AGRICULTURE IN SOUTH AUSTRALIA —the Murray Mallee

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AGRICULTURE IN SOUTH AUSTRALIA
The Murray Mallee

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The River Murray forms the boundary of part of the Murray Valley District.

THIS district comprises the Counties Albert, Alfred, and Chandos; it is bounded on the north and west by the River Murray, on the east by the Victorian border and on the south by non-farming areas of the Ninety Mile Plain.

Natural vegetation south of Loxton, showing typical mallee eucalypts and acacias.

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GENERAL INFORMATION

The topography of the district changes very little; the land is gently to steeply undulating, with loose sandy rises and firmer sandy or sandy-loam flats. The rises run in a distinct east-west direction, roughly parallel, following the direction of the prevailing winds.

This landscape merges into small areas of typical "plain country" in the west of County Albert. Here, the shallow brown soils lie over heavy deposits of loose or sheet limestone, growing sparse and stunted eucalypts but a good cover of native grasses.

The vegetation is predominantly mallee eucalypt throughout the district, with scattered patches of native pines and sheoaks. This changes to eucalypt, broombush and honeysuckle mixture in the south of County Chandos, where the soils are a sandy-over-clay type and the rainfall is higher.

Rainfall

Rainfall is very important to agriculture in the Murray Mallee because of low averages and extreme seasonal differences.

Annual averages range from 8½-9in. in the north, and up to 16-17in. in the southern parts. The unreliable seasons are more pronounced in the northern half, where totals of 6-20in. may occur in a year. The southern areas have a steadier rainfall and more assured seasons.

There is a distinct winter incidence of rain throughout—about 70 per cent falls in the April-October period. Summer rains are spasmodic; these are usually heavy falls that occur in thunderstorms.

Soils

The soils are loose and course, and can be divided into stony mallee, sandy mallee, loamy mallee and solodized solonetz.

The zones shown on fig. 1 very broadly outline the distribution of these soil types; there is no clear-cut line between any two types and a transition from one to the other is common.

The stony mallee soils form the greater part of Zone 1, where they predominate through the centre of the zone.

Having shallow red-brown loam over large quantities of loose or sheet limestone, cultivation of these soils is mostly impossible. Furthermore, with narrow sandy rises running through them, they present considerable erosion and some management problems.

The sandy mallee soils are prevalent throughout the other four zones, in which they are associated with small areas of loamy mallee.

Zone 2 has an undulating land system of loose, red sand rises and firm sandy flats, but runs into flatter areas of brown loam and some loose stone in the north-east.

Although similar, the sand rises of Zone 3 are sharper, and are interspersed

The typical stony mallee soils found in Zone 1. These are used solely for grazing.

with smaller areas of flats. Zone 4 is a transition area between the reddish sands of the north and the grey-white sands of the south.

The soil type in Zone 5 is mainly gently undulating white sand, but sharp rises often occur. Small areas of firm brown loams occur through the centre of this zone, whilst the mallee sands run into a sand over clay and deep white sand mixtures along the southern fringe of the zone.

Water Supplies

The Murray Basin supplies good underground water over three-quarters of the district. The north and west of Zone 1 and north of Zone 2 have very limited areas of supply, and even then the water is often too saline for use. These districts are supplied with reticulated water from the River Murray by schemes at Waikerie, Woolpunda and Loxton.

Ample supplies of good quality water that meet all requirements for both domestic and stock use, can be found at depths of 150-250ft. in the rest of the Murray Mallee.

The water is pumped to the surface by windmills on the majority of farms, but a few larger motor-driven pumps have been installed to provide water for small irrigation schemes.

The soils are generally not suitable for surface dams, and only in small areas with clay subsoil in Zone 5 are dams used for water catchment.

Farm Size

Rainfall and soils suitable for cropping have determined farm size. In Zone 1, from the large areas of stony mallee soils which cannot be cultivated, properties of 5,000 to 15,000 acres have been developed. These are used almost entirely for grazing.

In the rest of Zone 1, and in Zones 2 and 3, where the soils are all arable and are in the 9-12in. rainfall belt, properties are 2,000-4,000 acres, with an average of 2,500 acres.

Slightly smaller properties are found in Zone 5; these vary between 1,200-2,500 acres. However, in the extreme south of Zone 5, where soils again become less suitable for cropping, the properties are 2,000-5,000 acres.

Land Values

Generally, land values have been based on soils, rainfall and farm improvements, and except for Zone 5, such things as situation near townships, roads or reticulated electric power have had little influence. Just the same, the importance of these factors could spread to the other zones in the future.

Grazing land on stony soils brings about £2 an acre, whilst the arable areas of Zones 1, 2 and 3 sell for £3-£6 an acre. Values in Zone 4 vary a little, the more sandy areas are £2-£3 an acre, and £4-£6 an acre is paid for the sandy loams in the 12-13in. rainfall belt.

Values in Zone 5 have risen sharply in recent years, with well developed properties bringing £25 or more an acre.

TYPE OF PRODUCTION

Crops

Cereal crops have been the main source of income since the Murray Mallee was opened up. Wheat and barley make up 90 per cent of crops sown, and small acreages of oats and cereal rye are usually grown for purposes other than grain. About 60-70 per cent of the area cropped is wheat in the northern districts (Zones 1, 2 and 3), whilst wheat and barley are each 50 per cent in the southern districts.

Lack of a barley variety suitable to the light rainfall and short season, has forced farmers to concentrate more on wheat in Zones 1, 2 and 3. The introduction of the barley variety, Noyep, could change this situation.

As a rule, barley is sown on the lighter sands, and wheat on the loamy flats in the southern district. Oats have been sown for fodder conservation—either cut for hay or reaped for grain storage. This is similar in all zones.

Cereal rye, because of its vigorous growth, has been widely sown on the steeper sandy ridges where there has been a need for soil stabilization. The acreage is gradually decreasing as the erosion hazard becomes less, and because rye is being replaced by Noyep barley in many cases.

Rotations

There has been an increase of 30 per cent of land cropped and a 3 per cent increase in the land occupied in the 1953-62 period. This increase occurred in Zones 3 and 4, where new land has recently been cleared for production. The land is now being cropped more often than 10 years ago.

On the smaller properties of 3,000 acres or less which are fully cleared and growing legume pastures, the owners are sowing a grain crop every third or fourth year.

But on the larger properties with their poor pastures and in many instances, scrub development, cultivation and cropping are more widely spaced to 6-8 years between crops. In those instances where cultivation and cropping are used as a means of finally clearing newly developed land, two or three crops are grown in four years.

Fertilizers

In their natural state, all soils in the Murray Mallee are grossly deficient in phosphate and nitrogen.

Some of the cereal harvest has to be temporarily stored on farms before delivery to silos. This is one method of holding the grain.

Unfortunately, superphosphate applications have been extremely low, sufficient only has been applied to meet the cereal crop requirements.

In Zones 1, 2, 3 and 4, most farmers apply only 60-90 lb. superphosphate an acre with the crop. On the other hand, in Zone 5, it is common to find up to 140 lb. applied with the crop, and then the pastures are topdressed as well. Current usage of superphosphate indicates that the average application has been 8-15 lb. an acre a year in Zones 1, 2 and 3, and up to 35 lb. an acre a year in Zones 4 and 5.

Lack of a suitable annual legume for both light soils and an uncertain rainfall, has not encouraged heavier use of superphosphate.

During the past few years, more nitrogenous fertilizer has been applied to encourage vigorous early growth of cereals sown on sandy soils of low fertility. Most frequently, 112-160 lb. 3 : 1 mixture of superphosphate/ammonium sulphate has been used, although urea has been tried in a few places.

Pastures

The annual legume, barrel medic, has had very limited success on the sandy soils and in the short growing season of the more northern Zones 1, 2 and 3. Poor establishment techniques, no superphosphate and wide rotations have not helped this species persist. Only on the sandy-loam soils of the small, well managed properties, has barrel medic persisted, and been of value as feed and a soil fertility builder.

For this reason, woolly burr medic, barley grass and spear grass on the "plains" soils, are still the major pasture plants in the northern zones. On the other hand, barrel medic has been more successful in the southern districts, particularly on the loamy soils of Zone 5, and here it has helped boost and maintain steadier production.

The recent release of two medics, harbinger and barrel 173, has opened up a big potential for the Murray Mallee. Since both are suited to sandy soils, and harbinger particularly to short seasons, they can give tremendous boosts to soil fertility, crop yields and livestock production.

Lucerne has been widely sown in the northern parts of the district, because up to the present, it has been the only legume available that would do well on the sandy soils. Unfortunately, haphazard seeding techniques and heavy first year grazing have led to many failures.

Where it is established and managed well, lucerne produces for 8-9 months in many years and provides excellent quality greenfeed.

This legume is not widely sown in the southern districts, mainly because it is not well suited to the soils with shallow clay subsoils.

To provide feed in the winter, farmers in the northern parts have made a valuable adaptation with early varieties of oats and barley. Usually sown before the "autumn break", these cereals provide a bulk of winter feed in the absence of a suitable grass species.

Wimmera rye grass is the only sown annual grass to have persisted in the district, and then only in the southern areas with their longer seasons. Production from this species is obtained mainly in late winter and spring, and it is mostly cut for hay or used as a dry feed.

Two perennial pasture plants perennial veldt and evening primrose, have been used to a limited extent for specific purposes.

Livestock

Wool is the main product, and with sales of lambs and older sheep, would provide more than 95 per cent of the income from livestock.

Sheep numbers vary in the more northern areas according to the season

The Murray Mallee can produce annual legume pastures like this stand of barrel medic 173. Harbinger medic also has a very big future in the district.

Big-framed ewes that are well suited to the Murray Mallee. Barrel medic pods provide quality forage during late summer and autumn to keep the sheep in good condition.

and available feed. Most of the property owners there run more breeding ewes than dry sheep. The ewes are often mated before purchase; they lamb in April-June and are sold in August-October if the season is not good. Only a few farmers breed their own replacements and maintain steady numbers.

Carrying capacity in the northern section is one sheep to 5-6 acres, and wool weights are often low—9-11 lb. a head. Zone 4 is similar in carrying capacity, but Zone 5 carries one sheep to the acre, because of its better pasture and management.

Beef cattle are run as a small sideline to sheep on some farms in the southern districts, whilst from a few dairy cattle, a milk supply is obtained for the larger towns.

Pig numbers have risen rapidly; many farmers run a small number, about 5-10 sows, because they have home grown feed available. Prices have been good and they bring in a steady income.

Horticulture

Horticulture is an important industry and is confined to small acreages. Entirely irrigated, production areas extend along the River Murray, and are concentrated within 2 miles of the river.

Citrus, vines, peaches and apricots are the most important crops, while vegetables and cucurbits make up very small acreages.

In the past 10 years, there has been a big but steady increase in the acreages of fruit trees planted. Plantings are still continuing and general production, particularly citrus, should rise substantially in the next few years.

PROBLEMS

Wind Erosion

For many years, soil erosion placed a heavy stigma over the Murray Mallee. This was the outcome of extreme erosion in the 1920's and 30's, when many properties were masses of drifting sand. Fences and roadways were buried and production dropped.

With better knowledge and hard work applied in the 1950's, erosion has been much better controlled. Less severe cultural practices, the widespread use of cereal rye, more fertilizer, better subdivision and lucerne have all been put together to first stabilize the drifting areas, and then improve their production. Perennial veldt grass has been established on the steeper sandhills which are non-arable.

The area considered still dangerous, has been reduced to small acreages on some 60 farms. The soils will always be sandy, and it will need the continuance of the lessons learnt, in particular, minimum cultivation and good ground cover, to allow the sandy soils to improve their production.

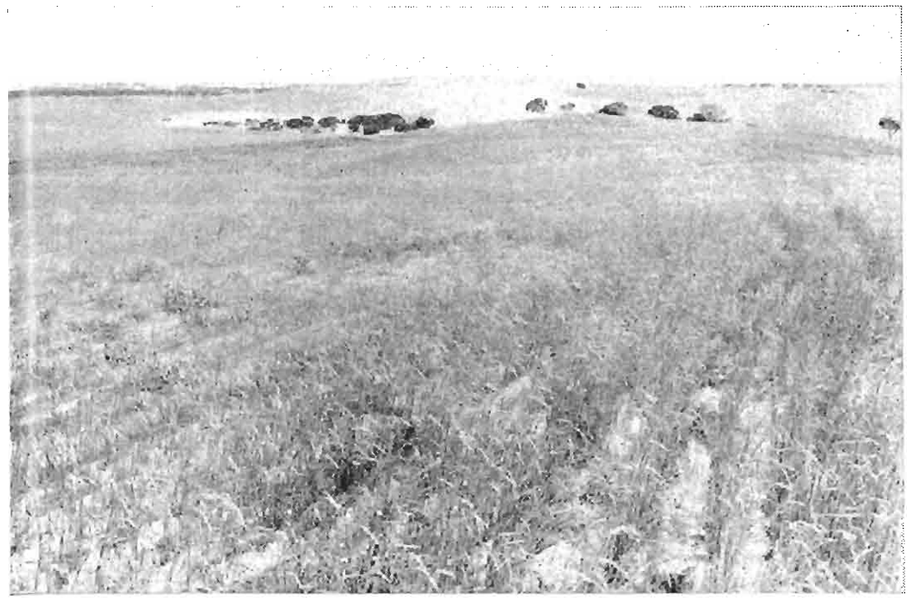
Weeds

Skeleton weed looms as a threat to agriculture in the district, following its rapid spread throughout, in the past 15 years. Every property in the Murray Mallee has this weed to some degree—it mostly occurs in small patches in all paddocks.

The effect on production can be seen in the southern districts, where whole paddocks are completely infested. As a result, cereal cropping has become almost impossible, reducing grain yields by more than half and smothering pastures.

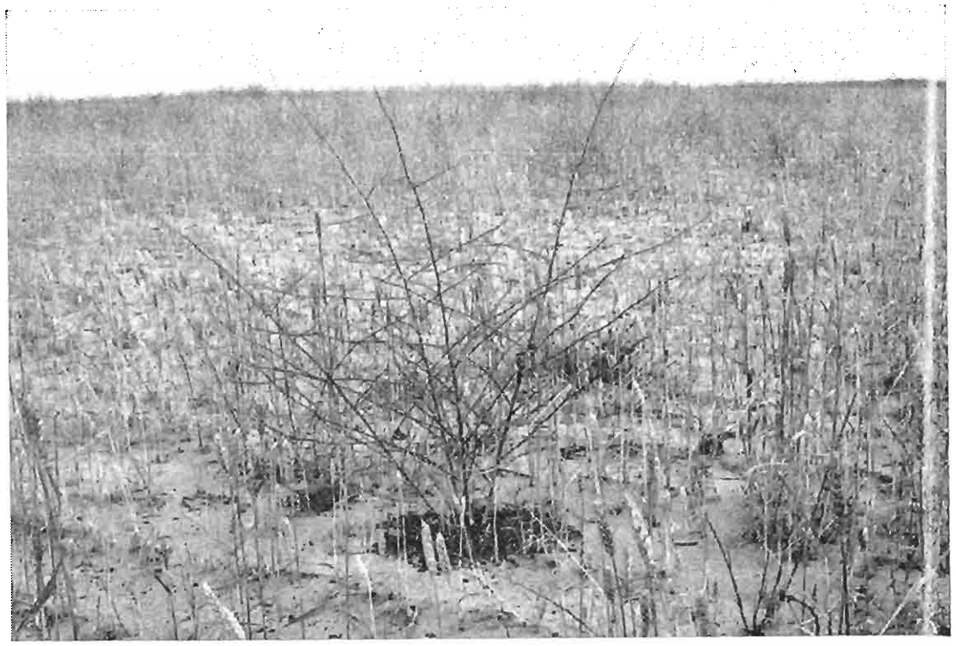
As yet, the danger of this weed has not been fully appreciated, nor has adequate action been taken. Control measures have to be constantly applied to keep it in check and prevent it from spreading.

Onion weed, false caper, salvia and horehound occur throughout all zones, but can be controlled with well-timed cultural practices and pasture competitions. Innocent weed and caltrop, whilst only a minor worry, are spreading in all zones and will have to be watched.

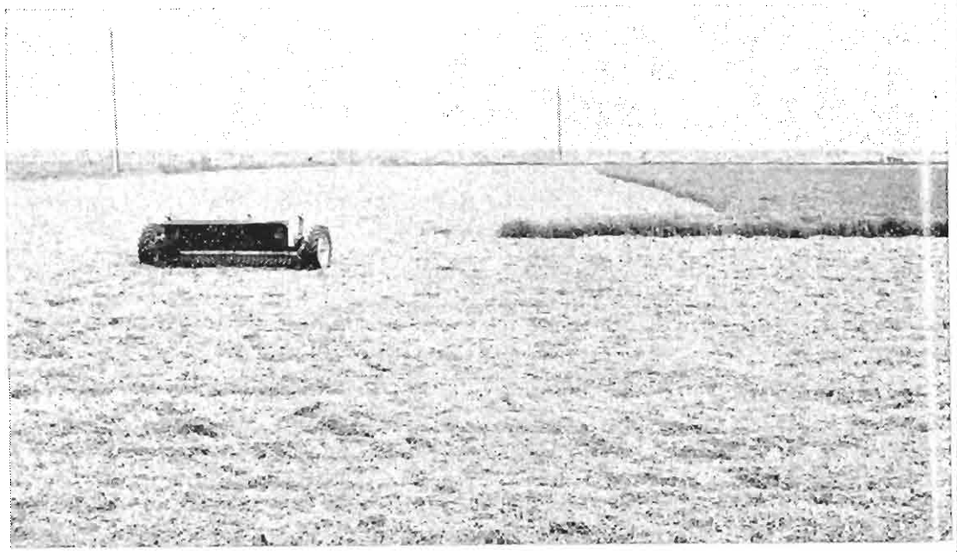


More fertilizer, better subdivision and crops of cereal rye such as this have all contributed in the problem of overcoming wind erosion.

Perennial veldt grass has helped control wind erosion on steeper, non-arable sandhills.



Skeleton weed—the biggest threat to cereal production in the district. Note how the severe competition from this one plant has reduced the growth and potential yield of the surrounding area of crop.



With irrigation, lucerne hay production could increase.

Saffron thistle has also increased in recent years, and together with wild turnip, have made it necessary to spray most cereal crops.

District farmers require a better appreciation of cultural practices, pasture competition and weedicides, to adequately control and prevent the spread of most of these weeds.

Plant Disease

The fungus diseases take-all (or hay-die) and rhizoctonia, in addition to eel-worm, are widespread in the district. Last year, 1964, favoured the incidence of take-all and caused some heavy losses in all zones.

A trace of loose smut can be found, but again is not of much importance.

POTENTIAL

Soil Fertility

All zones have a tremendous scope for improving soil fertility. The establishment and management of vigorous legumes and heavier applications of superphosphate are the main steps involved.

With the introduction of harbinger medic and barrel medic 173, there are now annual legumes to suit the soils and rainfall of the area. Both annual and perennial legumes have a place on all properties. The perennial, lucerne, is best sown as a "permanent" pasture for 6-10 years, whilst medics thrive on a closer cropping system.

However, these pastures do not grow vigorously without adequate superphosphate. In this district, with established pastures, economic results can be achieved from rates of 35 lb. an acre a year of superphosphate in a 10in. rainfall, and up to 60 lb. an acre a year in 14-15in. rainfall districts.

Superphosphate and legumes provide the biggest increase in production by raising soil fertility levels, and hence, increasing stock numbers and crop yields as well as controlling the spread of weeds.

Land Use

Lucerne, the annual medics and grasses must be managed differently. A better understanding of the growth habits of these pastures is needed; their preference for soils, their establishment, cultivation, fertilizing and grazing. This naturally, must be accompanied by closer sub-division and better provision of water, which in turn allows better farm management and gives increased production.

In recent years, the biggest gains have been made on the properties of about 2,500 acres. Owners of these properties have clearly shown the potential of the Murray Mallee.

Alternate Land Use

A cereal-sheep farming system appears ideal for the district's conditions, and there are not any major alternatives to this. Sidelines of poultry, pigs and beef cattle may be further increased.

However, several alternatives can be tried on properties that can be partially irrigated because they are close to the river, and on the few properties throughout the district that have small irrigation schemes from underground water.

There is a potential for increased areas of irrigated lucerne for both hay and meal production. The soils and climate favour a long growing season and high yields can be expected.

Recently, there has been an upsurge in the demand for pasture seeds. Irrigated production of these seeds can return high yields and offer scope along the river.

Irrigated areas along the River Murray are also admirably suited to horticulture, and there is scope for further extensions to present plantings.

THE MURRAY MALLEE

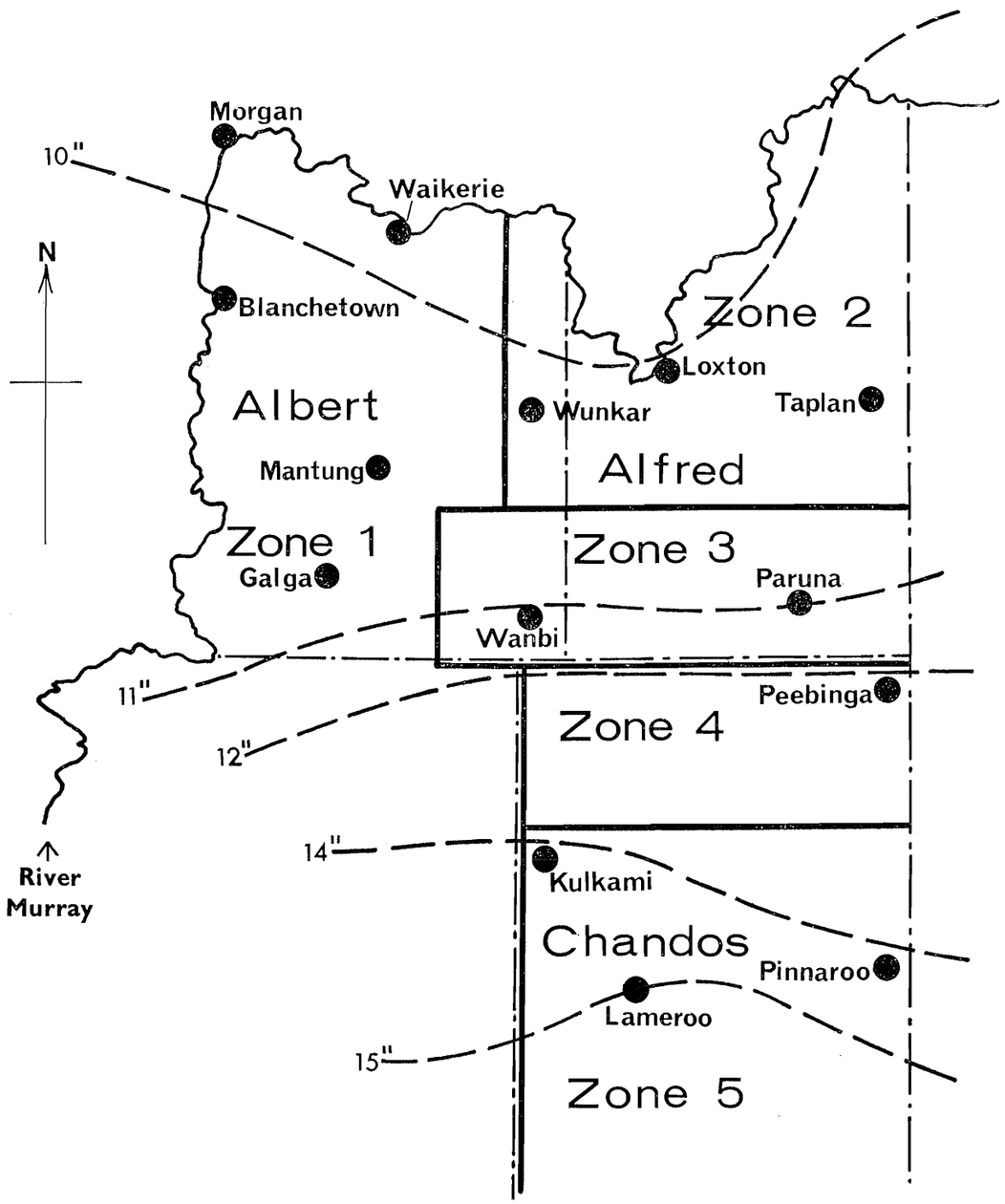


Table 1—HOLDINGS

	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62
COUNTY ALBERT										
Number	807	805	810	766	756	808	812	807	853	908
Acres	1,338,724	1,359,476	1,367,428	1,276,478	1,311,222	1,302,998	1,424,714	1,325,442	1,336,177	1,347,311
Average Acres	1,659	1,688	1,688	1,666	1,734	1,612	1,754	1,642	1,566	1,483
COUNTY ALFRED										
Number	601	635	737	699	692	721	726	734	743	756
Acres	974,967	977,754	927,524	896,611	891,119	917,475	934,648	924,867	920,501	921,535
Average Acres	1,622	1,539	1,258	1,282	1,282	1,272	1,287	1,260	1,238	1,218
COUNTY CHANDOS										
Number	477	466	476	436	421	426	431	436	436	430
Acres	1,022,667	1,007,178	1,188,143	1,055,053	997,015	1,006,574	1,003,517	1,016,478	1,085,561	1,110,767
Average Acres	2,143	2,161	2,496	2,419	2,368	2,362	2,328	2,331	2,489	2,583

Table 2—HORTICULTURE (Acreages of Crops)

	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62
COUNTY ALBERT										
Orchards	2,622	2,687	3,039	3,173	3,256	3,890	4,263	4,569	5,047	6,405
Vines	3,307	3,529	3,424	3,496	3,279	3,293	3,441	3,480	3,679	3,689
Root Crops	3	5	11	7	6	2	2	8	25	26
Other Vegetables	98	75	125	221	261	230	153	336	369	363
COUNTY ALFRED										
Orchards	1,829	2,357	2,873	3,371	3,995	4,513	4,806	5,054	5,194	5,829
Vines	2,897	3,701	4,169	4,293	4,285	4,251	4,230	4,260	4,283	4,394
Root crops	21	19	28	31	26	23	15	20	49	72
Other Vegetables	473	487	925	1,138	1,759	1,204	1,118	1,063	1,435	1,439

Table 3—GENERAL

Zone	Rainfall	Soils	Water Supplies	Farm Size	Value of Farms
1	8½in. in north to 11½in. in south	Stony plains in west, then stony soils with arable sandy rises	Reticulated supply in north. Underground in south.	3,000 to 4,000 acres where mainly arable ; up to 15,000 acres on stony soils for grazing. Smaller irrigation areas—up to 100 acres.	£2-£3 for stony soils, up to £6 for arable soils.
2	9in. in north to 10½in. in south	Light red sandy rises and firm sand or sandy loam flats.	Some reticulated supplies in the north ; adequate underground supplies elsewhere.	From 2,000 to 5,000 acres, all arable. Small irrigated blocks—10-100 acres.	£3-£7 per acre.
3	11in. to 12in.	Similar to 2, with sharper rises and smaller flats.	Adequate underground water at 150-200ft.	3,000 to 5,000 acres. Some development still going on.	£3 -£7per acre.
4	12in. to 14in.	Mixture of red and grey-white sands in sharp rises and small flats. Not all suitable for cropping.	Good underground water supply.	3,000 to 5,000 acres.	£2-£5 per acre.
5	13in. to 16in.	White sandy mallee in north. Small pockets of firm brown loams. Sand over clay in south.	Good underground water supplies.	1,200 to 5,000 acres.	Up to £25 per acre.

Table 4—PRODUCTION

Zone	Crops	Rotation	Fertilizers	Pastures	Special Crops	Livestock
1	Wheat and barley ; oats for grazing and fodder conservation.	Native pastures on stony soils. Arable soils cropped with cereal every 4-6 years.	From 60-112 lb. with the crop. No pasture topdressing Some 3 : 1 superphosphate/sulphate of ammonia being used with rye on bad sand rises.	Native grasses. Small area of barrel medic and lucerne.	Lucerne and horticultural crops under irrigation.	Sheep mainly, sidelines of pigs and poultry.
2	As for 1.	Cereal cropping 3 to 5 years. Some drilling of oats. Barley for grazing.	From 60 to 112 lb. with crop. Some pasture topdressing 3 : 1 superphosphate/sulphate of ammonia at 1cwt. per acre sown with rye.	Native pastures, barrel medic and lucerne. Lucerne sown regularly under crop.	As for 1.	Mainly sheep ; some beef and dairy cattle near markets. Sidelines of pigs and poultry.
3	As for 1.	As for 2.	As for 2.	As for 2.	Lucerne and seed production by irrigation from isolated bores.	As for 1.
4	Barley, wheat and cereal rye. Little oats sown.	Variable. Some consecutive cropping for development.	90 to 112 lb. with crop. 3 : 1 superphosphate/ sulphate of ammonia used on sand rises with rye and barley.	Native grasses lucerne and small areas of barrel medic.	Nil.	Sheep.
5	Barley and wheat equally. Oats for grazing, hay and grain. Rye on bad sand rises.	Cropping 2 to 4 years on the heavier loams and 3 or 4 years on the sandy soils. On new development in the southern portion, rotations are variable.	112 to 160 lb. with the crop. Paddocks often topdressed once with 40 to 80 lb. superphosphate.	Barrel medic and Wimmera rye grass established on the more loamy soils. Burr medic and native grasses elsewhere. Lucerne on some sandy rises.	Nil.	Mainly sheep ; few beef cattle. Pigs and poultry side-lines.

Table 5—PROBLEMS

Zone	Weeds	Cereal Diseases	Erosion	Trace Elements
1	Skeleton weed spreading rapidly. Onion weed, horehound and saffron thistle cover large areas. Saffron thistle increasing. Odd patches of tomato weed and innocent weed.	Generally not a worry. Eelworm, hay-die and rhizoctonia present.	Wind erosion bad in some areas. Careful management needed.	No deficiencies as yet on dry land. Potassium, copper, zinc on irrigated land.
2	Skeleton weed is very bad and spreading. Onion weed, salvia, ialse caper. Saffron thistle increasing quickly ; also innocent weed, caltrop and horehound ; Californian burr along river.	As for 1.	As for 1	As for 1.
3	As for 1.	As for 1.	Wind ersosion a real problem throughout. Care needed to maintain maximum soi ' cover.	No problem.
4	Skeleton weed and saffron thistle mainly. Very small areas of onion weed, salvia and horehound.	As for 1.	As for 3.	No problem.
5	Skeleton weed, saffron thistle. Small areas of onion weed, innocent weed, caltrop, horehound and sheep weed.	As for 1.	As for 1.	No problem.

Table 6—WHEAT

	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62
COUNTY ALBERT										
Acres	59,207	59,049	74,614	74,370	67,082	55,083	57,640	35,068	92,560	109 758
Yield, Bushels	653,268	541,425	835,597	575,265	882,621	154,642	715,818	113,007	1,233,975	1,019,106
Yield, Bushels/Acre	11.03	9.17	11.20	7.74	13.61	2.81	12.42	3.22	13.33	9.29
COUNTY ALFRED										
Acres	93,273	93,237	109,909	100,131	95,876	84,015	79,501	72,184	102,393	110,196
Yield, Bushels	1,072,254	1,013,346	1,395,546	1,074,408	1,351,429	349,124	865,590	378,306	1,432,737	1,140,330
Yield, Bushels/Acre	11.44	10.87	12.70	10.73	14.10	4.16	10.89	5.24	13.99	10.35
COUNTY CHANDOS										
Acres	57,891	56,933	64,520	60,282	50,259	46,384	47,123	52,854	72,006	96,674
Yield, Bushels	1,275,159	1,138,693	1,225,185	1,042,896	1,174,994	556,203	884,757	479,610	1,544,391	1,544,922
Yield, Bushels/Acre	22.03	20.00	18.99	17.30	23.38	11.99	18.78	9.07	21.45	15.98

Table 7—2 AND 6 ROW BARLEY

	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62
COUNTY ALBERT										
Acres	20,118	26,853	24,426	22,973	30,761	29,932	32,460	23,524	47,187	33,562
Yield, Bushels	308,620	344,761	252,943	248,198	524,168	100,163	673,081	131 242	875,897	422,263
Yield/Acre	15.34	12.83	10.35	10.80	17.04	3.34	20.73	5.57	18.56	12.58
COUNTY ALFRED										
Acres	25,966	31,171	23,179	26,372	36,312	33,870	37,572	29,545	48,015	33,015
Yield, Bushels	348,238	408,854	259,385	319,783	502,975	141,068	569,467	145,176	770,385	369,772
Yield/Acre	13.41	13.11	11.19	12.12	13.85	4.16	15.15	4.91	16.04	11.20
COUNTY CHANDOS										
Acres	68,500	77,305	68,023	74,175	85,327	82,413	85,827	85,367	88,093	68,301
Yield, Bushels	1,516,269	1,691,263	993,055	1,459,395	2,036,233	969,236	1,978,495	806,100	2,108,958	1,391,392
Yield Acre	22.10	21.70	14.59	19.60	23.80	11.73	28.60	9.44	23.90	20.30

Table 8—OATS FOR GRAIN

	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62
COUNTY ALBERT										
Acres	8,344	7,720	8,542	10,964	14,758	11,220	6,978	8,488	11,489	6,499
Yield, Bushels	91,410	67,650	77,131	92,277	192,756	18,692	176,690	10,625	173,069	68,746
Yield/Acre	10.95	8.76	9.02	8.41	13.06	1.66	25.3	1.25	15.06	10.57
COUNTY ALFRED										
Acres	8,451	8,410	9,079	9,099	12,386	11,387	10,495	8,900	13,080	6,296
Yield, Bushels	82,386	75,231	79,124	77,214	140,339	25,796	116,134	28,312	166,702	61,421
Yield/Acre	9.75	8.94	8.71	8.49	11.33	2.26	11.06	3.18	12.74	9.75
COUNTY CHANDOS										
Acres	8,386	5,015	7,143	8,803	8,206	7,910	9,008	8,559	8,812	4,475
Yield, Bushels	121,129	68,001	73,246	126,726	127,641	61,410	185,327	35,133	147 087	58,424
Yield/Acre	11.4	13.55	10.25	14.30	15.50	7.76	20.50	4.10	16.60	13.05

Table 9—PASTURE TOP-DRESSING

	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62
COUNTY ALBERT										
Acres	1,300	2,151	5,165	9,724	8,641	12,609	3,738	2,981	4,067	2,248
Tons	31	69	167	356	301	431	161	104	143	86
Lb./Acre	53	72	72	82	78	77	96	78	79	86
COUNTY ALFRED										
Acres	2,125	1,978	1,501	4,616	4,210	6,781	2,175	2,667	3,363	1,636
Tons	65	56	85	154	154	237	128	125	130	74
Lb./Acre	69	63	127	75	82	78	132	105	87	101
COUNTY CHANDOS										
Acres	26,790	33,194	35,085	37,371	43,749	57,118	47,123	31,531	27,835	26,065
Tons	1,180	1,500	1,496	1,683	1,853	2,494	1,756	1,336	1,064	1,034
Lb./Acre	99	101	96	101	95	98	83	95	86	89

Table 10—SHEEP AND WOOL

	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62
COUNTY ALBERT										
Sheep No.	197,520	177,408	203,742	190,648	224,476	189,751	197,375	179,908	196,727	237,823
Sheep Shorn	221,636	198,537	213,215	210,493	230,335	243,131	197,839	214,732	197,959	237,318
Wool Clip (lb.)	2,311,724	1,904,862	2,187,617	2,200,007	2,441,139	2,347,533	1,951,915	2,216,652	2,092,962	2,465,937
Wool/Head (lb.)	10.4	9.6	10.3	10.5	10.6	9.7	9.9	10.3	10.6	10.4
COUNTY ALFRED										
Sheep No.	145,489	138,911	151,785	143,342	172,681	161,639	153,326	155,462	159,181	184,068
Sheep Shorn	149,313	132,038	155,862	162,307	155,854	191,308	160,429	176,632	156,614	175,533
Wool Clip (lb.)	1,737,822	1,429,383	1,586,727	1,718,517	1,629,297	1,921,039	1,640,159	1,846,034	1,704,482	1,919,670
Wool/Head (lb.)	11.6	10.8	10.2	10.6	10.5	10.0	10.2	10.5	10.9	10.9
COUNTY CHANDOS										
Sheep No.	212,539	207,513	225,810	233,570	278,100	269,031	267,286	229,495	271,498	333,335
Sheep Shorn	231,388	230,560	248,740	266,211	294,418	327,911	290,965	282,493	275,701	355,817
Wool Clip (lb.)	2,798,000	2,400,172	2,685,100	3,042,165	3,462,986	3,365,990	3,262,085	3,076,916	3,025,878	3,962,977
Wool/Head (lb.)	12.1	10.4	10.8	11.4	11.8	10.3	11.2	10.9	11.0	11.1

N.B. Sheep shorn includes lambs.

Table 11—CATTLE NUMBERS

	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62
COUNTY ALBERT										
Beef	848	724	842	752	792	580	93	191	529	1,095
Dairy	1,594	1,625	1,663	1,569	1,610	1,562	2,056	2,083	2,268	2,312
Total	2,442	2,349	2,505	2,321	2,402	2,142	2,149	2,274	2,797	3,407
COUNTY ALFRED										
Beef	1,032	1,113	1,226	1,165	1,460	1,171	673	704	1,023	1,290
Dairy	1,542	1,477	1,619	1,538	1,612	1,413	1,819	1,944	1,985	2,135
Total	2,574	2,590	2,845	2,703	3,072	2,584	2,492	2,648	3,008	3,425
COUNTY CHANDOS										
Beef	786	730	699	774	923	1,028	296	250	404	1,297
Dairy	1,525	1,408	1,306	1,312	1,439	1,383	1,756	1,716	1,826	1,966
Total	2,311	2,138	2,005	2,086	2,362	2,411	2,052	1,966	2,230	3,263

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