A Brief History

of the

Department of Agriculture

in Loxton

(now incorporated into Primary Industries and Resources SA)

Compiled by:

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Loxton

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The Early Days

The Department of Agriculture has had a presence in Loxton since 1947 when a Stock Inspector (Mr Rhys Roberts) transferred to Loxton to assist with the Pleura-Pneumonia Eradication Program. A second officer (Mr William Brownrigg) transferred to Loxton from Streaky Bay in 1951 to take up the position of Agricultural Adviser for the Northern Murray Mallee. As there was no office established at that time, both officers worked from home. Prior to the presence of these officers the farming community were serviced by staff stationed at Karoonda.

The establishment of the Loxton War Service Land Settlement Scheme at Loxton in 1948 created a need for horticultural production advice to be provided for the new settlers. Initially this service was provided on a part-time basis by Mr Cecil Grasby (affectionately referred to as 'old Gras') who was stationed at Berri and Mr Milton 'Spike' Spurling who provided a part time consulting service to growers from Adelaide. Mr Grasby subsequently transferred to Loxton in 1951 and was located in the Department of Lands complex on the corner of Anzac Crescent and Kokoda Terrace. Mr Bruce Hall (who replaced Mr Brownrigg in 1956) and Mr James 'Chip' Mawby who was appointed as Horticultural Inspector in July 1959 also operated from these premises. Mr Grasby died in office in 1959 and was replaced by Mr Bill Baskett who had been located at the Berri Experimental Orchard.

Early in 1960 staff were relocated to East Terrace in a building now occupied by 'The Loxton News'. In 1962 they were joined by a Soil Conservation Officer (Mr John Potter) and a Receptionist/Typist (Miss Jill Webster). Conditions were extremely cramped, which necessitated staff climbing over one desk to reach another!

The New District Office

Late in 1962 a new Government Office was opened in Kokoda Terrace to house staff from the Department of Agriculture, the Lands Department's Irrigation Office, the Highways' Department and the E & W S Department's engineering section. The move to this new building was most welcome by staff. The Department of Agriculture were allocated five offices, a reception area and two laboratories in the upstairs section of the building. The building boasted fluorescent lighting, Venetian blinds and wall-mounted electric fans and heaters!

The laboratories located in his building were rarely used as such. In the early days one of these laboratories was used as a staff room but as more and more staff transferred to Loxton both were utilised as office space.

Within a few years of moving to the Kokoda Terrace premises the staff were joined by a Weeds Officer, a second Soil Conservation Officer, an Economist, a Plant Pathologist, an Animal Health Adviser, and additional (temporary) Horticultural Inspectors.

Over the years, the Loxton District Office, with its service to both horticultural and dryland farmers proved to be a fertile training ground for about 40 people in total.

The Role of the District Office

The main function of the district office was to provide an advisory and diagnostic service to horticultural growers in the Loxton-Kingston-Moorook area and dryland farmers in the Northern Murray Mallee. Initially areas covered included: irrigated horticulture, agronomy, economics, soil conservation and animal health. Later a Soils Officer (Irrigation), a Vertebrate Pest Officer, a Post Harvest Officer, a Vegetable Extension Officer, and a Dried Tree Fruits Research Officer were located at this site.

Staff at the District Office also performed a regulatory function in fields of export fruit inspection, soil conservation and land clearing, and animal health.

Agronomy /Weeds
The role of the Agricultural Advisers/Agronomists was to ensure farmers in the Northern Murray Mallee achieved optimum results from their farms. Activities included:

- Provision of advice relating to farming methods, cereal and medic varieties, and cropping rotations.

- Provision of a diagnostic service and advice relating to pests and diseases and weed control.

- Assisting farmers with spray boom calibration.

- Establishment of demonstration plots on farmers' properties, including cereal variety trials leading to the promotion and acceptance of 'hard' wheat varieties.

- Together with Soil Conservation Officers and staff at Wanbi Research Centre agronomy staff were instrumental in the adoption of lay cereal farming techniques that improved dryland practices. They developed a crop rotation system based on the advantages of harbinger medic and introduced farm planning that strategically placed fences and watering points for better stock management and improved soil conservation.

  These innovative systems withstood the test of subsequent severe droughts and replaced the less sustainable fallow farming that was so subject to wind erosion and drifting sands. This brought increased and sustainable farm incomes and as a result, lasting economic and indirectly cultural benefits to the region.

- Investigations and demonstrations to explore 'stubble retention' farming methods with improved crop and pasture rotations and tillage equipment. This project led to the formation of the Mallee Sustainable Farming Project involving farmer groups in the Mallee districts of SA, Victoria and south-west New South Wales and has had the most far reaching benefits for sustainable farming in the Murray Mallee environment.

Animal Health
Projects involved with included:

- Control of sheep lice, including inspections at the Loxton Markets.

- Eradication of tuberculosis in pigs.

- Diagnosis and recommended treatments for diseases in sheep, cattle, pigs and poultry.

- Trial for copper and cobalt deficiency in merino lambs in conjunction with staff from Lameroo and Northfield.

Achieved disease freedom in part of Mallee through non-blaming extension approach that was aimed at including farmers in the achievement rather than focussing on regulation and prosecution.

Animal and Plant Protection and Control
The Animal and Plant Protection officer was mainly concerned with measures relating to the control of rabbits and mice and was responsible for the distribution of poisons to landholders during mice plagues. The officer also had an advisory and regulatory role to play in ensuring gazetted weeds were removed from roadsides, landholder's properties and riverfront areas.

Irrigated Horticulture
Horticultural staff were involved with a range of activities to assist fruitgrowers in the area achieve optimum results from their properties. The main areas of activity included:

- Advice relating to cultural methods, cover crops, irrigation and fertiliser requirements, pruning, and drying of fruit.

- Assisting growers with spray plant calibration.
- Provision of a diagnostic service and recommendations relating to pests and diseases, and weed control.

- On-farm demonstrations and trials of various aspects of horticulture production.

- A trial to investigate and pioneer the feasibility of 'water-on-order' in the Kingston area (as opposed to irrigating on a roster system according to location on a channel). This concept was further refined to reach what has become 'water on demand' throughout the Riverland area.

- Together with staff from other Riverland offices published a handbook entitled 'Redevelopment of Vineyards' which assisted growers to change from unwanted grape varieties to those more in demand by wineries.

Economics
Economists operating from Loxton Office were involved with projects associated with both horticulture and dryland farming. Activities included:

- Development of Gross Margin analyses for a range of crops and varieties.

- Production of 'Horticulture Costs and Returns' which for a number of years was prepared as a supplement to 'The Murray Pioneer'. This publication included a series of tables to assist growers with their budgets and detailed the cost of inputs and anticipated returns for produce.

- Together with Horticultural Advisers and Co-operative Wineries undertook a successful campaign to encourage growers to replant to preferred varieties.

- Undertook an economic impact study of horticulture redevelopment from a grower's perspective.

- Established farm and horticulture business financial analysis system using a computer spreadsheet.

- Prepared an economic insight into the Rotation and Tillage Trials being conducted on Mr F Maynard's property at Lameroo by Dr Bob Fawcett from Northfield.

Export Fruit Inspection
Export Fruit Inspection staff were employed to inspect fruit prior to loading for export to ensure it was true to label, free from disease and pests and the required post-harvest treatments had been applied. These activities were vitally important since they allowed/secured access to overseas and interstate markets.

Staff also provided certificates relating to the movement of plants and fruit to and from interstate. This function ensured that packers and producers complied with the specific requirements of other states and also enabled the introduction of premium clones and other nursery material that form the basis of modern-day Riverland horticulture. The role of providing certification of fruit for export was transferred to the Australian Quarantine and Inspection Service (AQIS) in 1992.

Post Harvest
Post Harvest Officer was involved with investigating and demonstrating methods for continuing the life of fruit after harvest.

Projects included:

- Trials to determine the optimum methods, drying times and rates of sulphur required to produce a high quality dried stonefruit product. Activities included comparisons with both hand-cut and machine cut fruit.

- Trials relating to the cool storage and chemical treatment of citrus, stonefruit and pomefruit. These activities became extremely important and timely as the export of fruit to overseas countries increased.

Soil Conservation
Projects undertaken by Soil Conservation Officers included:

- A comprehensive extension program undertaken in early 1960s by the Soil Conservation Officer and the Agricultural Adviser aimed at informing farmers of new opportunities to control soil erosion and improve profitability. Recommendations incorporated into this campaign included: abstinence from fallowing; cropping on a three year rotation; introduction of Harbinger medic; increased applications of superphosphate; improved fencing and location of water points.

- Soil surveys of dryland and irrigated agriculture – a very significant role in determining which crop was best suited to each location.

- Together with Horticulture Advisers assisted with the transformation of irrigation methods through the development of a pycnometer for measuring air space in vine soils. This and other innovations led to a change in irrigation practice and greatly improved vine growth and production in the Riverland.

- Detailed Soil Surveys methodology for assessing new and existing irrigation projects. This led to the method presently undertaken by the ICMS survey group and is used throughout Australia and parts of Europe.

- Carried out inspections and provided recommendations relating to the administration of the Soil Conservation Act which required landholders to undertake specific land-use measures to prevent soil erosion and to seek permission to clear land.

- In 1988 a project funded by the National Landcare Program entitled 'Murray Mallee Farm Management Project' was established at Loxton. The aim of the project was to increase the adoption of conservation farming techniques and the recognition of farming to land capability. Activities involved working with eight case study farms to understand their economic performance and demonstration trials about no-till and conservation farming.

  Other aspects of the project included pioneering wind erosion research in the SA Mallee using a wind tunnel, awareness through a fortnightly production 'On the Land' television and radio shows and technical support to the Loxton, Paringa, Lowbank and Browns Well Agricultural Bureau groups, Executive Officer support to the Murray Mallee District Soil Conservation Board and co-ordination of field days, seminars and workshops about the project.

  The project resulted in substantial changes in land use, with a large percentage of northern mallee farmers now practicing no-tillage techniques.

Vegetables

The Vegetable Extension Officer worked in close conjunction with the research officer located at the research centre to continue to innovate, develop and promote a range of vegetable crops that had previously been either un-tried in the Riverland or their production limited to small acreages. These included an array of vegetables now commonplace such as butternut pumpkins, several melons and a range of different squash, eg button squash.

Administrative Support

Administrative support was first provided in 1962 when staff were located in the East Terrace building. The first Typist/Receptionist appointed was Jill Webster. Within 12 months of her appointment Jill moved away from the district and was replaced by Pat West. As staff numbers were relatively low at that time, Pat recalls how she would fill in her time by undertaking typing tasks forwarded from head office each week – a bundle of work would arrive each Monday which would then be completed and returned each Friday. This practice continued for a number of years but ceased early in the 1970's as the number of staff appointed to Loxton Centre increased and required clerical support.

Other permanent officers to provide administrative assistance to the District Office were: Di Warner (Miller), Sharon Haynes and Karina Tschirpig (Viney).

With the arrival in 1978 of the Regional Management team who were also in need of administrative support a significant amount of assistance was provided to the district office by staff from the E & W S Department until a second administrative officer was appointed in 1986.

Closure of the District office

The early 1990s saw a reduction in the number of staff located at the district office due to a general down-sizing of the Public Service, staff reductions, unfilled vacancies and the transfer of the Murray Lands Regional Management group the to the research centre. The remaining staff were transferred to the Loxton Research Centre in November 1994 and the office closed. As other departments vacated about the same time the office block was left vacant for several years until purchased by a private investor who developed it into what is known as the Harvest Trail Lodge.

Loxton Research Centre

The Farm

The Loxton Research Centre was established in 1960 on land that had been set aside for the establishment of a horticultural experimental station and was typical of much of the new irrigation development about that time. It initially featured about 25 acres (10ha) of furrow irrigation and 27 acres (11ha) of sprinkler system installed, with room for a further 20 acres (9ha) of sprinkler watered plantings to be developed. Special design features were included in the irrigation system to meet the particular needs of experimental watering programs.

The first plantings in 1960 were made up of grape vine trials. Stonefruit and citrus trials were planted in 1962 and 1963 as the irrigation system developed.

Mr Richard ‘Dick’ Hilder took up duties as Manager in 1962. As no office facilities had been developed, Richard operated part-time from the District Office and part-time from a ‘tin shed’ at the research centre which also housed field staff. This building later became the base for staff monitoring the ‘Lure Grid’ system which was set up to monitor the presence (or absence) of fruit fly.

To assist with the development of the farm, field staff from the Berri Experimental Orchard, which was in the process of closing, were transferred to Loxton.

Farm Buildings

Considerable development has taken place since the days of the 'tin sheds'. The centre now features an improved field office, a modern workshop, staff facilities, a chemical store and improved storage facilities for farm operations. Other facilities include glasshouses, insectaries and a first-class plant propagation unit. There is an interesting story attached to the building of the insectary. It appears it was required for a project not yet approved by the Minister, so staff from an Adelaide based unit purchased £99 worth of bricks monthly and together with local staff proceeded to construct the building themselves. Strangely enough the building was then officially opened by the Minister!

Research staff

Throughout the 1960s and early 1970s a significant number of research staff were appointed. The first of these Frank Gathercole arrived in 1963 and shared an office with Richard Hilder in the town office. Frank's role was to work on problems confronting the newly-expanding stonefruit industry.

In 1965 an entomologist was appointed as a general consultant and later concentrated on problems associated with stonefruit, eg peach aphid. This work was very successful. A second entomologist was appointed soon after to deal with pests of citrus and other aspects of citrus production. The main emphasis of this research was to pioneer biological control of red scale of citrus with a tiny wasp *Aphytis melinus.* This world-class research was highly successful and led to a significant reduction in the need for insecticides in the citrus industry.

By 1970 the research officers in the fields of Viticulture, Plant Pathology, Nematology and Irrigation and Soils had been appointed along with technical staff to deal with aspects of plant propagation and soil and plant nutrition. This team of young scientists contributed significantly to the development and expansion of horticulture at world standards in the Riverland.

Administrative support

Prior to the re-location of Gordon Hand from the Red Scale Committee (which had ceased to function) in 1967, the procurement of services and supplies was undertaken by staff from the Horticulture Branch in Adelaide. Typing services were provided by the Typist/Receptionist at the District Office until 1973 when the first typist (Maxine Dowley) was appointed to the centre. Since those first appointments the centre has been fortunate in attracting a succession of dedicated administrative officers who have provided a service to staff and the public which is second to none!

Office accommodation

Initially, research staff operated in extremely difficult and cramped conditions. The first office was a converted 5-room fibreboard accommodation building known as the 'pickers' quarters' which housed up to 12 research and technical staff, whilst others continued to operate from 'tin sheds' on the property until the new office and laboratory was established in 1970.

The 'Mill Laboratory'

To alleviate some of the over-crowding which existed at the centre by the mid 1960s, the Department established a laboratory at the rear of Noske's Flour Mill. Initially staff located at this facility which was referred to as the 'Mill Laboratory' provided an analytical service in the field of soil and plant analysis. Other staff to operate from this site included a Horticultural Adviser (Irrigation) and Soils Officer (Irrigation). The 'Mill Laboratory' continued to operate until 1981 when the extensions to the existing office block were opened at Loxton Research Centre.

The New Office and Laboratory

The first office and laboratory was opened on the 30 October 1970 by The Minister of Agriculture, The Hon. T.M. Casey, MLC. The building comprised six offices, three laboratories, a library and a reception area. Although this was a welcome site, it was already too small, as by the time of opening fourteen research officers and technical assistants were associated with the research centre and district research program. Thus, some staff continued to operate from the 'pickers quarters'.

1981 Extensions

It was not until 1981 that a reasonable level of accommodation was provided for research centre staff. Extensions which included a new reception area, an additional nine offices, extensive laboratories facilities, a Conference Room, a large Library, a staff room and other staff amenities have been of extreme value to the development of the region.

As a small example of the value of this facility, no-where else in the Riverland was there a conference facility for agricultural and horticultural use. This room has provided a venue for significant meetings at which horticulture and agricultural research and extension activities have been discussed and planned – leading to significant development of the region. These facilities have also been utilised by many Head Office sections seeking to meet with staff, industry groups and farmers.

Further expansion

Although the extensions opened in 1981 were a great improvement it was not long before these also became over-crowded. In the early 1980s Loxton Research Centre was selected as the site for a significant number of research and extension projects which were funded through the Commonwealth Government's River Murray Soil and Irrigation Program (RMSIP) and other agricultural and horticultural funding agencies.

Results from some of these projects led to the formation of the Irrigated Crop Management Service (ICMS) which was established to deliver service to irrigators, government and industry bodies across South Australia and beyond. To cater for this group a transportable building was located immediately behind the existing office-laboratory block.

In the early 1990s the centre also became the preferred location for projects funded through The Murray Darling Basin's Natural Resource Management strategy. This led to the doubling of the transportable unit to house staff appointed to these projects.

Research projects

Staff at Loxton Research Centre have been involved with numerous pioneering and innovative research projects, both on and off the centre. Some of the most significant have included:

Citrus
Projects undertaken include:

- A seven-acre block of citrus on the Research Centre was planted in 1963 as a tree spacing trial with irrigation treatments superimposed. Tree numbers ranged from 75 to 150 per acre, with three irrigation treatments that varied the timing and amount of water applied. Results showed that development of the trees was not affected by either spacing or irrigation treatments, although it was considered irrigation response may be influenced by soil type.

- Investigations into the control of alternate cropping – a phenomenon that saw large crops of citrus occurring one year followed by significantly lower crops the following year. Trials included the use of Ethrel to promote abscission in Valencia trees thus reducing the number of fruit set in the 'on-crop' year.

  Other trials included applying four different nutrient spray combinations to Valencia trees while they were carrying an 'on-crop'. Initial subjective assessments suggested that a response had occurred, but actual fruit counts taken in the following January showed that there was no significant response.

- Wind break trials in conjunction with investigations into test the effects of exposure to strong prevailing winds on the growth of young citrus trees.

- Assessment of the nutritional status of Riverland citrus via leaf samples from both fruiting and non-fruiting terminals, providing data which was subsequently utilised in determining fertilizer requirements the Riverland area.

- Field testing of:
  - replant-rootstocks
  - salt tolerant rootstocks
  - late navel varieties
  - Murcott Tangor production
- Maturity testing and data recording of range of citrus varieties to establish the optimum time for harvesting and marketing.

- Evaluation and introduction of new varieties and establishment of foundation plantings.

- Virus indexing trials.

- Imperial mandarin thinning trial.

- Determining cost effective methods to increase the size of navel oranges for export markets.

Entomology
Projects undertaken include**:**

- Phytotoxity of narrow range oils to citrus.

- Efficacy of narrow range oils in red scale control.

- Survey of snails on citrus in the Riverland.

- Evaluation of post-harvest scalicides.

- Biological control of red scale on citrus using *Aphytis melinus.*

- Biological control of oriental fruit moth using an azinphos-resistant predator mite (*Typhlodorus occidentalis)* and release of the braconid wasp (*Macrocentrus ancylivorus)* in Riverland orchards.

- Revision of spray technology including determining what spray coverage is needed for good control and world innovation of specially designed fans to apply minimum quantities of chemicals to achieve efficient and effective control.

Home gardens
Staff at the centre have set up demonstrations and provided advice to home gardeners on a range of topics relating to all the major crops. In addition they have provided advice on:

- Low maintenance gardens
- Drip irrigation in the home garden
- Native plant gardens

Staff at the centre have also been involved with the planting of trees and shrubs in and around the centre and the town and the establishment of a native plant demonstration plot.

Nematology
Research, extension and diagnostic projects undertaken on plant parasitic nematodes in South Australia has included world-class investigations of:

- The ecology of root-knot and stubby root nematodes.
- Evaluation of nematode resistant grape rootstocks.
- Development of methods of propagating grapes on rootstocks.
- Chemical control of nematodes on citrus, grapes, vegetables and cereals.
- Biological control of root-knot and cereal cyst nematode.

The research program undertaken at Loxton Research Centre led to the introduction of nematode-resistant rootstocks into the South Australian viticulture, saving the grape industry many millions of dollars by increasing productivity in nematode-infested soils, and by reducing the need for nematicides. This has pioneered the growing of grapes with cultural methods now used across Australia.

Nuts and other New/Alternative Crops
A number of nut varieties and other new crops have been introduced at Loxton Research Centre and their potential as suitable for the Riverland Region tested. Crops tested included:

- Pistachio nuts
- Pecan nuts
- Walnuts
- Avocado
- Kiwi fruit
- Persimmons
- Nashi fruit
- Feijoas

Several of these including Avocado and Pistachio nut have become major crops throughout the Riverland. Many others were evaluated, though not proving useful, eg pomegranate, figs.

Plant Pathology
Projects undertaken include:

- Investigations of grapevine downy and powdery mildew leading to knowledge of how the mildew diseases spread and under what conditions. This led to the development of a disease simulator for downy and a computer system called AusVit, now used across Australia to control these diseases.
- Working with a local grapegrower Mike Western a low-cost electronic weather station the Model T Met Station was designed and built as a disease predictor for easy use by growers.

- Ausvit and the Model T, coupled with other biological technology now form the basis of a disease and pest advisory system called CropWatch for grapegrowers. This system faxes, e-mails and provides on-line management advice to help control diseases and pests more effectively. This is world leading technology.

- Chemical control of the disease black spot and brown rot of stonefruit.

Plant propagation
Projects undertaken include:

- Evaluation and introduction of innovative budding and grafting techniques that have revolutionised the Australian grape industry.

- Supply of grafted vines for replanting of Riverland vineyards.

- Propagation material for new crop development and the vine improvement program.

Work undertaken at the Loxton propagation unit has enabled the widespread use of disease and pest tolerant vine rootstocks and the propagation of many other crops.

Silviculture
In 1989 project entitled ‘Woodlots for Salinity Mitigation’ was established at Loxton. The project was funded by the National Afforestation Program and the Murray Darling Basin Commission Natural Resource Management Strategy involved establishing an experimental woodlot to determine the survival, growth and water use of a range of tree species irrigated with saline drainage water. The primary purpose being to fill knowledge gaps for developing policy on saline drainage water management.

Soils/Irrigation

Irrigation practice has been considered as of first importance in growing fruit in this area particularly in relation to questions of water quality. In recognition of this irrigation treatments were included in factorial designs of some of the early trials so that the effect of differences in amount and timing of irrigation could be measured. Examples included the citrus planting distance-irrigation trial and the apricot manurial-irrigation trial.

Projects undertaken include:

- One of the early trials carried out at the centre was set up to test the efficiency and benefits of under-tree vs overhead watering. Results from this trial lead to a changeover to under-tree watering for the Centre's plantings, with a number of different systems of under-tree sprinkling and soil managements undertaken during the changeover period. Over the years further investigations have led to a significant area of crops irrigated through drip systems.

- Equipment Evaluation which involved testing a range of irrigation equipment (predominantly sprinklers) for distribution flow rates and durability. The aim of this project was to measure and improve irrigation sprinklers in distribution uniformity in the field and determine life expectancy. The outcome of this project was an increase in grower awareness of sprinkler distribution in the field.

  Another flow-on effect was to set up an equipment evaluation service for industry bodies on a fee for service basis. The service was handed over to the Australian Irrigation Technology Service (AITC) in Adelaide in 1995 to be run as a commercial business.

  A related project involved field testing of complete irrigation systems and pumping plant performance, checking of irrigation system designs for hydraulic performance and provision of advice on all aspects of irrigation system design and operation.

- Irrigation Scheduling which involved assessing the water requirements of individual crops across the Riverland using a Neutron probe to measure available water in the soil and determine an irrigation schedule for growers. Once this service had been trialled and deemed to be of value to irrigation and could be run as a commercial enterprise it was handed over to private enterprise.

- Soil Surveys – assessing land suitability for irrigated horticulture.

- Soil mapping using AutoCAD computer software.

- In 1980 a project entitled ‘Amelioration of Renmark Type 6 Soils’ operated from Loxton. Funded through the River Murray Irrigation and Salinity Program the project involved investigations into soil management in vineyards, soil physical characteristics of Riverland soils and water balance in vineyards. Results from this project set the scene, with important underpinning work for much of the subsequent developments in water and soil management.

Investigations and innovations carried out and implemented at Loxton Research Centre have had a major impact on the efficiency of irrigation methods. The introduction of improved sprinkler design and performance measures and through the use computer-aided techniques linking water-use to soil type revolutionised the efficient management of the precious resources of the Murray. A key in this was a strong link between the Department of Agriculture and the E & W S. This not only brought improvements locally, but as the national significance of these techniques was recognised the new technology gradually ‘moved up river’.

Stonefruit
Projects undertaken include:

- Apricot-manurial-irrigation trial which tested six rates or timings of fertiliser and two timings of irrigation was laid out in a factorial design on a five acre block of apricots. Results showed that trees developed normally under half normal irrigation frequency and no obvious differences in tree size or cropping were seen from the different treatments.

- Peach rootstock trial which saw rootstock varieties and scion varieties matched in ways that tested the interaction of ripening date of the rootstock variety and ripening date of the scion variety.

- Almond, apricot, peach, nectarine and plum variety evaluation trials were set up to screen introduced varieties and local selections. Several of these were then planted in small plots to provide a source of budwood for growers.

- Rootstock propagation.

- Fruit thinning of canning peaches using chemicals

- Introduction of new varieties including apricots, peaches and nectarines.

- Training systems – development of the Tatura trellis for canning peaches and the MIA trellis for apricots

- Development of the almond industry in the Riverland with new varieties well suited to warm inland climate.

Vegetables
Projects undertaken include:

- Development of a herb garden.
- Trial plantings of many new vegetable varieties including peppers, pumpkins, squashes and rockmelon, watermelon, and garlic.
- Development of cultural practices for rockmelons using drip irrigation.
- Assessment of potato varieties and cultural methods.
- Trials assessing onions for fresh market and dehydration.
- Assessment of beans for drying and fresh markets.
- Development of cultural methods for broccoli, sweet corn and cauliflower.
- Assisted other staff to develop Centre Pivot irrigation for potatoes and onions.

As many of these crops had previously not been grown in the Riverland, the program led to a significant increase in the value of vegetable production.

Viticulture
Projects undertaken include:

- The evaluation of important new grape clones and varieties. This led to improved planting material and cultural methods that improved yields and increased financial returns for growers.
- Assessment of the nutritional status of Riverland vines by leaf analysis.
- Currant vine training trial and other pruning and trellising trials.
- Clonal selection and establishment of a State Foundation Planting - making available certified cuttings for vineyard replanting in the Riverland.
- Selection of improved vine clones. This project established in conjunction with the SA Vine Improvement Program was designed to provide virus-indexed, high yielding clones of established and newly introduced cultivars for industry. In order to select high yielding clones of the cultivars Gordo, Shiraz, Grenache, Rhine Riesling, Doradillo, and Cabernet Sauvignon, several clones of a particular cultivar were planted in a randomised block, with each clone being replicated 20 times.
- The introduction of rootstocks tolerant to limy soils and resistant to nematodes, a major pest of Riverland sandy soils, and to Phylloxera, a major pest elsewhere.

All these improvements fostered a transition to production of table wines which under-girded the boom years for Riverland viticulture from the 1990s onwards.

Murray Lands Region

In the mid 1980s the Department made a decision to establish a number of regions across the state to manage the operations in country locations. The first of these was set up in the South East, with headquarters at Struan near Naracoorte.

The second region to be established was the Murray Lands Region to supervise operations and staff at Loxton, Berri, Renmark, Waikerie, Lameroo, Murray Bridge, the Loxton and Wanbi Research Centres and the Pinnaroo and Yamba Roadblocks. Previously staff reported to senior staff in their respective branches in Head Office.

Loxton was chosen as the site for the Murray Lands Regional Headquarters because of the close proximity to major horticulture and dryland farming districts.

The establishment of Murray Lands Region coincided with the transfer of the irrigation section of the Lands Department at Loxton to the E & WS Department, with headquarters at Berri. Thus the regional management team headed by Mr Geoff Thomas (who had been previously stationed at Loxton as a Soil Conservation Officer) found it convenient to locate in the area vacated by the Lands Department in the Government Office building in Kokoda Terrace. Geoff was supported by a Regional Officer (Horticulture) and a Regional Officer (Research) plus Senior District Officers located at Renmark and Murray Bridge.

Administrative support was provided through the transfer of Mr Keith Verrall from the Lands Department, with additional support provided by the District Office Clerk.

In 1985 the Murray Lands Region became one of a number of units set up as Small Management Business Units (SMBU's). This change led to the region accepting responsibility for a number of activities previously provided by Head Office units, including Capital Equipment, Minor Works, Supply, Housing, Transport, and all aspects of relating to the employment and management of staff. To facilitate this change, Mr Grant Wasley transferred to Murray Lands Region from the Management Services Unit and additional support was provided with the transfer of Miss Pat West from the District Office.

In 1990 the regional management team vacated the Kokoda Terrace premises and transferred to the Loxton Research Centre to provide additional administrative support to the increasing number of staff at that location.

Murray Lands Region disbanded

The concept of regionalisation was disbanded in 1993 when Primary Industries SA (PISA) was created and a new structure for the newly created department was established.

PISA/PIRSA

Under the structure developed in 1993 for Primary Industries SA, staff and operations were managed by a team of General Managers (Horticulture, Livestock, Agronomy, and Sustainable Resources). Under this set up district offices and research centres were aligned with an appropriate General Manager, with Loxton extension, administrative and some research staff reporting to the General Manager (Horticulture) located at Lenswood. A number Service Delivery Managers were appointed to manage operations in some of the larger locations such as the Riverland. Mr Duncan Tullett was appointed to oversee operations in the Riverland area.

PISA was renamed Primary Industries and Resources SA in 1996 when a new super department was formed to incorporate the Department of Agriculture (PISA), the Department of Mines and Energy and the Department of Fisheries.

SARDI

In 1992 A decision was made to separate the research arm of Primary Industries into a separate organisation – The South Australian Research Development Institute (SARDI). Several staff members from the Loxton Research Centre were transferred to this new organisation and reported to senior staff at the Waite Institute. SARDI was twice revamped throughout the 1990s which resulted in a further swapping of staff between PIRSA and SARDI and the transfer of the Loxton Research Centre Farm to SARDI.

Commercial Operations

During the past 20 years, several commercial or semi-commercial ventures have been developed at Loxton Research Centre, including:

Analytical Crop Management Laboratory (ACML)
ACML was established in 1991 due to the lack of sufficient government funding to maintain a functional analytical laboratory service. The service was promoted to the private sector as a user-pay system and achieved full cost recovery by 1995.

ACML/SASPAS has evolved through several significant historical events to become an efficient and well-respected team. Some of the more significant events were:

- July 1991 - ACML established within PIRSA
- 1993/1994 - transferred to State Services Department.
- 1994/1995 - ACML became fully commercially funded i.e. no government funding.
- July 1995 - transferred back to PIRSA
- July 1998 - incorporated into PIRSA Rural Solutions
- July 1999 - SASPAS was added to ACML and converted to a financially viable unit.

ACML/SASPAS provides an analytical and diagnostic laboratory service in plant and soil nutrition, and in addition to the nutritional analysis provides limited elemental analysis on water, fungicide dip testing, maturity and fruit quality analysis on citrus and grapes.

The Analytical Crop Management Laboratory offers a local, comprehensive analytical service in:

- Plant nutrition
- Soil nutrients, salinity, pH and classification.
- Organic wastes
- Water elemental analysis
- Fungicide dip testing
- Gypsum and Dolomite purity testing
- Maturity and fruit quality testing of citrus and grapes
- And with the assistance of senior industry consultants, provides a full diagnostic and interpretative service in the plant tissue area.

The South Australian Soil and Plant Analysis Service provides a soil and plant analytical service to assist in the monitoring of the physical and chemical health of SA agricultural soils and to diagnose the nutrient status of plants and animals.

Irrigated Crop Management Service (ICMS)

ICMS was established in 1985 to deliver services to irrigators, government and industry bodies throughout South Australia and beyond. Services included: soil surveys, irrigation system evaluations, irrigation and drainage management plans, and assessing land suitability for irrigated horticulture. Fees were charged for services that were identified as being of direct benefit to the client.

A key component of the service was the development of soil mapping methodologies to assist irrigators to understand the key soil properties and to apply appropriate management affecting crop selection, soil improvement, and irrigation design and scheduling. The soil mapping methodologies have been adopted by the Irrigation Industry.

ICMS is now incorporated into Rural Solutions SA.

Rural Solutions SA – (formerly PIRSA Rural Solutions)

Rural Solutions SA was established as a business arm of Primary Industries and Resources SA in 1998 to assist in realising state policy objectives and to provide paid services to a wide range of clients including government agencies, agribusiness, regional community groups, grain growers and their advisers, and wine and food producers and processors.

Most staff located at Loxton, apart from those in SARDI, now form part of this vibrant commercial operation which is quite a change from their previous role of providing an advisory and diagnostic service to horticulture and dryland farmers.

Partnerships

In addition to funds provided by the State Government, a number of important partnerships have been formed to provide funding for projects. These include:

- SA Canning Fruit Growers' Association
- Australian Canning Fruit Growers' Association
- Commonwealth Extension Grant Fund
- Horticulture Research and Development Corporation
- Citrus Board of South Australia
- Dried Tree Fruits Board
- River Murray Irrigation and Salinity Investigation Program
- Murray Darling Basin Commission/Natural Resource Management Strategy
- National Soil Conservation Program
- Grains Research and Development Corporation
- Grape & Wine Research and Development Corporation
- Riverland Vine Improvement Committee
- Riverland Winegrape Industry Council
- Riverland Phylloxera and Grape Industry Board

Dissemination of Information

Staff from both the Loxton District Office and Loxton Research Centre have been heavily involved with providing the farming community on up-to-date information on current and new cultural methods. Many research papers have been published in Australian and international scientific journals while extension activities have included:

- Regular press releases to newspapers, radio and TV.

- For several years in the mid-late 1980s the Department ran a weekly farm and horticultural program – 'On the Land'. This program featured footage and commentary on a selected topic by a departmental officer, with industry leaders invited to join the program as the need arose.

- Weekly ‘Now Is The Time To’ segments and other articles to local newspapers.

- Articles on a variety of topics in the Journal of Agriculture aimed at farmers and fruitgrowers and refereed journals such as the Journal of Agricultural Research.

- Guest speakers at numerous Agricultural Bureaux, Rural Youth and United Farmers and Stockowners and other farmer/grower meetings and conferences across the Riverland and the nation.

- Displays at the annual Riverland Field Day and other agricultural and horticultural events.

- Attendance and involvement in ‘Open Days’ at Loxton and Wanbi Research Centre Field Days.

- Numerous departmental publications including bulletins and fact sheets.

Technology Changes

Staff at Loxton have witnessed many advances in the area of office equipment and information technology since the days of the ‘Imperial 66’ typewriter which was the standard allocation when the author (Pat) joined the Department in 1963. Pat recalls that this was the only piece of office equipment provided, although access to a gestetner owned by the Lands Department was available when multiple copies were required.

The ‘green machine’ as it was known was replaced with the first of several long-carriage machines in the late 1960’s. Several attempts to have an electric typewriter allocated to Loxton were unsuccessful until the Regional Management team arrived in 1978 and an electric ‘golf-ball’ machine, with the ability to change fonts was provided. This was later followed by an electronic typewriter with a small amount of memory and a series of ‘daisy-wheels’ to provide a variety of fonts.

The mid 1970s saw the arrival of the first photocopier – a very basic machine which utilised a roll of ‘smelly’ paper which did not hold its print for more than a few months.

The first fax machine was also very basic and housed a cylinder to which items to be faxed (or blank sheets for receival) were installed under a small metal bar. Only one sheet could be installed at a time with a 20-second time frame allowed for changeover! The unit was very unreliable and consistently dropped out part way through the transfer of information.

Next came the era of the computer, improved fax machines and photocopiers that enabled copies to be reduced/increased and collated.

The First Computers

The first computer to be utilised at Loxton was an Osborne purchased privately by economist Venton Cook several years prior to an '8088' computer being allocated to the Loxton District Office in 1983.

The '8088' had no hard drive and came with Lotus 123, dBase a Pye editor and a dot matrix printer. Initially no dedicated word processor package was provided as the machines were allocated mainly for economists. However within a few months we were provided the word processing program 'Watchword'. This was extremely basic and required the programming of a number of function keys to enable a typist to change margins when indenting paragraphs.

The first computer installed at the Loxton Research Centre in the early 1980s was a cumbersome unit which utilised 8-inch floppy discs and was used mainly for scientific analyses.

In 1986 both the district office and research centre were provided with '8086' machines which included a hard drive, a new word processing program called 'Multimate' and a 'daisy-wheel' printer to allow for more professional publications to be produced.

Within a short time these machines became out-dated and were replaced with '286', '386', '486' and Pentium machines. Multimate was replaced by Word Perfect and laser printers became standard.

The Internet

Loxton Research Centre was one of the first country offices to be connected to the internet. Locally, the project required a great deal of planning in terms of where to locate the server, the number and location of nodes and facilitating staff training. However, as the concept of the internet was relatively new to most staff at Loxton, the project would not have been achieved without the immense assistance and support provided by Mr John Ellis and his team of professionals from the Information Systems Branch in Head Office. Staff from the Information Systems Branch continue to provide on-going support in all aspects of Information Technology.

The introduction of the internet to Loxton in 1993 saw a change in the way many staff operated. With most having a computer on their desk, and through the significant level of training provided, professional and technical staff were in a position to prepare their own publications, thus reducing the demand on administrative staff. Whilst some staff resisted this move, others relished the opportunity and within a short time began to prepare publications which included colourful graphs and photos. The introduction of the windows based Microsoft Office programs with their graphical interface options assisted many to adapt to this new technology.

The internet has provided easy means of communication locally, departmentally and externally.

Staff at Loxton now have access to the most up-to-date computing facilities, colour photocopiers, scanners and telephone systems.

Many significant technological advances have been experienced in the laboratory and on-farm systems, particularly in the field of irrigation automation and related activities.

Weather Records

Since the early 1960's the Loxton Research Centre has been recording weather details and is recognised an official recording station for the Bureau of Meteorology. Readings taken 3-times daily in summer and twice-daily in winter include: maximum, minimum temperatures, dew point, rainfall, evaporation, wind direction and cloud formation.

Fisheries Department

Fisheries Department has had a presence in Loxton since the mid 1950s and having shared the same Minister with changes in government has been aligned with the previous Department Agriculture on a number of occasions. They currently form part of Primary Industries and Resources SA (PIRSA). Their brief is to monitor fishing activities along the River Murray.

Acknowledgements

The authors would like to thank the following people who provided information relating to their employment with the Department of Agriculture:

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Dr Peter Bailey (Entomology)
Mr Ian Bond (Alternative Crops)
Dr Malcolm Campbell (Citrus Research/Entomology)
Mr Greg Cock (Soils/Irrigation/Salinity
Mr Venton Cook (Economics)
Ms Sue Daly (Farm Buildings)
Mr Frank Gathercole (Stonefruit Research)
Mr Warwick Hack (Animal Health Extension/Regulation)
Mr Murray Harvey (ICMS projects)
Mr Richard Henderson (Vegetable Research and Extension)
Mr David Heinjus (Soil Conservation/Murray Mallee Farm Management)
Mr Alan Hincks (Agronomy Extension)
Ms Christ Korte (Employment details)
Mr Mike Krause (Economics)
Dr Don Plowman (General research program)
Dr John Potter (Soil Conservation/Irrigated Horticulture)

Mr Mark Skewes (Citrus Research/ICMS history and projects)
Dr Graham Stirling (Nematology)
Ms Susan Sweeney (Silviculture)
Dr Greg Walker (Nematology)
Mr Ken Wetherby (Soil Conservation/Soil Survey Methodology)
Mr Richard Wood (Weeds/Soil Conservation/Agronomy)
Mr Tom Yeatman (Animal Health Extension/Regulation)

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APPENDIX 1: List of staff employed at Loxton

(Note: this list may not include all weekly paid, temporary and casual staff)
*** denotes employed as at May 5, 2007**

Name	Field of employment	Date(s) employed
Adams, Anthony	Water Use Advice (ICMS) Management (ICMS)	1989 - *
Ainsworth, Noel	Technical Support - Citrus	1987 - 1990
Alam, Jahingir	Irrigation Consultant (ICMS)	2002 - *
Allan, Catherine	Soil Conservation	1986 - 1998
Allen, Wayne	Farm Support	1981 - 1982
Altmann, Susan	Administration Support	1989
Anderson, Fiona	Irrigation & Soils Research	1998
Angeleski, Michael	Farm Support	1988 - 1999
Anspach, Barry	Farm Support	1990 - 1997
Atkinson, Ian	Viticulture Research	1980s
Atteo, Bryce	Farm Support	1980s
Aucote, Monique	Irrigation Research	1994 - 1995
Aujard, Louise	Property Management Planning (ICMS)	1995 - 1996
Auricht, Barbara	Administration	1973 - 1981
Bailey, Peter	Entomology Research	1973 - 1979
Baker, Maxwell	Regional Strategy/Financial Counselling	1999 - *
Bakonyi, Ildiko	Horticulture Extension	1986 - 1989
Barbary, Jack	Stock Inspection	1960s
Barrett, Susan	ACML Support	1999
Barton, Stewart	Spray Technology Research	1990 - 1991
Baskett, William	Horticulture Extension	1959 - 1969
Bass, Anthony	Plant Propagation	1970 - 2007
Biele, Andrew	Farm Management	2004 - 2006
Biggins, Kathryn	Administration/Laboratory & Research Support	1980s - 1990s
Biggins, Lesley	Plant Pathology Support	1990s
Biggins, Margaret	Farm Support/ACML	1981 - 1998
Binks, William	Water Management (ICMS)	2001 - 2002
Boehm, Mervyn	Export Fruit Inspection	1970s
Bond, Ian	Field Support/ Research Centre Management	1967 - 1984

Name	Field of employment	Date(s) employed
Booth, Nicholas	Industry Development	1995 - 1996
Broad, Christine	Laboratory Support - Entomology	1968 - 1973(?)
Brown, Grant	Irrigation & Soils Research	1980s
Brown, Anthony	Regional Management	1986 - 1992
Brownrigg, William	Agronomy Extension	1951 - 1956
Bull, Barry	Agronomy Extension	1964 - 1968
Burdon, Margaret	Nematology Research	1976 - 1978(?)
Buss, Peter	Irrigation Scheduling(ICMS)	1988 - 1989
Calderwood, Tracy	Irrigation, Viticulture and Salinity	2001
Campbell, Ian	Farm Support	1997 - 2001
Campbell, Malcolm	Citrus Research/Entomology	1966 - 1971
Carruthers, Kathryn	Administration Support	1993 - 1994
Cavallaro, Domenic	Export Inspection Supervision	1984 - 1988
Cawthorne, Richard	Farm Support	1961 - 1973(?)
Cerchez, Kristin	Dried Tree Fruits Research	1992
Chapman, Helen	Technical Support - Irrigation	1983
Chappell, Andrew	Irrigation Research	1965 - 1969
Christofis, June	Farm Support	1994 - 1996
Christofis, Michael	Farm Support	1996
Cock, Gregory	Soil & Irrigation Research	1980 - 1984
Cole, Philip	Soil & Irrigation Research /Research Management	1972 - 1984
Collins, David	Export Fruit Inspection	1970s
Cook, Venton	Economics	1977 - 1988
Cook, Vesna	ACML	1988 - *
Crawford, David	Agronomy Extension	1973
Crocker, John	Farm Management	1994 - 2003 2007 - *
Dalton, Gregory	Technical Support - Citrus	1982 - 1987(?)
Davidson, Tom	Weeds Extension	1965 - 1968
Davies, Gerard	Irrigation Research/Natural Resource Management	1988(?) - 1994
Day, John	Farm Support	1987 - 1990
DeBruin, Robert	Irrigation & Soils Research	1983
Delaine, Andrew	Laboratory Support	1977 – 1979
Delaine, Susan	Administration Support	1990 - 1992

Name	Field of employment	Date(s) employed
Disher, Peter	Field Services	1960s(?)
Dixon, Justin	Information Technology	1999 -2004
Douglas, Timothy	Irrigation Agronomy Research	1986 - 1988
Dowley, Maxine	Administration	1973 - 1974
Draper, John	Farm Supervision	1970 - 2001
Draper, Kaye	Farm Support	1998
Dry, Peter	Plant Pathology	1970 - 1975
Eaves, Daryl	Water Resource Economist	1990 -1992
Elliott, Desmond	CAD (ICMS)	1989
Elliott, Kathryn	Horticulture Development	1997 - 1998
Ellyard, Hannah	Irrigation Research - Mallee	1996 - 1997
Enzmann, Frank	Water Management/Soils Research	1994 - 1995
Evans, Stephan	Administration	1991 - 1994
Fisher, Graham	Irrigation Scheduling (ICMS)	(?)1990 - 1993
Fisher, Kate	ACML	2000 - *
Fforde, Robert	Export Fruit Inspection	1991
Foulis, Sharyn	Citrus Pests Research	1994 -1996
Frahn, William	Technical Support - Silviculture	1989 - 1999
Fry, Gregory	Technical Support (ICMS)	1987 - 1988
Fulton, Moira	Wheat Research	1985 -1987
Furness, Geoff	Entomology/Spray Technology	1970 - *
Furphy, David	Irrigation/Financial Planning	1993 - 1996
Gall, Elizabeth	Irrigation Research	1988 - (?)
Gallasch, Peter	Citrus Research	1969 - 2006
Gathercole, Frank	Stonefruit Research	1962 - 2002
George, Peter	Irrigation Scheduling (ICMS)	1988 -1989
Gibson, Andrew	Technical Support - Soils	1989 -1990
Giffen, Adrian	Irrigation & Drainage	1990 -1993
Giles, Gregory	Economics	1986 - 1988
Gillett, Scott	Plant PathologyRevegetation Research	1999 - *
Glenn, Angela	Administration	2000 -2001
Glenn, Trevor	Laboratory Services/ Management	1973 -1989
Good, Michael	Vegetation Rehabilitation	1990 - 1992
Goodes, William	Export Fruit Inspection	1966 - 1980

Name	Field of employment	Date(s) employed
Gormann, Keryn	Social Science	1991
Granger, Andrew	Irrigation and Soils Research	1988 - (?)
Grasby, Cecil	Horticulture Extension	1951 - 1958
Grigson, Gary	Farm Support/Salinity Research	1997 - *
Habel, David	Soils Research	1980s
Habel, Richard	Farm Support	1976 -1989
Haby, Nerissa	Farm Support	1998
Hack, Warwick	Animal Health Extension	1970 - 1976
Hahesy, Brendan	ACML	1998 -2003
Hall, Bruce	Agronomy Extension	1957 - 1963
Hamann, Mark	Technical Support (ICMS)	1986 -1988
Hamilton, Bronwyn	Administration Support	1998
Hand, Gordon	Administration	1967 - 1989
Harris, William	Research Centre Management	1960 - 1962
Harvey, Cynthia	Administration Support	1996 - 1997
Harvey, Gordon	Farm /Technical Support – Salinity	1969 - 1990
Harvey, Murray	Farm Support/Irrigation Scheduling (ICMS)	1969 - 1998
Hastings, Jeffrey	Technical Support Agronomy	1987 - 1988
Haynes, Sharon	Administration	1988 - 1990
Haywood, Melissa	Farm Support	1997 - 1998
Haywood, Rodney	Land Use (ICMS)	1987 - 1994
Haywood, Susan	Farm Support	1990 - 2000
Heinjus, David	Soil Conservation Management	1988 - 1991
Heinrich, Zoe	ACML Support	1999 - 2001
Hele, Anthony	Australian Native Produce	2000 - 2001
Henderson, Richard	Farm Management/Vegetable Research & Extension	1974 -1993
Henderson, Kaye	Farm Support	1987
Hermann, Timothy	Plant Propagation Support	1989 - 1992
Higgs, Nigel	CAD (ICMS)	1988 - 1990
Hilder, Richard	Farm Management	1962 - 1967(?)
Hill, James	Post Harvest Research & Extension	1990 - 2004
Hill, Sallyanne	Administration	1989
Hincks, Alan	Agronomy Extension	1968 - 1973

Name	Field of employment	Date(s) employed
Hiscox, Ralph	Technical Support (ICMS)	1990
Hobman, Farnell	New/Alternative Crops Research	1985 - 1996
Hogg, Steven	Weeds Extension	1968
Hollingsworth, Ian	Land Capability Research	1989
Howie, Richard	Technical Support – Irrigation	1987 - 1988
Howlett, Kenneth	Farm Support	(?) - 1998
Hunt, Melinda	ACML	2004 - *
Inglis, Roger	Economics	(?) 1966 - 1977
Jacka, Neil	Farm Support	1990 - 1999
James, Emily	Dried Fruit Research	1992 - 1993
James, Kerry	Administration	1989 - 1990
Jones, Elwynn	Administration/ICMS Administration	1989 - 1999
Jones, Gavin	Farm Support	1997 - 2000
Jones, Jack	Animal and Plant Protection	(?) 1978 - 2000
Jones, John	Field Support	(?)1960s/70s(?)
Kanakaris, Bill	Technical Support - Irrigation & Soils	1987 - 1991
Kennedy, John	Technical Support - Dried Fruit Research	(?)1991
Kennedy, Timothy	Farm Support	1990 - 1996
Kew, Geoffrey	Technical Support - Soil Conservation	1984 - 1988
Kirk, Nicki	ACML	2005
Kitt, Jorg	Citrus Pests Research	1996
Klingberg, Richard	Veterinary Services	1979 - 1994
Knowles, Simon	Irrigation Research	2004 - *
Korte, Christobel	Farm/Laboratory Support	1966 - 1981
Korte, Fred	Farm Support	1960s -1980s
Krause, Michael	Economics	1980 - 1985
Krzoska, George	Natural Resource Management Liaison	2007 - *
Lang, Darryl	Farm Management/Horticulture Extension	1981 - 1991
Lange, Ian	Field Support	1999 - *
Learhinan, Clifford	Lure Grid Inspection	1991 - 1995
Learhinan, Natasha	Plant Pathology/ACML	1996 - *

Name	Field of employment	Date(s) employed
Lehmann, Nicole	Dried Fruit Research	1992(?)
Leith, Giles	Laboratory Technician -Nutrition	1965 - 1970
Lever, Gordon	Farm Maintenance	1980s(?)
Lewis, Christopher	ACML Support	1997 - 1999
Leyson, Kaye	ACML Support	1997 - 1998
Lipman, Ashley	ACML/Industry Development	1993 - *
Logan, Bridget	Administration Support	1974 - 1975
Luks, Sylvia	Natural Resource Management Projects	1990 - 1992
Lynch, N	Field Services	1970 - 1971(?)
Mackintosh, Tina	Administration – Irrigation, Viticulture and Salinity	2003
Maddern, Donald	Natural Resource Management Projects	1990 - 1996
Maddison, Mark	ACML	2003 - 2005
Maelzer, Derek	Red Sale/Downy Entomology/Pathology	1980s
Magain, Jacqueline	Administration Support	1986 - 1991
Magarey, Carla	Administration Support	2001 - *
Magarey, Peter	Plant Pathology Research	1976 - *
Mann, Brenton	Farm Supervision	1990 - *
Mapley, Melissa	Administration	1998 - *
Mawby, James 'Chip'	Export Inspection Technical Support -Horticulture	1959 - 1965 1974 - 1994
McCarthy, John	Viticulture Research	1970 - 1975
McCord, Andrew	Soil Conservation	1970 - 1972
McDonald, John	Export Fruit Inspection	1980s - 1990s
McDonough, Christopher	Sustainable Agriculture	2001 - *
McFarlane, Megan	Horticulture Development	1995 - 1999
McGill, Dale	ACML	2005 - *
McLaren, Jillian	Plant Propagation	1971(?)
McLaren, John	Plant Propagation	1971(?)
McLennan, Wayne	Irrigation Management (ICMS)	1992 - 1993
Meissner, Anthony	Irrigation & Soils Research	?- 1998
Meyer, Leonie	ACML Support	1998
Miles, Patricia	ACML Support	2002
Milne, Mary	Pathology Research	(?) - 1984

Name	Field of employment	Date(s) employed
Minnis, Jennifer	Farm/Plant Propagation Support	1990 - 2004
Morenos, Nick	Technical Support - Irrigation	1980 - 1986
Morenos, Josephine	Irrigation & Soils	1980s
Mowatt, Peter	Agronomy Extension	1963 - 1968
Murphy, Glen	ACML support	1998
Narbeth, Vanessa	Viticulture Support	2004 - 2005
Needham, Paula	Irrigation & Soils Research	1989
Newton, Mark	Technical Support - Entomology	1984 - (?)
Nicholas, Philip	Nutrition/Viticulture Research	1972 - *
Nickolai, Kaylene	Administration	1996 - *
Norman, Christopher	Technical Support - Irrigation	1986 - 1987
Norton, Scott	Irrigation Scheduling /Management (ICMS)	1989 - 1998
Norton, Trevor	Export Fruit Inspection	1980s
Odell, Simon	ACML Management	2000 - 2002
Oldroyd, Dorothy	Laboratory Support	1967 - 1973(?)
Ormond, Nicola	Salinity Research	2003 - 2004
Pakrou, Naser	Technical Support - Salinity Research	1990
Pech, Joanne	Salinity Research	1999 - *
Pitt, Timothy	Dried Fruits Research/Farm Management	1997 - 2005
Plowman, Donald	Research Management	1982 - 1984
Pocock, David	Farm Management/Industry Development	1992 - *
Polymiadis, Dafni	Administration/Regional Administration	1988 - *
Pope, Harold ‘Bill’	Farm Support	1960s(?) - 1980s(?)
Potter, John	Soil Conservation	1962 - 1966
Potter, Paul	Agronomy Extension	1989 - 1993
Powell, Janet	Administration	2002 - 2007
Proud, Glenys	ACML	2006 - *
Provis, John	Export Inspection	1988
Purvis, Sheridan	Entomology Research	2001 - 2003
Quirke, John	Export Fruit Inspection	1960s
Reichelt, Nicole	ACML Support	1998

Name	Field of employment	Date(s) employed
Repper, Jennifer	FARMBIS	2000 - 2001
Rettke, Michael	Dried Tree Fruits Research	1991 - 1997
Richardson, Noel	Entomology Research	1965 - 1969
Roberts, Rhys	Stock Inspection	1947 - 1954(?)
Roberts, Richard	Technical Support Stonefruit Research/ICMS	1989 - 1991
Rogers, Josephine	Administration Support	2001 - *
Salter, Tania	Administration Support	1988
Sanders, Patricia	Administration	1981 - 1983
Saunders, Gary	Revegetation	1980s
Saunders, Richard	Field Crop Evaluation Research	1994 - *
Scarfe, Beverley	Administration/ICMS Administration	1997 - *
Scott, Vanessa	Horticulture Trainee	1999
Semmens, Grant	Irrigation & Soils Research Support	1980s
Sharley, Anthony	Irrigation & Salinity Research/ Natural Resource Management	1984 - 1989 1995 - 1999
Shephard, Brian	Farm /Field Crops Research Support	1990 - 2001
Shephard, Ronald	Farm/Plant Propagation Support	1970s(?) -1980s
Simes, Thomas	Horticulture Extension	1969 - 1997
Simpson, Helen	Irrigation and Soils Research	1980s
Simpson, James	Export Fruit Inspection	1960s
Sinclair, Jillian	Irrigation & Soils Research	1980s
Skewes, Mark	Technical Support – Plant Pathology, Citrus and ICMS	1988 - *
Sleep, Ashley	Field Crops Research Support	2004 - 2005
Sluggett, Trevor	Irrigation Testing/Management (ICMS)	1985 - 1992
Smith, Bradley	Marketing	1990 - 1991
Smith, Christopher	Farm Support – Maintenance	1989 - 2001
Smith, Helen	Export Fruit Inspection	1985? - 1993
Smith, Janelle	Administration	1993 - 1996
Sparrow, Denis	Field Investigation (ICMS)	1985 - *
Squires, John	Property Management Planning	(?)- 1997
Staniford, Mark	Farm /ICMS Citrus Research Support/Plant Pathology	1986 - 2002

Name	Field of employment	Date(s) employed
Steed, John	Regional Horticulture Extension Management	1985 - 1990
Stehbens, Meredith	Administration Support	1981
Steicke, Ed	Farm Support	1960s - 1970s
Stevens, Robert	Irrigation & Salinity Research	1983 - *
Stevens, Katherine	Technical Support – Dried Tree Fruits	1985 - 1987
Stirling, Graham	Nematology Research/Regional Research Management	1970 - 1983
Stirling, Marcelle	Laboratory Support – Nematology	1972 - 1975
Styles, Julie	Micrometeorology Research	2006 - *
Sweeney, Susan	Silviculture Research	1989 - 1994
Sylvia, Shirley	Vegetable Research	1984 - *
Taheny, Olivia	ACML Support	1997 - 1998
Taylor, Emily	Irrigation (ICMS)	2005 - *
Taylor, Gregory	Natural Resource Management	1999 - 2002
Templehead, Simon	Natural Resource Research	1990 - 1991
Teo, Kim	Irrigation & Drainage Research	1992 - 1994
Thiel, Donna	Administration	2004 - *
Thiele, Andrew	Farm Support	1996 - 1997
Thiele, Debra	Property Management Planning	1997 - 1999
Thiele, Janice	Administration Support	2000
Thiele, Sally	Administration	1987 - *
Thom, Gordon	Export Fruit Inspection	1960s
Thomas, Geoffrey	Soil Conservation/Regional Management	1965 - 1969 1978 - 1986
Thomas, Mary	Plant Pathology	1966 - 1968
Thompson, Andrew	Citrus Research	2004 - *
Tink, Paula	ACML Support	1997
Toyla, Anne	ACML	1999 - 2001
Treloar, Peter	Sustainable Agriculture Systems	2003 - *
Tschirpig, Karina	Administration	1990 - *
Tullett, Duncan	Economic Development/ Regional & Horticulture Management	1992 - *
Tulloch, Harry	Viticulture Research	1965 -1969(?)
Verrall, Keith	Regional Administration/Lure Inspection	1978 - 1991

Name	Field of employment	Date(s) employed
Vowles, Patrick	Technical Support - Grains Research	1997 - 1998
Wachtel, Malcolm	Technical Support – Plant Pathology/Nematology	1975 - 200
Wachtel, Steven	Information Technology	1990 - 1991
Waechter, Shane	CAD (ICMS)	1989 - 2000
Wakefield, Bruce	Export Inspection Supervision	1981 - 1984
Walker, Gregory	Soil Pathology	1984 - 1995
Wallace, Gloria	Administration Support	1998
Ward, Shelley	Administration Support	2001 - 2002
Warner, Dianne	Administration	1986 - 1990
Warner, Philip	Export Fruit Inspection	1986 - 1990
Warner, Ronald	Export Inspection Inspection	1960s
Wasley, Grant	Regional Administration	1985 - 1993
Wasley, Helen	Administration Support	1993
Watson, Keith	Irrigation Extension/ICMS Management	1970 - 1989
Way, David	Irrigation & Drainage Research	1993 - 1994
Wearne, Mark	Spray Technology Research	1988 - 1990
Webster, Jillian	Administration	1962 - 1963
Weir, Bruce	Technical Support (ICMS)	1987 - 1989
West, Patricia	Administration/Regional Administration	1963 - 1999
West, Stephen	ICMS	
Westbrook, Clive	Laboratory Support	1974 - 1979(?)
Westley, Judith	Administration Support	1978
Wetherall, Brian	Export Fruit Inspection	1971 - 1992
Wetherall, Mathew	Technical Support (ICMS)	1989
Wetherall, Suzanne	Administration	1987 - 1989 1993
Wetherby, Kenneth	Soil Conservation	1967 - 1974
White, Airlie	Laboratory Support Nematology	1980s
White, Ian	Farm Support	1984 - 1988
Whitehead, Murray	Irrigation & Soils Research	(?) - 1983
Wigney, Varian	FARMBIS	2000 - 2001
Wilmshurst, Christopher	Laboratory Support	1969 - 1978
Wilson, Anthony	Land Management (ICMS)	1998 - 2002

Name	Field of employment	Date(s) employed
Windle, Barry	Oriental Fruit Moth Project	1969-70(?)
Wishart, Ross	Regional Horticulture Extension Management	1978 - 1985
Witherspoon, Jennifer	Apricot Improvement Research	1993 - 2000
Woidt, Michelle	Plant Pathology Support	1999 - 2000
Wood, Donald	Farm Support	1960s - 1980s
Wood, Keri	Administration/ICMS Administration	1984 -1992
Wood, Richard	Weeds Research/Soil Conservation/Agronomy Extension	1966 - 1969 1975 - 2000
Wood, Stewart	Irrigation Research/Research Management	1987 - 1992
Yeatmann, Tom	Animal Health Extension	1975 - 1977
Yeo, David	Livestock Extension	1970s
Young, Donald	Export Fruit Inspection/Technical Support Citrus Research	1986 - 1992 1992 - 1997
Young, Jason	Technical Support ACML	2003 - *
Young, Maria	Administration Support	1993 - 1994
Ziersch, Joylene	Laboratory Support	1975 -1979(?)
Ziersch, Robert	Technical Support - ICMS	1985 - 1989
Zimmermann, David	Agronomy Extension	1983 - 1985
Zimmermann, Jennifer	ACML Support	1990s
Zimmermann, Renee	ACML	2001 - 2003
Zimmermann, Anthony	ACML Management	1982 - *

Staff from other locations who undertook trials in conjunction with staff at Loxton Research Centre include:

Mr Jack Botham (Regional Horticulture Management/Extension)

Dr Richard Cirami (Viticulture research)

Mr Darren Graetz (Dried Fruits research)

Mr William Harris (Horticulture Management

Mr Adrian Dahlenburg (Dried Tree Fruits research/Administration)

Dr Ben Robinson (Nutrition)

Mr Ian Rogers (Vegetables)

Dr ‘Rip’ van Velsen – Citrus research/Horticulture Management

Dr Trevor Wicks (Plant Pathology/Management)

A number of visiting scientists have undertaken projects in conjunction with research centre staff. These include:

Dr Thomas Burr, Cornell University, New York, USA

Dr David Gadoury, Cornell University, New York, USA)

Megan Kennelly, Cornell University, New York, USA

Kathy Ophel-Keller, University of Adelaide

Mr Don May, Fresno, USA

Dr Roger Pearson, Cornell University, New York, USA

Dr Robert Seem, Cornell University, New York, USA)

Dr Jim Travis, Pennsylvania State University, USA

Craig Austin, Cornell University, New York, USDA