



# Yanco Agricultural Institute celebrates 100 years

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## IN A NUTSHELL

- Yanco Experiment Farm was established in 1908 to provide research and assistance to settlers during the development of the Murrumbidgee Irrigation Area
- Significant research has been conducted over the last 100 years on irrigated crops, horticulture and livestock that has contributed to the development of the diverse primary industries of the MIA. Much of this work is recorded in the *IREC Farmers' Newsletter* and the *NSW Department of Agriculture Agricultural Gazette*.
- The Institute has also played a major role in agricultural education including the training of farmers during the early years and after World War II, of delinquent boys during the 1930s, and through the Agricultural College which has operated there for over 40 years.
- Thousands of people have worked, studied and lived at Yanco Institute over the decades. A reunion is being planned in October for anyone who has "drunk the channel water" and wishes to return.

*In 2008, Yanco Agricultural Institute is celebrating 100 years of service to the rural community of the MIA. The NSW Department of Primary Industries, formerly the Department of Agriculture, has provided important agricultural research, education, extension and regulatory functions at the centre since its establishment in 1908.*

The Institute has had an interesting history being run variously by the Departments of Agriculture, Child Welfare and Army, but it has continued to conduct important agricultural research and education throughout its 100 years.

**A centenary celebration is planned for the October long weekend (3–5 October 2008). For more information contact Yanco Agricultural Institute, telephone 02 6951 2611.**

### **Yanco experiment farm 1908–1928**

Yanco Experiment Farm played a large part in the early development of the Murrumbidgee Irrigation Area. It was established to provide an up-to-date demonstration farm for irrigated agriculture to assist settlers moving into the area. The farm, originally part of Sir Samuel McCaughey's North Yanco Station, was cleared by hand, and then worked and graded by six horses and primitive implements. The first cereal crops of barley, oats and wheat were sown in July 1908, along with lucerne, grapes, nuts, fruit and olive trees. The date palms along the main driveway were planted as a variety experiment and are the source of many growing in the district today.

Early research was conducted on fruit trees, vegetables, lucerne, pastures, fodder and green manure crops, cereals, rice, maize, potatoes, and ostriches for feather production. The farm also had a fruit canning plant and drying racks for processing fruit, a pure-bred dairy herd, a stud piggery, and breeding programs for horses and mules.

Irrigation water was initially supplied from the Murrumbidgee River via Sir Samuel McCaughey's irrigation channels until the "turning on" of the water in July 1912. Both flood and spray irrigation were used on the 200 irrigable acres.

In 1913 the status of the farm was raised to Farm School. Young students (16–20 years) paid £15 for the first year and the second year was free if their work and conduct was satisfactory.

### **Riverina welfare farm 1928–1942**

In 1928 the site became the Riverina Welfare Farm and was operated by the Department of Child Welfare as a training institution for young first offenders, many of whom were homeless or orphans. It accommodated 128 boys who were taught many farm and life skills, including animal husbandry, milking, horticulture, farming, cooking and baking.

The Welfare Farm one of the most successful in NSW and one of the most up-to-date corrective institutions in the Commonwealth. The farm was largely self sufficient and supplied Yanco High School and other government institutions with produce. Many of the current buildings were built during this period.

Although run by the Department of Child Welfare, the Department of Agriculture retained an interest in the existing orchard and vineyard experiments.

### **The war years 1942–1947**

During World War II the farm became Prisoner of War Camp 15. An army garrison was raised to guard the prisoners, which peaked in numbers at over 750 Italian internees and prisoners of war. The Department of Agriculture managed the farm for the Commonwealth Government and the prisoners provided the labour for one of the largest vegetable production units in Australia. Large quantities of canned and dried vegetables were



Teams of horses and simple implements were first used to cultivate Yanco Experiment Farm in 1908. Photo: NSW DPI.



McCaughey's steam engine was used to drag rippers to break up the ground for farming. Photo: Mr Correy, supplied by his daughter Mrs Carrig.



Riverina Welfare Farm boys learned farming skills in the 1930s. Photo: supplied by M Saxby.



Orchards planted on Yanco Experiment Farm were tended by Riverina Welfare Farm boys during the 1930s. Photo supplied by M Saxby.



Vegetable seed trials were conducted during the 1940s. Photo: NSW DPI.



The first trials of aerial sown rice at Yanco Experiment Farm took place in 1960. Photo: Paul Dann.



produced under contract for Leeton Cannery for the armed services. Milk was also sold to the Department of Army.

In 1944 the emphasis of production changed to vegetable seed production (tomatoes and beans), with seed being produced for the Commonwealth Department of Agriculture and then distributed around Australia. About 850 acres of vegetables were produced under irrigation, the major crops including beans, peas, corn, silverbeet, lettuce, onions and tomatoes. Wheat, oats, pastures, lucerne and sorghum were produced for hay and silage. There were also 50 acres of orchard (apples, oranges, pears, olives and dried fruit), a Jersey cow stud, a Berkshire pig stud, 300 sheep and 60 horses, including a Clydesdale stud.

At the end of the war, 1000 acres of the farm were irrigable and there had been significant improvements in farming and irrigation equipment, as well as building infrastructure.

### Research 1950s and 60s

In 1948 the property was handed back to the Department of Agriculture and it again became the Yanco Experiment Farm. The new focus was to conduct scientific research on horticultural and field crops, especially rice, and on dairying and lamb production under irrigation.

Training courses for returned ex-servicemen and other farmers were conducted between 1948 and 1951 under the Commonwealth Rural Training Scheme.

Research in the 1950s and 60s focussed on irrigated crops and vegetables – rice, cotton, canning tomatoes, beans, peas, rockmelons and pastures including lucerne. Other crops studied included safflower, linseed, soybeans, sorghum, rapeseed, mustard, oil poppies, field peas, cow peas and vetches. Dryland cereal trials included oats and bread and biscuit wheat varieties. There was also a weeds research program.

Horticulture also remained an important focus. Research was conducted on citrus (fresh and processed market), peaches, apricots and pears (for canning), apples (for the fresh market) and prunes (for drying). In addition, the entomologist and plant pathologist overcame major problems of the fruit industry, such as codling moth and brown rot, as well as insects of rice and cotton, and established the fruit fly eradication scheme.

Livestock research was conducted on beef, sheep and dairying.

### The college 1963–2008

Yanco provided a unique agricultural training facility for farmers and Departmental trainees from the early days of the Experiment Farm but a new era began with the opening of the Yanco Agricultural College in 1963, after nearly 20 years of active lobbying.

**Yanco Agricultural College** was the first residential agricultural college in the Commonwealth. The aim was to provide training in scientific farming methods and practical skills for young farmers. Students lived, studied and worked at the college, learning a range of skills including growing irrigated crops and pastures, managing livestock, fencing, engineering, woodwork, metal work, business skills, law and farm bookkeeping. The landforming and irrigation, and pastoral management courses were in particular demand in the 1970s and 80s.

There was a high demand for places from the 1960s to 1980s with over 100 students enrolled each year. Graduating students were highly sought after as farm workers and managers and many furthered their careers in agriculture.

Short courses and a unique Aboriginal Rural Training Program were introduced in the 1980s to provide ongoing education and accreditation for farmers. The name changed to **Murrumbidgee College of Agriculture** to avoid confusion with the nearby Yanco Agricultural High School and to reflect the changing role. Competency based training within the National Training Agenda Program began in 1995. Training was offered through the VET In Schools Program, covering 35 schools and on-job training through the National Traineeship Program.

In 2003 the College amalgamated with Tocal College and full-time residential courses ceased. The college was renamed **Murrumbidgee Rural Studies Centre**. Today MRSC continues to deliver short courses both at Yanco and around the state under the NSW DPI PROfarm banner. It currently attracts over 4000 students per year.

### Extension & regulatory services

The NSW Department of Agriculture's Advisory service for the MIA began in 1919 at Yanco Experiment Farm and then operated from Leeton from 1922 until 1983 when officers were transferred to the new advisory office at Yanco Agricultural Institute.

Over the years advisory staff have included fruit, agronomy, dairy, machinery sheep, beef, pig, bee, citrus and noxious weeds officers, as well as economists and regulatory officers. Current services offered by Yanco extension and regulatory staff include:

- extension services to the cropping, horticultural and livestock industries
- education programs for farmers and the broader community
- a pest and disease identification service for the public
- monitoring and control centre for the Tri-State Fruit Fly Exclusion Zone, to help ensure the acceptability of local fruit and vegetables in domestic and overseas markets.
- veterinary and plant quarantine officers responsible for the control of insect and diseases of plants and animals in NSW.
- NSW Forests staff to manage local state forests and issue firewood collection permits.

Yanco staff are called upon to assist if there is a severe state-wide insect or disease outbreak such as plague locusts or equine influenza, or natural disaster such as flood and fire.

### Significant outcomes

#### *Supporting the Yanco dairy*

A dairy operated on Yanco Experiment Farm for many decades. Initially a stud Jersey herd of around 30 cows was milked by hand. The stud was one of the best in the state winning many prizes at local and state shows. By 1944 the herd numbered 150 and 75 cows supplied 31,000 gallons milk to the army. The herd size was reduced when labour became limiting after WW II. Milking machines were installed in the early 1950s.

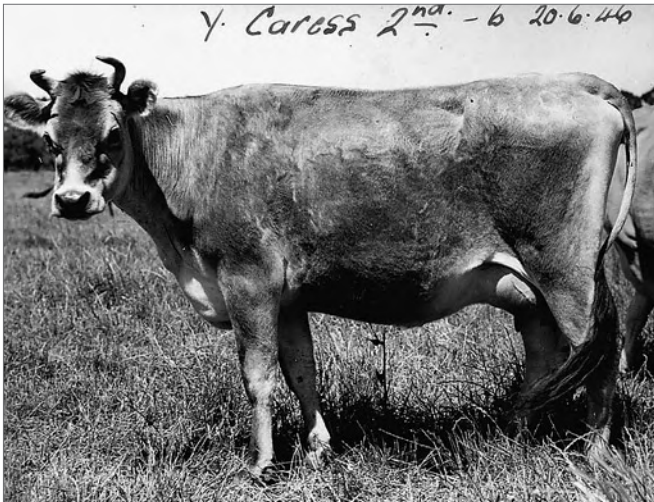
In 1955 the herd was changed and it became one of the state's leading stud Guernsey herds. Experiments were conducted to study solids non-fat-production and the weight gain of calves. Cattle were regularly exhibited at the Sydney Royal Easter Show and breeding stock were distributed widely to the State's dairy industry. Many creditable production records were achieved



Ostriches were farmed at Yanco Experiment Farm in 1913. Photo: H. West, supplied by his daughter Mrs Apted.



Sultana grapes were dried on drying racks from the early days and pictured here in the 1950s. Photo: Mike Stannard.



Yanco Caress, prize winning dairy cow from the 1940s. Photo: NSW DPI.



Riverina Welfare Farm was a major vegetable production unit during World War II. Photo: NSW DPI.



Cotton variety trials were conducted in the early 1960s and pictured here in 1963. Photo: Geoff Bulkeley.



Rice breeders, Russell Reinke and Laurie Lewin inspecting trials in the 1980s. Photo: NSW DPI.



during this period. In the late 1970s, Jerseys were reinstated but the dairy was closed and the herd dispersed in 1982, as dairying in the region declined.

### Supporting the rice industry

The Department of Agriculture conducted the first rice research in the MIA at Yanco Experiment Farm, including Indian varieties in 1910 and Japanese varieties in 1915. Californian and other varieties were trialled in the early 1920s and as a result, the first commercial rice crops in the MIA were grown in 1924.

Rice breeding commenced in 1928 at Yanco Rice Research Station (now Leeton Field Station). Rice breeder Walter Poggendorff selected the first pure line rice varieties, but his work was interrupted by WW II. Plant breeding continued after the war with reselection of the Californian variety, Calrose by Don McDonald, as well as long grain varieties in the 1950s and 60s. Breeding has continued to increase yield and quality, improve lodging and cold tolerance, and provide new niche market varieties. The breeding program has now released 25 varieties.

Rice agronomy trials were conducted at the Rice Research Station from 1928. After WW II rice research continued at Yanco Experiment Farm with the financial support of the rice industry, leading to improved yields and quality of rice. Some notable developments have included better crop rotations, development of sod and aerial sowing techniques, bloodworm control, management of sun-cracking in grain, and improved water, weed and nitrogen management.

Recently, research has focussed on improving the sustainability of rice growing in the MIA. Newer technologies include the development of NIR to measure rice quality, use of EM and GPS to identify rice land suitability and the use of new field layouts to improve the efficiency of the farming system.

From 1997–2005 Yanco was the headquarters for the CRC for Sustainable Rice Production, headed by respected rice breeder, Laurie Lewin. This linked NSW Agriculture, CSIRO, Universities and the rice industry, and resulted in significant progress for the rice industry.

### Supporting the horticultural industries

Horticultural research at Yanco has been vital to the region with work conducted on pome and stone fruit, citrus, vegetables and olives. Early investigations included new varieties for irrigation and processing methods. Later experiments included rootstock and variety trials, pruning and thinning trials, soil and irrigation management, and insect and disease management.

#### Stone and pome fruit

The Leeton Cannery was the major driver of stone fruit research until it closed in 1994. Tree trellising systems for canning peaches improved crop water use, yield and fruit quality. Other work included plant growth regulators for canopy and crop management, disease control using fungicides, and the development of brown rot and prune rust forecasting services.

Pome fruit research included pear rootstock trials, insect and disease management, Granny Smith apple clone selection and biological control for codling moth in apples.

#### Citrus

Citrus research used dwarfing viroids to produce smaller orange trees without affecting tree health. Closer planting of smaller trees increased fruit yield per ha substantially and the GTD viroids are commercially available to industry today

Other work has included irrigation, nutrition and mechanical harvesting, to improve fruit quality. Rootstock and variety trials identified the best scion-rootstock combinations and the most disease resistant rootstocks for the region. Pathologists improved resistance to *Phytophthora* root rot while entomologists developed biological control for pests such as spined citrus bug. Irrigation management was a major focus in the 1980s.

#### Fruit fly research

Entomologists studied the biology of the Queensland fruit fly and introduced the use of sterile flies to reduce insect numbers. The Yanco Fruit Fly Eradication program aims to eliminate fruit flies from the Fruit Fly Exclusion Zone in southern NSW to safeguard export markets for fruit and vegetables.

#### Vegetable research

Vegetable research has included variety evaluation and seed production of vegetables. Research has been undertaken on processing tomatoes, potato, carrot, rockmelon, pumpkin, asparagus, onion and garlic, and post harvest research. Current research conducted at the National Vegetable Industry Centre includes pest, disease and irrigation management of a range of field-grown vegetables.


#### Olives

Research has concentrated on new varieties and irrigation management to improve fruit yield and oil quality, while a major extension program has assisted growers statewide.

#### Other important research

A number of other significant research programs have been conducted at Yanco and Leeton Agricultural Research centres.

Cotton and opium poppies were studied in the 1960s.

- Irrigated pastures and crops (cereals, grain sorghum, cotton, soybeans, sunflowers, millet and maize) and irrigation efficiency researched from 1970–1990s.
- A lucerne breeding program was established in 1977 to breed varieties resistant to an exotic lucerne aphid pest.
- Research on sheep and cattle management including reproduction, nutrition and grazing management.
- In the 1980s research included high fertility (hyfer) sheep breeding, sheep dairying and management of irrigated summer crops and pastures.
- Soybean evaluation program conducted since the 1980s. 

#### Acknowledgements

*Many photographs of the early development of the farm and local area that survive today were taken by Hilton West, sheep and wool officer, one of the first appointees to the Farm in 1908. Research Agronomist Paul Dann, located at Yanco in the 1950s-60s, also took many of the photographs of the farm and its activities, some of which are shown here. Photographs were also sourced from Maurice Saxby, Mrs Margaret Apted, Mrs Carrig, Mike Stannard and Geoff Bulkley. We thank them for allowing us to use their family's photographs. Other photos are from the YAI Photo Archive and the NSW DPI Photolibrary.*

#### Further information

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