South Australian farmers were selecting new Wheat varieties in the 1860s and 1880s suited to the state, since conditions were very different from England. After his losses from rust, Richard Marshall, a farmer at Wasleys, began selecting plants from available wheat varieties in 1868. In 1880, Dr Richard Schomburgk, Director of the Adelaide Botanic Garden, imported varieties, including “Du Toit’s” (“Early Baart”) from South Africa.

By 1892, Marshall had 180 varieties of wheat, growing in plots. As well as rust resistance, Marshall recognised other characteristics grain shake when ripe, quality and yield of grain, stooling, and strength and length of straw. He distributed varieties to farmers. Until the 1920s, “Marshall’s No. 3” and “Yandilla King” remained standards of yield among later maturing varieties. Wheat breeding was undertaken at Roseworthy Agricultural College after its establishment.

By 1930, of the nine most important wheats, five originated at Roseworthy College.
W.J. Spafford (later Director of Agriculture) was the plant breeder at Roseworthy. In the 1930s, Jim Breakwell at Roseworthy adopted baking quality in wheat selections. Ivan Phipps and Albert Pugsley at the Waite Institute worked on disease resistance. In the 1960s, boron became an issue and Rex Krause’s Roseworthy selection of boron-tolerant Halberd became the dominant variety. Rex’s work was continued by Gil Hollamby. In recent years, wheat breeding has been privatised through Australian Grain Technologies Pty Ltd. From 1965, Tony Rathjen was independently breeding wheats at the Waite releasing over 20 varieties, later developing an interest in Durum (pasta) wheats. Well known to SA Farmers, he was working almost up until he passed away in June 2014.

Samuel Prior grew barley at Brighton, South Australia for over fifty years, cultivating what became known as Prior barley, which achieved malting quality. Six-row Cape barley was also grown for feed. As South Australia’s barley production increased through the 1920s and 1930s, barley breeding also became a Waite Institute specialty.

In the 1950s, Keith Finlay introduced mass selection techniques before joining CIMMYT in Mexico, and David Sparrow followed in the University of Adelaide, releasing Clipper, which revolutionised South Australian barley growing. Later varieties were Galleon (which had nematode resistance), Schooner and Skiff, then Barque and Sloop. Jason Eglinton leads the current program.

The University of Adelaide leads Pulse Breeding Australia’s national faba bean program. SARDI breeds Oats - the program was initiated by now well-known Mid-North farmer, Professor Andrew Barr, and continued by Pamela Zwer and Sue Hoppo.