

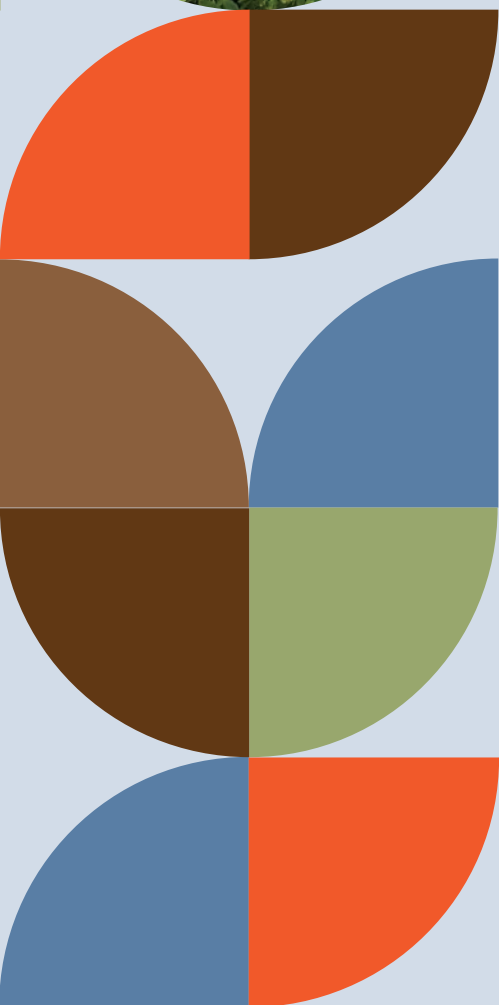


Highest rated disease resistant IMI tolerant lentil



KEY FEATURES

- ✓ **IMI tolerant red lentil** developed from PBA Jumbo2[®]
- ✓ **Group B herbicide** tolerance equivalent to existing XT tolerant varieties
- ✓ **Only IMI tolerant lentil** with resistance to both the Nipper and Hurricane ascochyta blight pathotypes
- ✓ **Moderately resistant** to botrytis grey mould
- ✓ **Mid to late flowering** and maturing
- ✓ **Well suited to reliable lentil growing areas** and seasons with a favourable finish
- ✓ **Good quality medium sized** seed with a uniform grey seed coat





LEADER^ϕ IMI Lentil



ADAPTATION & GRAIN YIELD

GIA Leader^ϕ is a broadly adapted imidazolinone (IMI) tolerant, disease resistant red lentil with a uniform medium sized seed for traditional “Nugget” type markets.

A combination of high disease resistance and a slightly later flowering and maturity, compared to all other IMI tolerant varieties, makes GIA Leader^ϕ best suited to longer growing season environments where lentil production is often limited by disease.

Grain yields of GIA Leader^ϕ have been slightly higher than PBA Hurricane XT^ϕ and greater than PBA Hallmark XT^ϕ across three years of testing in Victoria and South Australia (2018-2020). In limited comparisons with PBA HighlandXT^ϕ, GIA Leader^ϕ was equal or slightly higher yielding in 2020, but 5-15% lower yielding at sites with a drier finish such as occurred in 2019 and at Horsham in 2020.

AGRONOMY

General paddock selection and agronomic production requirements for growing GIA Leader^ϕ are the same as for other IMI tolerant lentil varieties. Refer to GRDC Lentil Grownotes and Lentil Ute Guide (www.grdc.com.au).

GIA Leader^ϕ has the same level of tolerance to both Imidazolinone (IMI) and residual levels of sulfonylurea (SU) herbicides as current XT lentil

varieties (e.g. PBA Hurricane XT^ϕ). Thus it is tolerant to applied imazamox and imazapyr according to the Intercept[®] herbicide label.

It is imperative growers adhere to product label rates, plant-back periods and all label directions for herbicide use.

GIA Leader^ϕ is 3 to 8 days later flowering and maturing than PBA Jumbo2^ϕ, leading to higher relative grain yields in favourable growing environments, but lower yields when the season is terminated by drought and/or heat. If sowing early, GIA Leader^ϕ will provide growers with a relatively later lentil flowering window compared to all other IMI tolerant varieties, and may avoid the full impact of frost.

GIA Leader^ϕ was developed from PBA Jumbo2^ϕ and has similar plant characteristics with PBA Jumbo2^ϕ although it tends to be less vigorous but more erect at harvest. Plant height, pod drop and shattering levels at maturity of GIA Leader^ϕ have generally been found to be similar to that observed in PBA Jumbo2^ϕ.

GIA Leader^ϕ is relatively later maturing when compared with most current varieties but has a more defined reproductive period and matures more evenly than varieties such as PBA Hallmark XT^ϕ and PBA HighlandXT^ϕ, which remained greener for longer under the late and favourable growing season of 2020. Correct application timing and product selection for effective desiccation is required in GIA Leader^ϕ, refer to GRDC Lentil Grownotes and Lentil Ute Guide (www.grdc.com.au).

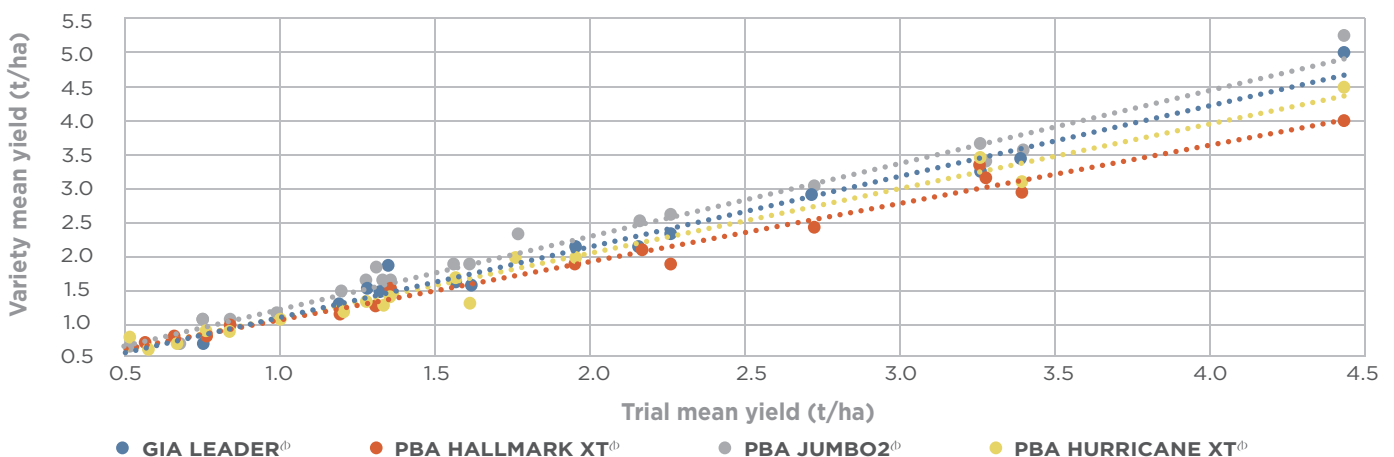


Figure 1: Mean yield (t/ha) of GIA Leader^ϕ and other lentil varieties, plotted against the trial mean yield (t/ha) of the varieties. Data from GIA breeding and contracted trials located in SA and Victoria (23 trials total, 2018-2020).



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LEADER[Ⓛ] IMI Lentil



Table 1: Agronomic and disease characteristics of GIA Leader[Ⓛ] compared with other lentil varieties

	Vigour	Flower time	Maturity	Lodging resistance	Pod drop	Shattering	Ascochyta blight			BGM#
							Hurricane virulent#	Seed infection %*	Nipper virulent#	
GIA Leader[Ⓛ]	Mod	Mid-late	Mid-late	MR	MR	MRR	RMR	0.39	RMR	MR(p)
PBA Hallmark XT [Ⓛ]	Mod-good	Mid	Mid	MR	MR	R	MRMS	3.30	RMR	MR
PBA Hurricane XT [Ⓛ]	Mod	Mid	Mid	MR	MR	R	MRMS	2.91	RMR	MS
PBA HighlandXT [Ⓛ]	Mod-good	Early	Early-mid	MR	MR	MR	MR	0.52	MR	MS
PBA Jumbo2 [Ⓛ]	Mod-good	Mid	Mid	MRMS	MR	R	R	0.28	R	RMR

Legend: (p) = provisional, #Data source NVT National Pathology Ratings www.grdc-nvt.com.au,

*Data source Central Ag Solutions Arthurlton, Yorke Peninsula, SA 2020, % AB infected seed on harvested grain, LSD (0.05)=1.56

Key: S=susceptible, MS=moderately susceptible, Mod=moderate, MR=moderately resistant, R=resistant.

DISEASE

GIA Leader[Ⓛ] has the unique combination of ascochyta blight and botrytis grey mould resistance when compared to all other IMI tolerant lentil varieties. GRDC NVT pathology rates GIA Leader[Ⓛ] resistant/moderately resistant (RMR) for both the Hurricane and Nipper virulence strains of ascochyta blight and moderately resistant (MR) (provisional) for botrytis grey mould. Disease management for GIA Leader[Ⓛ] should follow the GRDC Lentil Grownotes and the Lentil Ute Guide (www.grdc.com.au) recommendations for the relevant disease ratings.

Premature dry down and stemphylium fungus were observed in the variety PBA Jumbo2[Ⓛ] in commercial paddocks and breeding trials on the upper Yorke Peninsula of SA in 2020. Fungicide experiments identified a yield loss of approximately 12% in some varieties where this phenomenon was observed. GIA Leader[Ⓛ] exhibited lower levels of stemphylium symptoms and premature dry down than PBA Jumbo2[Ⓛ] in all breeding trials where this phenomenon occurred.

GIA leader[Ⓛ] has not been assessed for virus resistance, or boron, salinity, frost and heat tolerance ratings and should be treated as susceptible, or intolerant, for these characteristics.

GRAIN QUALITY & MARKETING

GIA Leader[Ⓛ] produces a medium sized red lentil grain with a grey seed coat. Grain is well suited to the medium sized “Nugget” type red lentil human food markets. GIA Leader[Ⓛ] has consistently produced a grain size similar to the standard medium sized red lentil, PBA Bolt[Ⓛ], as measured by average 100 grain weight. The grain size of GIA Leader[Ⓛ] is slightly larger than PBA Hallmark XT[Ⓛ], larger than PBA HighlandXT[Ⓛ] and PBA Hurricane XT[Ⓛ], and smaller than PBA Jumbo2[Ⓛ] (approximately 10%). The high level of disease resistance in GIA Leader[Ⓛ] will assist growers in minimizing poor colour and achieving market acceptable grain quality.

Grain of GIA Leader[Ⓛ] should be segregated for marketing purposes unless otherwise stated, however its medium sized grain and grey seed coat colour is consistent with traditional medium sized marketed varieties such as Nugget, PBA Bolt[Ⓛ] and PBA Ace[Ⓛ].



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Table 2: Grain characteristics of GIA Leader[Ⓟ] compared with other lentil varieties

Variety	Market category	Seed Shape	Seed coat colour	Cotyledon colour	Seed size (g 100 seeds)#
PBA Hurricane XT [Ⓟ]	SRP	Round	Grey	Red	3.35
PBA HighlandXT [Ⓟ]	SRP	Round	Grey	Red	3.71
PBA Hallmark XT [Ⓟ]	MRS	Lens	Grey	Red	4.05
PBA Bolt [Ⓟ]	MRS	Lens	Grey	Red	4.28
GIA Leader[Ⓟ]	MRS	Lens	Grey	Red	4.25
PBA Jumbo2 [Ⓟ]	LRS	Lens	Grey	Red	4.82

Legend: SRP=small red premium round, MRS=medium red split, LRS=large red split. #Data source NVT Trials 2019 & 2020, 27 trial sites across western and southern Australia, www.grdc-nvt.com.au

SEED PROTECTION & ROYALTIES

GIA Leader[Ⓟ] is protected under Plant Breeders Rights (PBR) legislation. Growers can only retain seed for their own sowing or for sale as a commodity. GIA Leader[Ⓟ] is open marketed with an End Point Royalty (EPR) of \$5.94/t (including GST), applying upon delivery of this variety.

BREEDING

GIA Leader[Ⓟ] was developed by Grains Innovation Australia (GIA) from the popular variety PBA Jumbo2[Ⓟ] using conventional breeding techniques and is commercialised by PB Seeds. Seed is available from 2021.

SEED ENQUIRIES & AGRONOMIC INFORMATION

Seed Enquiries: PB Seeds-Head Office, 1324 Blue Ribbon Road Kalkee VIC 3401, Ph 03 5383 2213, admin@pbseeds.com.au, www.pbseeds.com.au.

VARIETY AND AGRONOMIC INFORMATION

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