

Brennan[®]

DUAL PURPOSE WHEAT

VARIETY SUMMARY

- Dual purpose winter wheat for grazing as well as grain production.
- From very good to good levels of resistance to all three types of rust.
- White feed quality grain.
- Awnless to allow cutting for hay or late season grazing.
- Excellent forage production



BREEDING

Brennan (B2006) was bred by the CSIRO winter wheat breeding team. Brennan has been commercialised by Seednet under an exclusive licensing agreement.

Pedigree: Brennan was selected from a cross between Mercia and Hartog and back crossed to Mercia. Selection criteria were winter habit, rust resistance, early maturity, and good recovery from grazing.



AREA OF ADAPTATION

Brennan is best adapted to the shorter season regions of the high rainfall zone. This area includes the slopes of NSW, irrigated areas, the drier parts of the long growing season area in Victoria and SA, and the temperate areas of southwest WA.



DISEASE AND PEST RESISTANCE

Table 1. Plant characteristics and disease resistance of Brennan in comparison to other varieties.

Variety	Head Type		Sprouting tolerance	Yellow Leaf Spot	Septoria tritici	Rust Resistance			Lodgin Resistance	BYDV Resistance
	Colour	Awn				Stem	Leaf	Strip		
Mackellar	Red	No	T	MR-MS	R	MR	R	MR	M	R
Rudd	Red	No	T	R	R	R	R	R	R	T
Brennan	White	No	I	MS	MR	MR	R	R-MR	MR	S
Declic	Red	Yes	T	n/a	n/a	S	S	R	R	S

Plant and Disease Terms: R- Resistant, MR - Moderately Resistant, MS - Moderately Susceptible, S - Susceptible, VS - Very Susceptible, VT - Very Tolerant, T - Tolerant, MT - Moderately Tolerant, MI - Moderately Intolerant, I - Intolerant, VI - Very Intolerant, MR-MS - Moderately Resistant and Moderately Susceptible.



YIELD

Table 2. Grain yield across the longer season sites of NSW and Victoria (number of sites in brackets).

Variety	NSW dry matter and grain recovery as a % of Whistler 1996-2002			Vic grain yields 1996-2002 as a % of Meering		Victorian variety trials 2001 as a % of Kellalac						
	1st DM cut	2nd DM cut	Grain Recovery	North East	South West	Gnarwarre	Hamilton	Streatham	Wonwondah	Lake Bolac	Bool Lagoon	Rutherglen
Brennan	94	96	102	97 (9)	97 (18)	140	91	103	87	107	103	85
Currawong	101	102	109	107 (12)	97 (24)	103	117	103	105	98	96	102
Declic	-	-	-	104 (12)	107 (25)	107	105	112	98	112	103	97
Dennis	81	103	107	94 (2)	96 (5)	103	117	103	105	98	96	102
Whistler	100	100	100	-	-	107	110	100	109	99	96	110

Data Source: NSW Agric.

Data: DPI

Data Source: CSIRO, DNRE



SOIL TYPE

Dual purpose wheats generally perform well on a range of soil types, however deep, well-drained soils are considered ideal. Winter wheats are able to tolerate waterlogging for short periods, although with reduced production rates.



MATURITY

Brennan is a long season variety which has a vernalisation (exposure to cold) requirement before it will flower and produce grain. When the vernalisation requirement has been met, flowering in Brennan will occur 8 days before Gordon or Paterson and 11 days before Tennant.



PLANT CHARACTERISTICS

Brennan is an awnless, white grained, feed grade quality wheat. It has a medium-tall harvest height with medium lodging resistance. Brennan has less sprouting tolerance than red grained varieties and is similar to the varieties Currawong or Warbler. CSIRO test results have shown Brennan to have a medium coleoptile length.



GRAIN QUALITY

Brennan produces grain that is white in colour and has the maximum classification of (SFW) Special Feed Wheat under the AWB Limited classification systems. Where separate SFW segregations are not available, Brennan winter wheat will be received as feed and binned with downgraded milling wheat varieties. Brennan lacks certain baking qualities which disqualify it as a milling wheat variety.

 **AGRONOMIC GUIDELINES****Sowing**

- Winter wheats require a dormancy period. This is important to remember when planning to sow farmer retained seed. Dormancy can have a significant impact on the viability of the seed. A germination and vigour test should take place prior to sowing.
- Sowing rates vary from region to region, please refer to your local DPI sowing guide or respective agronomist. To accurately determine the correct sowing rate [plant density], fill in the table below to calculate a kg/ha rate.

1000 Seed Weight (grams)	x	Target Plant Population	÷	100	÷	Establishment % x Germination %
.....	

= Your Seeding Rate.....kg/ha

Grazing

A major advantage of dual purpose winter wheats is their ability to be grazed by stock. Long season winter wheats are the only wheats suitable for winter grazing as they do not begin to develop ears before mid-winter.

Early grazing of autumn-sown wheat will remove leaf canopy and reduce growth to minimum rates. To encourage rapid crop growth and to maximise forage production, it is recommended to delay grazing the crop until the secondary roots are firmly anchored. Close monitoring of Brennan should take place during spring to ensure that any stock is removed immediately when above ground head formation is detected. Jointing is evidence that ears are well above ground level and that stock should have previously been removed.

Growers should monitor the progress of the crop to best determine when stock should be removed. By vertically slicing main shoots, growers will be able to check that the growing point remains below the soil surface whilst grazing continues.

Nutrition

- Successful winter wheat crops require proper nutrition. A 5 tonne per hectare winter wheat crop requires a minimum of 20 kg/ha actual phosphorous and 100 kg/ha of actual nitrogen, which must be drawn either from the soil or obtained through fertiliser applications.
- Nitrogen fertiliser application to winter wheat is best split between time of sowing and spring or after stock removal. Application of Phosphorus fertiliser to winter wheat is best banded with the seed or pre applied.

Disease

- In areas where Barley Yellow Dwarf Virus is a potential problem, the sowing of Brennan should be delayed until late autumn to reduce the risk of infection by aphids before winter or sprayed at the one leaf stage with a systemic insecticide.

Weed Control

- It is important to take into consideration the WIP of any pesticides applied to the crop or seed prior to grazing.
- Weed control early in the growth stages of a winter wheat crop is critical to success. A wide range of pre-emergent and post-emergent herbicides are available. Brennan has not shown any increased sensitivity to any of the commonly used herbicides in trials and commercial plantings to date. It is important to take into consideration the WHP of and pesticides applied to the crop or seed prior to grazing.

**PLANT BREEDER RIGHTS AND ROYALTIES**

Brennan is protected by Plant Breeder 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. A Seed Point Royalty is included in the purchase price of seed.

ACKNOWLEDGMENTS

Brennan was bred by CSIRO with support from AWB Limited and growers through the GRDC. Yield testing and disease resistance assessment was carried out by CSIRO with support from various state departments and grower organisations.



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