

## Mr Frank Clements Crofts

The degree of Doctor of Science in Agriculture (honoris causa) was conferred upon Frank Clements Crofts at the ceremony held at 9.30am on 29 May 1998.

### Citation

Chancellor, we honour today Frank Clements Crofts, a graduate and loyal servant of this University and an agronomist of rare distinction.

Frank Crofts was born in Blayney, New South and educated at Kinross-Wolaroi College, Orange. After serving in New Guinea with the Royal Australian Air Force he enrolled in the Bachelor of Agricultural Science degree at the University of Sydney in 1947. He graduated with first class honours.

From 1951 to 1954 he worked on the problem of declining pasture production on the Far North Coast of New South Wales, first as an honours student under E J Breakwell, later as a Research Agronomist in the Department of Agriculture and finally on secondment to the University of Sydney. He was, with Breakwell and Jenkins, largely responsible for the development of the practice of sod-seeding legumes into uncultivated pastures as a means of increasing the production of grass dominant pastures. The sod seeder developed in this programme was patented by the University of Sydney and is widely used as the basis of conservation farming.

In 1954, he was appointed Lecturer in Agronomy at the University and collaborated with Hector Geddes in developing the Water Harvesting concept. He recognised that it was critical to ensure that the water, once harvested, was used efficiently to produce a consistent supply of forage for dairy cows throughout the year. After five years of intensive field research, involving many undergraduate and graduate students, he was able to demonstrate that an integrated programme of Water Harvesting and Planned Pasture Production could reduce feed costs in whole-milk production by up to 75%. As well as undertaking a heavy load of teaching and postgraduate research student supervision, Frank Crofts continued to contribute to the University's pasture research programme on the Far North Coast of New South Wales.

In 1960 he was awarded a Rockefeller Foundation Fellowship which enabled him to spend a year at Oregon State University, in the United States, where he obtained the degree of Master of Science, with honours, for his work on the effects of nitrogen on the growth patterns of a range of grass species.

He then initiated a research programme on the Central Tablelands of New South Wales designed to increase dry-land forage production in winter, based on oats and nitrogen fertiliser and high-density grazing to increase prime lamb production. His research on nitrogenous fertilisers included some of the first experiments in Australia on the use of gaseous ammonia injection into soils, now a common practice in the cotton and cereal industries.

In 1966 he was promoted to Associate Professor and appointed acting head of the Department of Agronomy. In 1969 he was given the added task of directing the University's Livingston Farm at Moree, a 5,000 hectare grazing property, a part of the Livingston Bequest. It was converted largely to no-till farming and was the foundation of the conservation farming revolution in the Australian grains industry.

Following the retirement of Professor Geddes in 1973, he was appointed Director of University Farms, which by this time had risen to ten. In this position he pursued his research interest in "Planned Pasture Production and Utilization" and continued lecturing to and supervising final year and postgraduate students. Although the farms were managed on a commercial basis to ensure profitable operations Frank Crofts ensured they also provided locations for teaching and research and important reference centres for the rural community.

He has throughout his career advocated conservation tillage, sod seeding, direct drilling and no-till farming as means of ensuring a more sustainable and more profitable agriculture for Australia.

Frank Crofts is an inspiring and dedicated teacher and is greatly respected for his combination of scientific and practical knowledge. Many of the fundamental agronomic concepts that he formulated are still used in teaching programmes. Furthermore, many of his graduates have gone on to become leaders in agricultural research and other areas of agriculture.

In 1984 Frank Crofts was awarded the inaugural C M Donald Medal by the Australian Society of Agronomy and in 1985 he was made a Fellow of the Australian Institute of Agricultural Science. These prestigious awards indicate the esteem in which he is held by his profession and recognise his outstanding contribution to Australian agriculture.

Chancellor, I have the honour to present to you Frank Clements Crofts for admission to the degree of Doctor of Science in Agriculture, honoris causa, and I invite you to confer the degree upon him.