



CSIRO PLANT INDUSTRY

# Drysdale – a world's first

*Drysdale is a high quality spring wheat bred for dry conditions.*

Drysdale is the first wheat variety to be bred using scientific gene selection criteria based on measuring a plant's carbon isotope signature.

The DELTA carbon technology gives plant breeders the ability to breed varieties of wheat that more efficiently exchange atmospheric carbon dioxide for water during photosynthesis. This increases their water-use efficiency.

DELTA has given Drysdale an advantage over comparable wheats in dry years, producing a minimum of five per cent more grain despite receiving the same rainfall.

Drysdale's yield advantage is not limited to dry years; the variety has been one of the highest yielding varieties in irrigated trials.

In addition, Drysdale has outstanding resistance to the major wheat diseases.

Drysdale was the first commercial release of a wheat variety from Graingene - a joint venture between AWB Limited, the Grains Research and Development Corporation (GRDC), Syngenta and CSIRO Plant Industry.

## DRYSDALE FACTS

- Australian Hard quality
- High yield
- High water use efficiency and drought tolerance
- Short season maturity, similar to Hartog and Bowerbird
- Acid soils tolerant
- Very good resistance to Stem, Leaf and Stripe rusts
- Resistant to lodging



## YIELD

In 12 field trials held under dry conditions in 2003 Drysdale yielded 23 per cent more grain than Diamondbird, the current recommended variety in southern New South Wales.

Drysdale is also a particularly good alternative to H45, the most widely accepted variety in the south east of NSW, having similar maturity and excellent comparative rust ratings. Drysdale has also performed very well in Victoria and in irrigated trials in NSW.

## RAINFALL

Drysdale is best adapted to the low-medium rainfall zones of central and southern NSW and Victoria where it yields well and produces good-sized grain. Drysdale has also performed well in mid to high rainfall areas of southern NSW.

## PLANT CHARACTERISTICS

Drysdale is a semi-dwarf variety of similar height, maturity and chaff colour to Hartog and Diamondbird. The low carbon isotope discrimination (high transpiration efficiency) of Drysdale compared to Hartog and Diamondbird results in significantly higher yields in drier seasons and regions. Drysdale has a higher yield when compared to Janz and Hartog in southern NSW. Similarly to Diamondbird, Drysdale is tolerant of acid soils.

## GRAIN CHARACTERISTICS

Drysdale is a hard-grained wheat that will be received into the Australian Hard (AH) segregation in southern NSW. It will receive the maximum classification of APW in other states until further quality data is available.

Drysdale produces grain that is large in size compared with most current varieties, and this contributes to its high flour extraction rates. Drysdale produces flour that is creamy in color.

Farinograph results show Drysdale comparable to Janz. Extensograph results demonstrate that Drysdale has very strong dough properties, with acceptable extensibility.

## DISEASE AND PEST RESISTANCE

Drysdale is resistant to stem, leaf and stripe rust. It is moderately susceptible to Septoria tritici blotch.

## PLANT BREEDERS RIGHTS

Drysdale is protected by Plant Breeder's Rights, any unauthorised commercial propagation or any sale, conditioning, export, import or stocking of propagating material of this variety is an infringement under the Plant Breeder's Rights Act 1994.

Growers are allowed to retain seed from production of this variety for their own use as seed only. An end point levy of \$1.10 per tonne, which includes breeder royalties, applies to this variety.

## ACKNOWLEDGMENTS

Drysdale was bred using a new breeding technology for drought tolerance (carbon isotope discrimination) developed by the Australian National University and CSIRO with support from growers through GRDC.

It was bred and selected by Graingene (a joint venture between AWB Ltd, CSIRO, Syngenta and GRDC). Drysdale is available exclusively through AWB Seeds.

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