado cultivars were planted on the Mildura Horticultural Research Station, Victoria in 1963; The Commonwealth Scientific and Industrial Research Organization, Division of Horticultural Research at Merbein, Victoria in 1964 and on the Dareton Horticultural Research Station, N.S.W. in 1967 to study their suitability under local conditions.

With the growth of the industry an avocado association was formed in 1975, with representation on its committee from the agricultural organizations in the area. Late in 1975 the association decided that an estimate of the different avocado cultivars planted in Sunraysia per year of planting was warranted. A survey, therefore, was conducted by the New South Wales (N.S.W.) and Victorian Departments of Agriculture to cover the period from 1961 to June 1976.

Plantings

The data obtained are presented and discussed in an effort to throw some light on the future of the avocado industry in Sunraysia.

Up to 1970 800 trees were planted in N.S.W. (Figure 1) compared with about 200 trees in Victoria, after that the Victorian annual plantings increased rapidly to reach about 4000 trees in 1975, then dropped to about 750 in 1976.

It seems that while N.S.W. growers took the initiative in the early introduction of avocados, Victorian growers were somewhat reluctant. This led to two expansion phases in N.S.W. (Figure 2) but only one in Victoria. During the first expansion phase from 1965 to 1971 about 15% of all avocado trees in Sunraysia were planted in N.S.W., and over 25% during the second phase from 1973 to 1976. In Victoria a single expansion phase peaked in 1975 with about 35% of the current avocado plantings in Sunraysia.

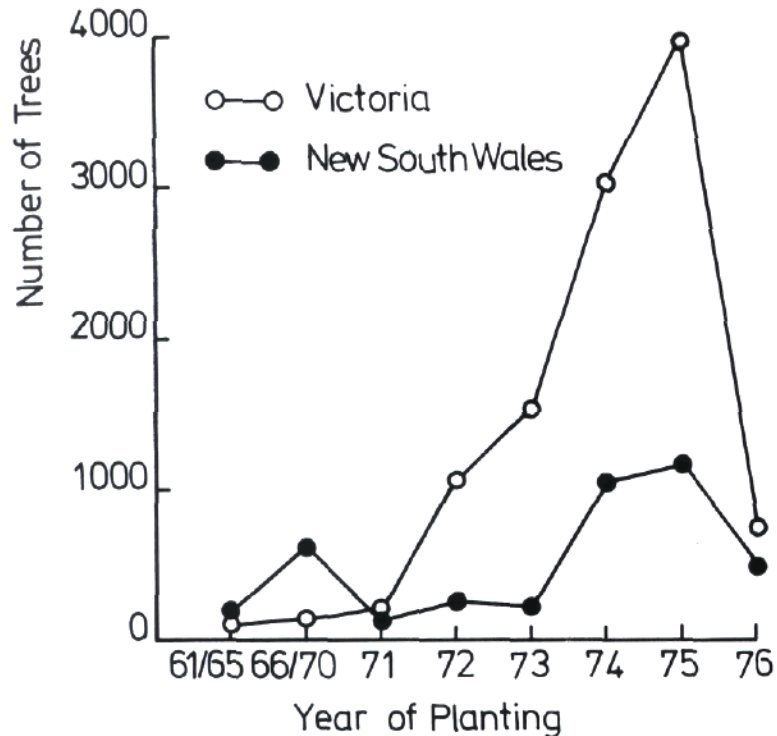


FIGURE 1. Number of avocado trees planted each year in N.S.W. and Victorian parts of Sunraysia from 1961 to 1976

Cultivars

The major cultivars planted are Fuerte, Hass, Bacon, Sharwill, Rincón and Zutano (Figure 3). The Fuerte cultivar accounts for about half of all plantings, Hass about a quarter, with 15% taken up by Sharwill and Zutano in Victoria but only 7% in N.S.W. Seedlings make up 9% in N.S.W. but only about 3% in Victoria — this is mainly due to early planting in N.S.W. when about 200 seedlings were planted during 1966-70 (Table 1) and this was not matched in Victoria until 1974 (Table 2). It is interesting to note that the first commercial plantings in Victoria included 30 trees of the Fuerte cultivar and one tree each of Edranol, Hass and Nabal whilst similar plantings in N.S.W. included Rincón and Zutano (Alexander, Maggs and Hawson, unpublished).

Planting Locations

When avocado plantings in Victoria are considered by location (Figure 4) the newer (less than 35 years old) horticultural areas, Colignan, Nangiloc, Iraak and Robinvale, have 77% of all plantings in the district (Table 3) while the older settlements, Red Cliffs, Irymple, Koorlong and Merbein, shared the remainder, with Merbein having 14.4%. The number of properties in the new areas is only 15 against 22 in the older areas but the average size of each planting in the new area is about five times that of the older areas.

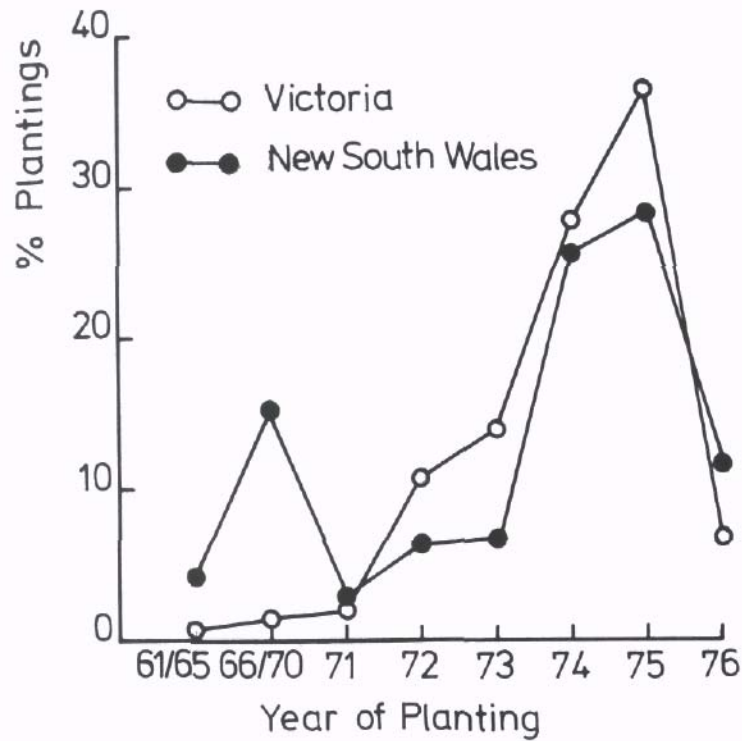


FIGURE 2. Percentage of avocado plantings per year in N.S.W. and Victorian parts of Sunraysia from 1961 to 1976

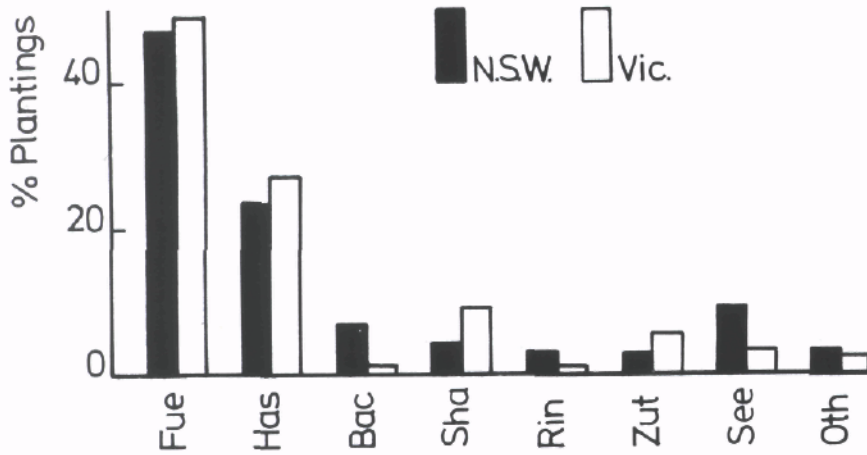


FIGURE 3. Percentage of the major avocado cultivars planted in N.S.W. and Victorian parts of Sunraysia up to June 1976

Cultivar legend:

Fue = Fuerte
 Has = Hass
 Bac = Bacon
 Sha = Sharwill

Rin = Rincon
 Zut = Zutano
 See = Seedlings
 Oth = Others

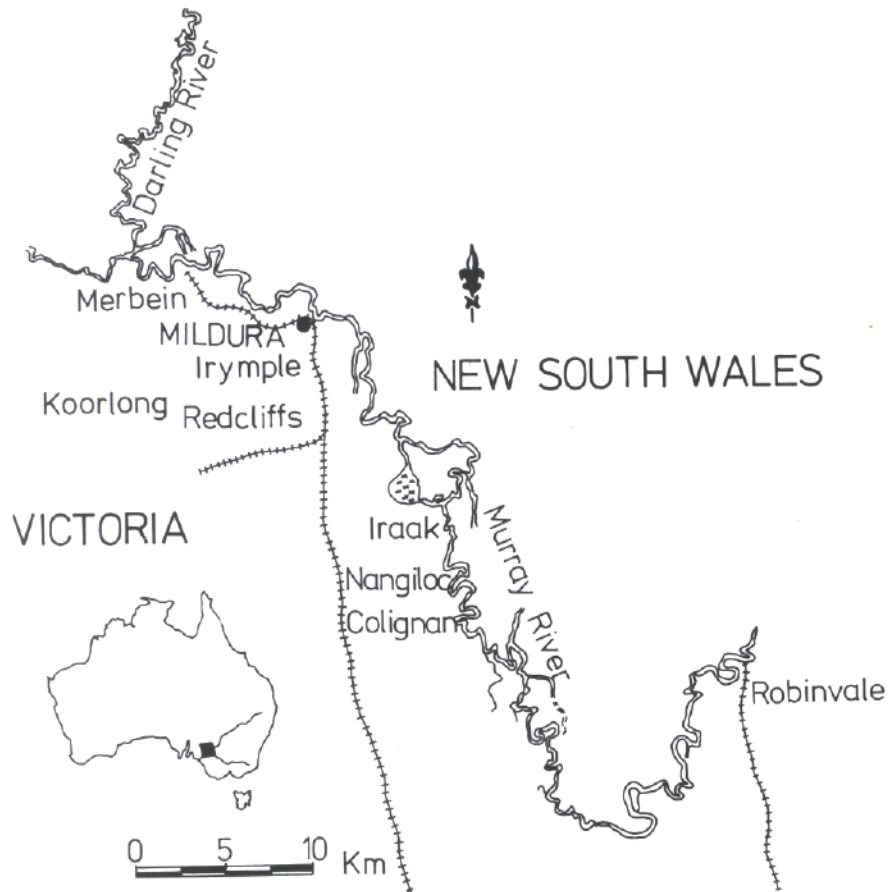


FIGURE 4. Location of avocado plantings in Victoria

TABLE 1

*Number of avocado trees per year of plantings in
N.S.W. Sunraysia, 1976*

Cultivar	Year							
	61/65	66/70	71	72	73	74	75	76
Bacon	0	0	1	72	3	15	110	43
Fuerte	160	288	0	32	158	551	530	206
Hass	0	124	3	0	60	291	304	181
Rincon	7	1	1	42	2	50	3	22
Sharwill	0	0	0	50	0	27	96	2
Zutano	5	3	0	0	2	67	43	2
Seedling	0	201	67	60	0	0	56	0
Others	5	6	50	0	7	47	16	19

TABLE 2

*Number of avocado trees per year of plantings in
Victorian Sunraysia, 1976*

Cultivar	Year							
	61/65	66/70	71	72	73	74	75	76
Bacon	0	0	7	41	0	23	30	37
Fuerte	38	82	76	768	914	1367	1840	248
Hass	0	28	71	285	308	899	1042	349
Rincon	1	2	0	14	14	68	20	17
Sharwill	0	15	1	15	118	187	597	50
Zutano	1	9	6	18	99	155	350	0
Seedling	0	0	12	6	50	198	60	45
Others	9	8	41	14	21	128	30	2

TABLE 3

Number and % of avocado plantings with number and size of properties in different locations in Sunraysia, Victoria at June 1976

Location	Number	%	Number of Properties	Average Number of trees/property
Colignan	5113	47.2	6	852
Nangiloc	1437	13.3	3	479
Iraak	1667	15.4	5	333
Robinvale	110	1.0	1	110
Red Cliffs	496	4.6	7	71
Irymple	33	0.3	3	11
Koorlong	412	3.8	4	103
Merbein	1566	14.4	8	196

It is interesting to examine the distribution of the major cultivars in Victoria over all locations and within the same location. Over all locations (Table 4), the newer areas make up most of the plantings of each cultivar except Bacon, with 75% for Rincón and 59% for Hazzard, 77% for Fuerte, 67% for Hass, and over 92% for Sharwill, Zutano and Edranol. Most of these plantings are in Colignan except for Rincón which is mainly planted in Nangiloc. Bacon is the major cultivar in Merbein where it represents 55% of all plantings.

When the distribution of the trees is considered within the same location (Table 5) Fuerte is the predominant cultivar in all areas except Koorlorig ranging from 18% in Irymple to 72% in Red Cliffs. In Koorlong Hass is the major cultivar, representing 52% plantings but in all other locations Hass comes second, and ranges from 9% of plantings at Irymple to 43% at Merbein.

Apart from Fuerte and Hass, the distribution of the remainder of the cultivars in the older areas varies in a way that probably reflects the introduction of avocado.

TABLE 4

Distribution of major avocado cultivars as % of total number of trees over all planting locations in Victoria at June 1976

Cultivar	Planting Location									
	New					Old				
	Colignan	Nangiloc	Iraak	Robin- vale	Total	Red Cliffs	Irymple	Koorlong	Merbein	Total
Fuerte	51.3	9.5	16.0	0.5	77.3	6.7	0.1	2.6	13.3	22.7
Hass	38.0	13.6	14.9	0.8	67.3	3.0	0.1	7.2	22.4	32.7
Sharwill	59.9	13.0	24.9	0	97.8	0.1	0	0	2.1	2.2
Zutano	71.6	5.5	15.5	4.7	97.3	1.7	0.2	0.6	0.2	2.7
Bacon	10.1	0	0	21.7	31.8	12.4	0	0.7	55.1	68.2
Rincon	27.2	46.3	1.5	0	75.0	12.5	0.7	0	11.8	25.0
Edranol	92.6	0	0	0	92.6	1.2	2.5	0	3.7	7.4
Hazzard	35.3	23.5	0	0	58.8	0	11.8	0	29.4	41.2

TABLE 5

Distribution of major avocado cultivars as % of total number of trees in the same planting location in Victoria at June 1976

Cultivar	Planting Location								
	New				Old				
	Colignan	Nangiloc	Iraak	Robinvale	Red Cliffs	Irymple	Koorlong	Merbein	Total
Fuerte	53.5	35.4	51.1	22.7	72.4	18.2	34.2	45.3	
Hass	22.1	28.3	26.6	22.7	17.9	9.1	52.4	42.6	
Sharwill	11.5	8.8	14.7	0	0.2	0	0	1.3	
Zutano	8.9	2.4	5.9	27.3	2.2	3.0	1.0	0.1	
Bacon	0.3	0	0	27.3	3.4	0	0.2	4.9	
Rincon	0.7	4.4	0.1	0	3.4	3.0	0	1.0	
Edranol	1.5	0	0	0	0.2	6.1	0	0.2	
Hazzard	0.1	0.3	0	0	0	6.1	0	0.3	
Others	1.4	20.4	1.6	0	0.3	54.5	12.2	4.3	

Early introductions were based on very individual preferences but after the success of Fuerte and Hass in N.S.W., Victorian growers tried to select cultivars which were least susceptible to frost damage and which would extend the avocado season.

CONCLUSION

From this survey it seems that avocado plantings will continue in Sunraysia areas although at a slower rate than that experienced during 1973-75, particularly in N.S.W. because of water restrictions and the availability of avocados from the northern parts of that State. In Victoria, with the success of the owners of the present plantings a second expansion phase in about ten years time would be expected.

This could be accompanied by changes in cultivar selection then as the new growers draw on the experience of the earlier ones, particularly of these cultivars and rootstocks combinations which are resistant or less susceptible to certain pest and diseases and preferably virus free.

ACKNOWLEDGEMENTS

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