

Durum breeding: the way to a secure future

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Durum wheat (*Triticum turgidum*) is an important cereal crop grown in many parts of the world. Grain from durum is used to make pasta and semolina products. Australia is an important grower of durum wheat and currently produces 300,000-400,000 tonnes annually.

NSW is responsible for around 55 per cent of national production and South Australia 40 per cent. The domestic durum requirement is approximately 300,000 tonnes.



A head of durum wheat

Australian Durum Wheat Improvement

The Australian Durum Wheat Improvement Program (ADWIP) - a partnership between the Grains Research Development Corporation (GRDC), Industry & Investment NSW (I&I NSW) and the University of Adelaide - is the national durum wheat breeding program.

The aim of ADWIP is to increase national durum production to 1 million tonnes by 2012. There are two nodes: I&I NSW's (Tamworth Agricultural Institute) and the University of Adelaide.



I&I NSW's role in durum wheat breeding

I&I NSW has been involved in durum breeding for more than 60 years. The cultivars I&I NSW has produced continue to be extremely popular with growers, such as *Bellaroi*, *Jandaroi* and *Wollaroi*, which dominate the industry.

The University of Adelaide durum breeding activities started in 1989 and led to the joint release of *Tamaroi* and *Gundaroi*. Three new varieties have since been developed by ADWIP: *Caparoi*, *Hyperno* and *Saintly*.

Maintaining world quality durum wheat

The quality of Australian durum wheat is regarded by Italian durum millers and processors as among the best in the world. A key requirement of the breeding program is to develop varieties that can cope with a wide range of biotic and abiotic stresses while still maintaining high grain quality.



Australian durum is regarded by Italian durum millers as among the world's best.

The I&I NSW breeding program is currently improving a number of traits. Yield and quality are major objectives of the program. Improving resistance to crown rot is also a high priority because all durum varieties are highly susceptible to this disease. Fusarium head blight is also important in NSW and high levels of resistance to leaf, stem and stripe rust diseases must be maintained in all released varieties. Developing tolerances to abiotic stresses such as salinity, boron toxicity and aluminium toxicity will also be important for expanding durum production into new regions of Australia.



I&I NSW scientist Dr Bert Collard leads the Australian Durum Wheat Improvement Program.

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