

# 2017 WHEAT VARIETIES



QUEENSLAND



National  
Variety  
Trials  
A GRDC INITIATIVE



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Compiled by Douglas Lush, with contributions by Clayton Forknall (Department of Agriculture and Fisheries), and Stephen Neate and Jason Sheedy (University of Southern Queensland). Additional information provided by wheat breeding and marketing companies.

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# QUEENSLAND WHEAT VARIETIES 2017

## KEY POINTS

Five new varieties were released in 2016 suitable for production in Queensland:

- Coolah<sup>db</sup>
- DS Faraday<sup>db</sup>
- LongReach Reliant<sup>db</sup>
- Sunmax<sup>db</sup>
- DBA Aurora<sup>db</sup> (durum variety)

## Introduction

National Variety Trials seek to collect the most relevant varieties for each region and test them alongside the elite lines from the breeding programs. For all the information on the released varieties in the NVT trials in Queensland visit the NVT website ([www.nvtonline.com.au](http://www.nvtonline.com.au)).

## 2016 season

Promising rainfall was forecast for April and May but did not eventuate and moisture-seeking options in these months tended towards chickpea plantings rather than wheat. Therefore very little early-season wheat was planted. Widespread rainfall in June resulted in good conditions for main-season wheat planting across most regions of Queensland. Rainfall totals for the months of June and July were well above average and created good early-season growth and potential for high yields. Mild spring conditions enabled the high yield potential to be realised but it did push harvest back a few weeks.

## Sensitivity of wheat varieties to herbicides

Since 2003 the herbicide tolerance screening project, run by the Queensland Department of Agriculture and Fisheries, has contributed tables that outline the sensitivity of wheat varieties to herbicides. The project management was altered last year and the 2016 data has not been incorporated as there is a review of the analysis for the project. As no new data is available the tables have not been included in this booklet but historical information can be accessed through the NVT website ([www.nvtonline.com.au](http://www.nvtonline.com.au)).

## Disease characteristics

For some parts of Queensland there was late plantings due to lack of early rains. However, once the rains started, south-east Queensland had the second-wettest winter on record and that

continued into spring. For those that never managed to sow in the optimum window, there were further delays due to the wet winter affecting paddock access. Despite the wet winter there were not widespread losses due to diseases.

**Yellow spot** was common on seedlings, but in most cases the disease did not progress as the plants developed through to adult stage and head emergence. Record rains in south-east Queensland and northern New South Wales in late spring saw yellow spot severity increase on the top three leaves of many wheat crops. However, as the crops were in advanced grain-fill when the disease increased, the window of opportunity for fungicide spraying was past. Significant levels of yellow spot inoculum will be present in over-summering wheat stubble so that wheat sown into wheat stubble in 2017 will, in most cases, have enough inoculum to cause seedling disease if conducive conditions are present. Seedling disease alone rarely results in disease losses. For yield losses to occur a wet spring will be needed for the disease to develop on adult plants and affect the top three leaves which are the leaves that drive yield. Previous advice on spraying is still valid: delay decisions on fungicide spraying for yellow spot control until plants are close to heading and when most of the yield-determining leaves have emerged.

**Head diseases.** Reports of trace levels of head diseases were common in 2016. This was due to the wet August and September. Surveys of selected south-east Queensland and northern NSW NVT sites and farmers' crops showed trace levels of fusarium head blight and white grain. Percentages of heads affected were estimated to be in the low single digits and grain samples would have had much lower levels due to shrivelled seed being lost during harvest. It is clear that in wet springs the inoculum is there to infect wheat crops even when the diseases have not been seen in crops for several years.

**False black chaff** was the most common head disease. It is a physiological disorder causing brown/black, slight to extensive striations on the glume. It is a physiological disease associated with the stem-rust-resistance gene *Sr2*, which is common in Australian cultivars. It varies from season to season, but is most obvious in warm humid springs and in most cases is not thought to result in significant losses.

**Crown rot.** The mild, wet 2016 spring slowed plant maturity, but also disguised the amount of crown rot infection, as the lack of stress from grain-fill onward resulted in few whiteheads or tiller death. Crown rot survives for several seasons on decaying stubble from host cereal crops and from grass weeds in non-host crops. Infection of the stem bases of the young crop is high in a wet autumn/winter, but above-ground symptoms are normally only seen when the plant undergoes water stress at the end of the season. In 2016 there was a build up of high levels of crown rot inoculum and potentially could cause losses if 2017 has a normal to wet spring to initiate infection, followed by a dry finish. The Predicta<sup>®</sup>B service (<http://pir.sa.gov.au/research/services/>)

molecular\_diagnostics/predicta\_b) can provide information about potential crown rot levels in the soil so that decisions about sowing a non-host crop can be made.

**Rusts.** Historically, the spread of the stripe rust occurs in spring and, due to increasing temperatures, usually slows down from late October to early November. However, development and spread of wheat stripe rust in crops was delayed in 2016 and unsprayed crops showed little stripe rust so that standard spray applications kept the disease well controlled. As in recent years, pathotype 134 E16 A+ 17+ was the common pathotype along the east coast.

Leaf rust was seen in central Queensland, south-east Queensland and northern NSW in late winter. The pathotype was predominantly 104-1,3,4,6,7,8,10,12+Lr37, which was identified first in South Australia in 2014 and has since spread throughout the eastern cropping regions and as a result has increased the severity and incidence of leaf rust in Queensland. The 2016 Queensland variety guide was the first to update leaf-rust-resistance ratings to take into account the new pathotype.

Stem rust was not a problem in Queensland in 2016.

From seedling stage onward, regular scouting of crops should be made to determine if rust foci are developing and if the cultivar has less than an MR (moderately resistant) level of resistance, fungicide application should be considered.

**Root-lesion nematodes (RLN)** are widespread in the northern grain region and can significantly reduce wheat yields. RLN is also hosted by many non-cereal crops so that the absence of a winter-cereal crop in recent seasons does not mean that there are low levels of nematodes in the soil. A soil testing service for RLN is available through the Predicta<sup>®</sup>B service ([http://pir.sa.gov.au/research/services/molecular\\_diagnostics/predicta\\_b](http://pir.sa.gov.au/research/services/molecular_diagnostics/predicta_b)). A test should be considered prior to planting if you do not know which species or the levels of the nematode that are on your farm. If wheat is to be sown in nematode-infested soil, the tolerant varieties (listed as T, TMT or MT and highlighted in green) should be considered for best yield. Also choose a variety that has a higher resistance rating to maximise yield and leave fewer nematodes in the soil to attack the next crop to be planted. The reaction of a wheat variety may differ to the two species of RLN, *Pratylenchus thornei* and *P. neglectus*. This should be checked in Tables 2A and 2B.

To avoid **bunt**, wheat seed should be treated with a fungicidal dressing if it has been saved from a crop grown from untreated seed.

Only varieties deemed suitable for conditions in the northern region (Queensland and northern NSW) have been included in this guide. If a variety is not mentioned, there is either no commercial seed available or there is concern that it may not carry robust rust resistances and may compromise the Queensland wheat industry. If seed of varieties not mentioned in this guide is obtained please ensure that you are provided with current and reliable rust information by the vendor.

## General notes

### Bread and noodle wheats (*Triticum aestivum*)

Bread and noodle wheats are the dominant types of wheat planted throughout Queensland and Australia. They fall into a number of classifications that have different receival standards, from Australian Prime Hard (APH) with high-quality requirements through to FEED with limited quality requirements. Queensland conditions are conducive to the production of high-quality grain. The breeding and development of new varieties reflects this. Flour milled from APH wheat is used to produce high-protein, Chinese-style, yellow alkaline noodles and Japanese ramen noodles of superior brightness, colour and eating quality. APH flour is also

suitable for the production of high-protein, high-volume breads and wonton dumpling skins. APH can also be blended with lower-protein wheats to produce flours suitable for a wide range of baked products.

### Durum wheats (*Triticum durum*)

Durum wheats are used in the production of pasta products, where the main requirement is grain of high protein – preferably above 13% and a minimum of 11.5%. Grain appearance is also important; downgrading can occur due to higher screenings (maximum 5% for ADR1), low percentage of hard vitreous kernels (HVK, minimum 80% for ADR1), black point and weather damage. Acceptable levels of black point are as follows: ADR1 3%, ADR2 5% and ADR3 20%.

### Soft wheats

Soft wheats include two distinct types: the Soft Biscuit type (9 to 10% protein), suitable for use in the biscuit industry and the Soft Noodle type (9 to 11.5% protein), suitable for the manufacture of cakes, pastry and white salted noodles.

Soft Biscuit types are best grown using irrigation and suitable crop management to achieve target protein levels. Capped domestic market volumes exist and growers are therefore urged to seek pre-plant contracts.

### Feed wheats

Feed wheats are generally high-yielding varieties that have quality limitations for use in flour and noodle production.

### Forage wheats

Forage wheats are commonly of the winter type and have the major advantage of adaptability to a wide range of sowing times. The winter habit delays maturity in early sowings, thus extending the period of vegetative growth. Maturity varies once vernalisation requirements have been met. Winter wheats are commonly sown in late March or early April.

### Effects of grain defects on end product quality

**Black point** – Excessive levels may result in specky semolina or discoloured bran, wheatgerm and divided flours (pastry flour). End products are often visually unattractive; this is particularly the case with durum products such as pasta.

**Sprouting** – (low falling number) – Finished product is affected by high levels of alpha amylase present in the flour, which causes keyholing in bread, fragile noodles, dark discoloured biscuits and cakes. Minimal impact on pasta except at FN (Falling Numbers) less than 200 seconds.

**Frost damage** – Can cause low FN, reduced flour yield, increased grain hardness and very poor baking performance – bread, biscuits and breakfast cereals.

**Excess screenings** – Reduced grain and flour yield (loss of profitability) but has little effect on end product quality (excluding excess screenings due to frost and heat stress damage). During the 2002 harvest it was observed that a number of samples tested with high screenings had poor baking quality. This was attributed to heat stress damage during grain filling, which was also believed to be responsible for the high screenings.

**Low density (Test weight, kg/hl)** – Reduced grain and flour yield (loss of profitability), has little effect on end product quality (excluding low density due to frost and heat stress damage).

**Heat damage** – (due to drying at temperatures above 60 degrees celsius) – flour produced from this grain is of poor baking quality and baked products are often unsaleable.

**TABLE 1** Planting time suggestions.

District	Varieties in order of maturity (slow to quick) within each broad maturity group	Planting times by weeks															
		April				May				June				July			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Central Highlands</b> <b>Dawson Callide</b> Low frost risk (higher slopes or more northern areas)	Strzelecki <sup>(d)</sup> , Suntime <sup>(d)</sup> , EGA Gregory <sup>(d)</sup> , LongReach Flanker <sup>(d)</sup> , LongReach Lancer <sup>(d)</sup> , Coolah <sup>(d)</sup> , EGA Bellaroi <sup>(d)</sup> , DS Faraday <sup>(d)</sup>	E	E	C	C	C	C	C	L								
	EGA Bounty <sup>(d)</sup> , EGA Burke <sup>(d)</sup>	E	E	E	C	C	C	C	C	L	L						
	Sunguard <sup>(d)</sup> , Baxter <sup>(d)</sup> , Sunvale <sup>(d)</sup> , Caparoi <sup>(d)</sup>	E	E	E	E	C	C	C	C	L	L						
	LongReach Gauntlet <sup>(d)</sup> , Mitch <sup>(d)</sup> , LongReach Reliant <sup>(d)</sup> , Lang <sup>(d)</sup> , Kennedy <sup>(d)</sup> , EGA Kidman <sup>(d)</sup> , Elmore CL Plus <sup>(d)</sup> , Hyperno <sup>(d)</sup> , GBA Hunter <sup>(d)</sup> , DBA Aurora <sup>(d)</sup>	E	E	E	E	C	C	C	C	C	C	L	L				
	Hartog, DBA Lillaro <sup>(d)</sup> , LongReach Crusader <sup>(d)</sup> , Suntime <sup>(d)</sup> , LongReach Spitfire <sup>(d)</sup> , Wallup <sup>(d)</sup> , Livingston <sup>(d)</sup> , EGA Stampede <sup>(d)</sup> , Jandaroi <sup>(d)</sup> , Sunmate <sup>(d)</sup> , LongReach Dart <sup>(d)</sup>		E	E	E	E	C	C	C	C	C	L	L				
<b>Central Highlands</b> <b>Dawson Callide</b> High frost risk (river flats or areas known to be more frost-prone)	Strzelecki <sup>(d)</sup> , Suntime <sup>(d)</sup> , EGA Gregory <sup>(d)</sup> , LongReach Flanker <sup>(d)</sup> , LongReach Lancer <sup>(d)</sup> , Coolah <sup>(d)</sup> , EGA Bellaroi <sup>(d)</sup> , DS Faraday <sup>(d)</sup>			E	E	C	C	C	C	L							
	EGA Bounty <sup>(d)</sup> , EGA Burke <sup>(d)</sup>				E	E	C	C	C	C	L						
	Sunguard <sup>(d)</sup> , Baxter <sup>(d)</sup> , Sunvale <sup>(d)</sup> , Caparoi <sup>(d)</sup>					E	E	C	C	C	L	L					
	LongReach Gauntlet <sup>(d)</sup> , Mitch <sup>(d)</sup> , LongReach Reliant <sup>(d)</sup> , Lang <sup>(d)</sup> , Kennedy <sup>(d)</sup> , EGA Kidman <sup>(d)</sup> , Elmore CL Plus <sup>(d)</sup> , Hyperno <sup>(d)</sup> , GBA Hunter <sup>(d)</sup> , DBA Aurora <sup>(d)</sup>					E	E	C	C	C	C	L	L				
	Hartog, DBA Lillaro <sup>(d)</sup> , LongReach Crusader <sup>(d)</sup> , Suntime <sup>(d)</sup> , LongReach Spitfire <sup>(d)</sup> , Wallup <sup>(d)</sup> , Livingston <sup>(d)</sup> , EGA Stampede <sup>(d)</sup> , Jandaroi <sup>(d)</sup> , Sunmate <sup>(d)</sup> , LongReach Dart <sup>(d)</sup>					E	E	C	C	C	C	C	L				
<b>Maranoa, Balonne</b> Western Downs – South West	EGA Eaglehawk <sup>(d)</sup> , Sunmax <sup>(d)</sup> , Sunzell <sup>(d)</sup>		E	C	C	L											
	Strzelecki <sup>(d)</sup> , Suntime <sup>(d)</sup>			E	C	C	C	C	L								
	LongReach Lancer <sup>(d)</sup> , Coolah <sup>(d)</sup> , EGA Gregory <sup>(d)</sup> , LongReach Flanker <sup>(d)</sup> , Sunvale <sup>(d)</sup> , EGA Bounty <sup>(d)</sup> , LongReach Gauntlet <sup>(d)</sup> , EGA Burke <sup>(d)</sup> , Baxter <sup>(d)</sup> , DS Faraday <sup>(d)</sup>				E	E	C	C	C	C	C	L					
	EGA Kidman <sup>(d)</sup> , Sunguard <sup>(d)</sup> , Mitch <sup>(d)</sup> , LongReach Reliant <sup>(d)</sup> , Elmore CL Plus <sup>(d)</sup> , Lang <sup>(d)</sup> , EGA Bellaroi <sup>(d)</sup> , Hyperno <sup>(d)</sup> , GBA Hunter <sup>(d)</sup> , DBA Aurora <sup>(d)</sup>					E	C	C	C	C	C	C	L	L			
	Kennedy <sup>(d)</sup> , Suntime <sup>(d)</sup> , Jandaroi <sup>(d)</sup> , Hartog, DBA Lillaro <sup>(d)</sup> , Wallup <sup>(d)</sup> , Caparoi <sup>(d)</sup> , EGA Stampede <sup>(d)</sup> , LongReach Spitfire <sup>(d)</sup> , LongReach Crusader <sup>(d)</sup> , Livingston <sup>(d)</sup> , Sunmate <sup>(d)</sup> , LongReach Dart <sup>(d)</sup>						E	C	C	C	C	C	L	L			
<b>Darling Downs</b> (Northern, Uplands)	EGA Eaglehawk <sup>(d)</sup> , Sunmax <sup>(d)</sup> , Sunzell <sup>(d)</sup>				E	C	C	C	L								
	Strzelecki <sup>(d)</sup> , Suntime <sup>(d)</sup> , LongReach Lancer <sup>(d)</sup> , Coolah <sup>(d)</sup> , EGA Gregory <sup>(d)</sup> , LongReach Flanker <sup>(d)</sup> , Sunvale <sup>(d)</sup> , DS Faraday <sup>(d)</sup>						E	C	C	L							
	EGA Bellaroi <sup>(d)</sup> , Hyperno <sup>(d)</sup> , LongReach Gazelle <sup>(d)</sup> , EGA Bounty <sup>(d)</sup> , LongReach Gauntlet <sup>(d)</sup> , EGA Burke <sup>(d)</sup> , Baxter <sup>(d)</sup>						E	E	C	C	C	C	L				
	Lang <sup>(d)</sup> , Sunguard <sup>(d)</sup> , Mitch <sup>(d)</sup> , LongReach Reliant <sup>(d)</sup> , Elmore CL Plus <sup>(d)</sup> , EGA Kidman <sup>(d)</sup> , GBA Hunter <sup>(d)</sup> , DBA Aurora <sup>(d)</sup>							E	E	C	C	C	C	C	L	L	
	Kennedy <sup>(d)</sup> , Suntime <sup>(d)</sup> , LongReach Impala <sup>(d)</sup> , Jandaroi <sup>(d)</sup> , Hartog, DBA Lillaro <sup>(d)</sup> , Wallup <sup>(d)</sup> , Caparoi <sup>(d)</sup> , EGA Stampede <sup>(d)</sup> , LongReach Spitfire <sup>(d)</sup> , LongReach Crusader <sup>(d)</sup> , Livingston <sup>(d)</sup> , Sunmate <sup>(d)</sup> , LongReach Dart <sup>(d)</sup>								E	E	C	C	C	C	L	L	
<b>Darling Downs</b> High frost risk (Central, Southern)	EGA Eaglehawk <sup>(d)</sup> , Sunmax <sup>(d)</sup> , Sunzell <sup>(d)</sup>					E	C	C	L								
	Strzelecki <sup>(d)</sup> , Suntime <sup>(d)</sup> , LongReach Lancer <sup>(d)</sup> , Coolah <sup>(d)</sup> , EGA Gregory <sup>(d)</sup> , LongReach Flanker <sup>(d)</sup> , Sunvale <sup>(d)</sup> , DS Faraday <sup>(d)</sup>							E	C	C	C	L					
	EGA Bellaroi <sup>(d)</sup> , Hyperno <sup>(d)</sup> , LongReach Gazelle <sup>(d)</sup> , EGA Bounty <sup>(d)</sup> , LongReach Gauntlet <sup>(d)</sup> , EGA Burke <sup>(d)</sup> , Baxter <sup>(d)</sup>								E	C	C	C	C	L			
	Lang <sup>(d)</sup> , Sunguard <sup>(d)</sup> , Mitch <sup>(d)</sup> , LongReach Reliant <sup>(d)</sup> , Elmore CL Plus <sup>(d)</sup> , EGA Kidman <sup>(d)</sup> , GBA Hunter <sup>(d)</sup> , DBA Aurora <sup>(d)</sup>									E	E	C	C	C	C	L	
	Kennedy <sup>(d)</sup> , Suntime <sup>(d)</sup> , LongReach Impala <sup>(d)</sup> , Jandaroi <sup>(d)</sup> , Hartog, DBA Lillaro <sup>(d)</sup> , Wallup <sup>(d)</sup> , Caparoi <sup>(d)</sup> , EGA Stampede <sup>(d)</sup> , LongReach Spitfire <sup>(d)</sup> , LongReach Crusader <sup>(d)</sup> , Livingston <sup>(d)</sup> , Sunmate <sup>(d)</sup> , LongReach Dart <sup>(d)</sup>										E	C	C	C	C	L	
<b>Central Burnett</b> <b>South Burnett &amp; West Moreton</b>	EGA Eaglehawk <sup>(d)</sup> , Sunmax <sup>(d)</sup> , Sunzell <sup>(d)</sup> , Strzelecki <sup>(d)</sup> , Suntime <sup>(d)</sup> , LongReach Lancer <sup>(d)</sup> , Coolah <sup>(d)</sup> , EGA Gregory <sup>(d)</sup> , LongReach Flanker <sup>(d)</sup> , DS Faraday <sup>(d)</sup>					E	E	C	C	C	L						
	Sunvale <sup>(d)</sup> , LongReach Gazelle <sup>(d)</sup> , EGA Bounty <sup>(d)</sup> , LongReach Gauntlet <sup>(d)</sup> , EGA Burke <sup>(d)</sup> , Baxter <sup>(d)</sup> , EGA Kidman <sup>(d)</sup> , Sunguard <sup>(d)</sup> , Mitch <sup>(d)</sup> , LongReach Reliant <sup>(d)</sup> , Elmore CL Plus <sup>(d)</sup> , Lang <sup>(d)</sup> , EGA Bellaroi <sup>(d)</sup> , Hyperno <sup>(d)</sup> , GBA Hunter <sup>(d)</sup> , DBA Aurora <sup>(d)</sup>							E	E	C	C	C	L	L			
	Kennedy <sup>(d)</sup> , Suntime <sup>(d)</sup> , LongReach Impala <sup>(d)</sup> , Jandaroi <sup>(d)</sup> , Hartog, DBA Lillaro <sup>(d)</sup> , Wallup <sup>(d)</sup> , Caparoi <sup>(d)</sup> , EGA Stampede <sup>(d)</sup> , LongReach Spitfire <sup>(d)</sup> , LongReach Crusader <sup>(d)</sup> , Livingston <sup>(d)</sup> , Sunmate <sup>(d)</sup> , LongReach Dart <sup>(d)</sup>								E	C	C	C	L	L			

Frost damage may be minimised by planting varieties within the range of dates recommended (see Table 1). This table was compiled from presently available data.

## Planting categories

**E** = Early

Early-planted crops face the risk of frost damage from pre-flowering to grain-fill. Therefore, plant early in areas of low frost risk, such as higher slopes, and reduce the risk of frost damage by planting more than one variety and by varying planting times.

In Central Queensland, warm weather encourages rapid early plant development. Where possible, plant shallow into moisture and use press-wheels to aid establishment. Increase the plant population for all varieties to compensate for reduced tillering in warm growing conditions. Maturity groupings may differ from district to district, particularly from central to southern Queensland.

**C** = Conventional

Varieties sown at their most appropriate planting times flower after the main frost period, although late frosts may still cause damage.

**L** = Late

The reliability of yield can be low following a very late planting due to high temperatures during flowering and grain filling.

† Plant wheat varieties two weeks earlier in the West Moreton

TABLE 2A Bread and noodle wheats – disease and agronomy ratings.

Variety (in maturity order, slow to quick)	Wheat Quality Australia (WQA) maximum quality classification <sup>1</sup>	Disease ratings (www.nvtonline.com.au)										Agronomy			
		Yellow spot	Crown rot <sup>a</sup>	Common root rot	Root lesion nematodes			Stem rust	Leaf rust	Stripe rust	Black point <sup>#</sup>	Lodging <sup>\$</sup>	Shattering	Sprouting resistance	
					<i>P. thornei</i> tolerance <sup>*</sup>	<i>P. thornei</i> resistance % <sup>*</sup>	<i>P. neglectus</i> tolerance <sup>*</sup>								<i>P. neglectus</i> resistance % <sup>*</sup>
<b>BREAD AND NOODLE WHEATS</b>															
EGA Eaglehawk <sup>b</sup>	AH	MSS	MSS	MSS	MT	MS	MRMR	RMR	RMR	MRMS	MRMS(p)	MSS	-	MSS (p)	
Sunmax <sup>b</sup>	APH	MS	-	MSS	MTMI (p)	MRMS (p)	RMR	RMR	RMR	RMR	-	-	-	-	
Sunzell <sup>b</sup>	AH	MSS	MSS	SVS	MT	MS	MR	MR	MS	MS	S	MRMS	-	-	
Strzelecki <sup>b</sup>	APH	MS	S	MRMS	I	SVS	MTMI	S	MRMS	MR	MS	MS	RMR	S	
Suntime <sup>b</sup>	APH	MSS	MS	S	TMT	MRMS	MTMI (p)	MSS	MR	RMR	MS	MS (p)	-	-	
LongReach Lancer <sup>b</sup>	APH	MS	MSS	S	TMT	MS	MTMI (p)	S	R	RMR	RMR(p)	MRMS	-	S	
Coolah <sup>b</sup>	APH	MSS	-	S	TMT(p)	MRMS (p)	MT (p)	MSS (p)	RMR	RMR	-	-	-	-	
EGA Gregory <sup>b</sup>	APH	S	S	MSS	TMT	MSS	MT	MSS	MR	MR	MS	MS	RMR	S	
DS Faraday <sup>b</sup>	APH	S	-	S	MTMI (p)	MSS(p)	MTMI (p)	S (p)	RMR	RMR	MSS	-	-	-	
LongReach Flanker <sup>b</sup>	APH	MSS	MSS	MSS	TMT(p)	MS(p)	MTMI (p)	S (p)	RMR	RMR	-	MRMS (p)	-	-	
Sunvale <sup>b</sup>	APH	MSS	MSS	MSS	MTMI	MSS	MI	MSS	RMR	MR	RMR	S	RMR	S	
EGA Bounty <sup>b</sup>	AH	MS	S	S	MT	MS	MTMI (p)	MSS	MR	MR	MSS	MSS	-	S	
LongReach Gaumite <sup>b</sup>	APH	MSS	MS	MSS	MT	MR	MTMI (p)	S	RMR	MRMS	MRMS	MRMS	MR	S	
EGA Burke <sup>b</sup>	APH	MSS	S	MSS	MT	MS	MTMI (p)	MSS	MR	MSS	RMR	S	*MRMS	S	
EGA Kidman <sup>b</sup>	APH	MSS	MSS	MS	MTMI	MS	MI	SVS	RMR	MRMS	MSS	MRMS	-	S	
Sunguard <sup>b</sup>	AH	MSS	MS	MSS	MT	MSS	MTMI (p)	S	R	MR	MR	MRMS	MR	S	
Mitch <sup>b</sup>	AH	MS	MS	MS	MT	MSS	T (p)	S	MRMS	MR	-	MR	-	-	
LongReach Reliant <sup>b</sup>	APH	S	-	MS	TMT (p)	MSS (p)	MI (p)	S (p)	R	MRMS	MS	MSS	MRMS	S	
Elmore CL Plus <sup>b</sup>	AH	S	S	S	MI	MSS	MT (p)	S	MR	MRMS	MS	MRMS	RMR	S	
Baxter <sup>b</sup>	APH	S	MS	MSS	MT	MSS	MI	MSS	MRMS	S	MS	MSS	MR	S	
Lang <sup>b</sup>	APH	MSS	MSS	MRMS	MI	MSS	MI	S	R	MR	RMR	MRMS	RMR	S	
Kennedy <sup>b</sup>	APH	MSS	S	MS	MTMI	S	MTMI	S	MR	MSS	R	MRMS	RMR	S	
Suntop <sup>b</sup>	APH	MSS	MSS	MS	TMT	MRMS	MT (p)	MSS	MR	MRMS	MR	MR	RMR	SVS	
Hartog	APH	MS	S	MS	MTMI	MS	MTMI	S	MRMS	MS	MRMS	MS	RMR	S	
Wallup <sup>b</sup>	APH	MSS	S	MS	MT	MRMS	MT (p)	MRMS	SVS	MRMS	MRMS	RMR	RMR	S	
LongReach Spiffire <sup>b</sup>	APH	S	MS	MSS	MTMI	MS	MTMI	MSS	MR	MR	S	MRMS	MR	S	
LongReach Crusader <sup>b</sup>	APH	MS	S	MS	MI	MSS	MI (p)	SVS	RMR	MS	RMR	MR	MR (p)	S	
Livingston <sup>b</sup>	AH	MSS	S	S	MT	MS	MI (p)	S	MRMS	MSS	MRMS (p)	MR	-	S	
Sunmate <sup>b</sup>	APH	MSS	MSS	MS	TMT	MRMS	MTMI (p)	S	MRMS	MS	-	MS (p)	-	-	
LongReach Dart <sup>b</sup>	APH	MS	MSS	MS	MI	MS	MI (p)	MSS	MR	MR	MRMS (p)	RMR	MR (p)	S	



**TABLE 2B Speciality wheats – disease and agronomy ratings.**

Variety (in maturity order, slow to quick)	Wheat Quality Australia (WQA) maximum quality classification <sup>1</sup>	Disease ratings (www.nvtonline.com.au)							Agronomy						
		Yellow spot	Crown rot <sup>a</sup>	Common root rot	Root lesion nematodes			Stem rust	Leaf rust	Stripe rust	Black point <sup>#</sup>	Lodging <sup>\$</sup>	Shattering	Sprouting resistance	
					<i>P. thornei</i> tolerance <sup>*</sup>	<i>P. thornei</i> resistance %	<i>P. neglectus</i> tolerance <sup>*</sup>								<i>P. neglectus</i> resistance %
<b>DURUM WHEATS</b>															
EGA Bellaroi <sup>db</sup>	ADR	MR	VS	MR	MTMI	MR	MII	MS	MR	MRMS	MR	RMR	MRMS	R	MS
Hyperno <sup>db</sup>	ADR	MR	VS	RMR	TMT	RMR	MT (p)	MS	RMR	RMR (p)	RMR	MRMS (p)	S	-	MRMS
DBA Aurora <sup>db</sup>	ADR	MR	SVS (p)	-	MT	RMR	IVI (p)	MRMS	RMR	RMR (p)	RMR	MSS	MS	-	-
Caparoi <sup>db</sup>	ADR	MR	VS	MR	TMT	MR	MI (p)	MSS	RMR	RMR (p)	MR	-	MRMS	-	-
Jandaroi <sup>db</sup>	ADR	MRMS	VS	MR	MTMI	MRMS	MI (p)	MS	MR	MRMS (p)	MR	RMR	MSS	MR	RMR
DBA Lilliaroi <sup>db</sup>	ADR	MRMS	SVS (p)	-	MT	RMR	MII (p)	MRMS	RMR	R	RMR	-	MS	-	-
<b>SOFT WHEATS</b>															
LongReach Gazelle <sup>db</sup>	ASFT	S	SVS	SVS (p)	MII	S	MT (p)	S	MR	MR	MR	MS (p)	MRMS	MR (p)	S
LongReach Impala <sup>db</sup>	ASFT	MS	MSS (p)	MS	MII	S	MTMI (p)	S	RMR	SVS	MR	MRMS	MRMS	MR (p)	MS (p)
<b>FEED WHEATS</b>															
GBA Hunter <sup>db</sup>	FEED	MR	MSS	MS	MT	S	MT	S	RMR	-	MRMS	MS (p)	RMR	RMR	S (p)
EGA Stampe <sup>db</sup>	FEED	MSS	SVS	MS	IVI	S	MT (p)	MSS	RMR	MRMS	MR	MRMS	MRMS	-	MSS
<b>FORAGE WHEATS</b>															
Brennan <sup>db</sup>	FEED	MRMS	-	-	-	SVS	-	S	MS	-	RMR	MR	-	-	-
Manning <sup>db</sup>	FEED	MRMS	VS	SVS	-	S	-	MSS	MR	MRMS	RMR	-	-	-	-
SQP Revenue <sup>db</sup>	FEED	MS	S	SVS	-	MSS	-	MSS	RMR	SVS	R	S	-	-	-
Petrel	ASW	MS	MSS (p)	MRMS	-	S	-	S	MRMS	MSS	MS	-	-	-	-

**Legend: Disease and agronomy tables (refers to Tables 2A & 2B)**

An alpha scale is used to indicate levels of resistance to diseases and other conditions.

R (Resistant) = 9

RMR (Resistant – Moderately Resistant) = 8

MR (Moderately Resistant) = 7

MRMS (Moderately Resistant – Moderately Susceptible) = 6

MS (Moderately Susceptible) = 5

MSS (Moderately Susceptible – Susceptible) = 4

S (Susceptible) = 3

SVS (Susceptible – Very Susceptible) = 2

VS (Very Susceptible) = 1

- indicates that a rating is not available.

■ – High Risk   ■ – Medium Risk   ■ – Low Risk

<sup>1</sup> WQA maximum classifications describe suitability for export markets and not always reflect the varietal preference of domestic millers. (Note: APH-Australian Prime Hard, AH-Australian Hard). Please refer to Grain Trade Australia - 2016/2017 Wheat Statement of Standards for more information.

<sup>2</sup> RLN Tolerance – The root-lesion nematode (*P. thornei* & *P. neglectus*) tolerance ratings that appear in this planting guide are based on field data collected in the northern grains region rather than national consensus ratings.

<sup>3</sup> RLN Resistance – The root-lesion nematode (*P. thornei* & *P. neglectus*) resistance ratings that appear in this planting guide are national consensus ratings based on glasshouse and field data collected in the northern and southern grain regions.

<sup>4</sup> Black point will not cause a reduction in yield but may result in grain receiving a different classification.

<sup>5</sup> Lodging ratings are primarily based on data from the GRDC funded 'Better Irrigated Wheat Agronomy' research project. These ratings may not accurately reflect performance in dry land environments, as lodging is unlikely to occur when yields are below 5t/ha.

<sup>6</sup> (p) RLN data relating to these varieties is based on less than 4 years of testing and is to be considered provisional information.

<sup>7</sup> Crown rot ratings reflected 2015 consensus data. 2016 data was not available at time of publishing.

**TABLE 3 Varietal details.**

Variety	Pedigree	Varietal information				Comments (as supplied by breeding companies)	
		Plant Breeders Rights	End Point Royalties	Licensee	Released by <sup>oo</sup>		Year of release
<b>BREAD AND NOODLE WHEATS</b>							
EGA Eaglehawk <sup>(b)</sup>	Sunbrook*4/VPM	(b)	✓	Heritage Seeds	EGA	2007	Sunbrook replacement for early planting with good subsoil moisture. Moderately tolerant to <i>P. thornei</i> .
Sunmax <sup>(b)</sup>	CRW142.16/2*Sunzell	(b)	✓	AGT	AGT	2016	With an APH classification and slow maturity, Sunmax <sup>(b)</sup> is one of the best planting options for the northern zone when there is an early break in the season.
Sunzell <sup>(b)</sup>	Sunbrook*3/Sunstate	(b)	✓	AGT	AGT	2007	Slower variety similar in maturity to Sunbri. Best suited to Darling Downs and Goondwindi regions.
Strzelecki <sup>(b)</sup>	Vicam/4*Batavia	(b)	✓	Heritage Seeds	DPI&F	2000	Moderately resistant to common root rot but not suitable for <i>P. thornei</i> infested soil.
Suntime <sup>a</sup>	SUN457A/SUN405B	(b)	✓	AGT	AGT	2015	An APH disease resistant variety for Anzac Day planting.
LongReach Lancer <sup>(b)</sup>	VI84/Chara//Chara/3/Lang	(b)	✓	Advanta Seeds	LPB	2013	Slower maturing APH Spring Wheat with a compact canopy, solid grain quality and rust packages. Similar maturity to Strzelecki and a few days longer than EGA Gregory <sup>(b)</sup> .
Coolah <sup>(b)</sup>	EGA Gregory/VQ2791//EGA Gregory	(b)	✓	AGT	AGT	2016	APH variety adapted to Queensland & NSW, similar to EGA Gregory <sup>(b)</sup> in disease package, physical grain quality and maturity, but with improved grain yield and lodging tolerance.
EGA Gregory <sup>(b)</sup>	Peisart/2*Batavia DH	(b)	✓	Advanta Seeds	EGA	2004	A good early season variety for paddocks with a history of root lesion nematodes.
DS Faraday <sup>(b)</sup>	Gregory/UQ01484//3*Gregory	(b)	✓	Seednet	Dow Seeds	2017	A good early season APH wheat with enhanced PHS tolerances and a solid rust package. Similar maturity to EGA Gregory
LongReach Flanker <sup>(b)</sup>	EGA Gregory//EGA Gregory/Lang	(b)	✓	Advanta Seeds	LPB	2015	APH variety well suited to Queensland with sound disease resistance. Similar grain package, agronomic performance and maturity to EGA Gregory <sup>(b)</sup> with improved yield.
Sunvale <sup>(b)</sup>	Cook*2/VPM1//3*Cook	(b)		AGT	SU	1993	A variety suitable for early planting with good resistance to black point & RLN.
EGA Bounty <sup>(b)</sup>	Batavia/2*Liechardt	(b)	✓	Nuseed	EGA	2008	A high-yielding wheat adapted to Queensland and NSW with a good rust resistance package. Susceptible to common root rot.
LongReach Gauntlet <sup>(b)</sup>	Kukri//Sunvale	(b)	✓	Seednet	LPB	2012	Early to main season APH variety similar in maturity to Sunvale <sup>(b)</sup> . Has good yellow spot and RLN ( <i>P. thornei</i> ) resistance and a solid grain package.
EGA Burke <sup>(b)</sup>	Sunco/2*Hartog	(b)	✓	Advanta Seeds	EGA	2006	A slow variety with excellent yield potential. Disease resistance is provided via a different genetic background to other slow varieties thereby reducing genetic risks.
EGA Kidman <sup>(b)</sup>	Peisart/2*Batavia DH	(b)	✓	Austrains	EGA	2008	APH variety that has quality attributes suited to the sponge and dough markets in Asia.
Sunguard <sup>(b)</sup>	SUN289E/5/2Janz	(b)	✓	AGT	AGT	2011	An AH variety with an excellent disease resistance package. Sunguard <sup>(b)</sup> is R or MR to all current pathotypes of the three rusts and has a level of tolerance to CR & RLN similar to EGA Wylie <sup>(b)</sup> .
Mitcil <sup>(b)</sup>	QT10422/GILES	(b)	✓	AGT	AGT	2014	A very high yielding AH variety for early to mid-May planting with high relative levels of yellow leaf spot and crown rot tolerance.
LongReach Reliant <sup>(b)</sup>	LRPB Crusader/EGA Gregory	(b)	✓	Advanta Seeds	LPB	2016	A very high yielding APH variety with excellent early vigour and robust grain package, well suited to main season planting windows throughout the Queensland cropping zone.
Elmore CL Plus <sup>(b)</sup>	Janz*2/Wilg4//11A//Annuello	(b)	✓	AGT	AGT	2012	Tolerant to Clearfield™ herbicides, Janz type with improved disease resistance and yield.
Baxter <sup>(b)</sup>	QT2327/Cook//QT2804	(b)	✓	Heritage Seeds	DPI&F	1998	A well-adapted variety as its maturity can vary according to location and environmental conditions. Similar to Sunvale in terms of tolerance to root lesion nematodes.
Lang <sup>(b)</sup>	QT3765/Sunco	(b)	✓	Seednet	DPI&F	2000	Similar to Sunco but generally achieves higher yields and has stronger straw. Considered to have superior quality attributes for APH YAN market.
Kennedy <sup>(b)</sup>	Hartog/Veery#5	(b)	✓	Heritage Seeds	DPI&F	1998	Widely grown quick-maturing variety. The short coleoptile length, compared to other varieties, does not adversely affect establishment in average conditions.
Suntop <sup>(b)</sup>	Sunco/2*Pastor//SUN436E	(b)	✓	AGT	AGT	2012	Long term highest yielding main season APH variety in Queensland with a very good disease resistance package.
Hartog	Pavon 'S'			DPI&F	DPI&F	1982	Older established variety.

Wallup <sup>(b)</sup>	Chara/Wyalkatchem	(b)	✓	AGT	AGT	2011	High and stable yield, quick maturing variety with good physical grain quality and solid disease resistance.
LongReach Spitfire <sup>(b)</sup>	Drysdale/Kukri	(b)	✓	Advanta Seeds	LPB	2011	APH variety well suited to Queensland which is slightly quicker than EGA Baxter <sup>(b)</sup> . Provides a good grain package and solid diseases resistance.
LongReach Crusader <sup>(b)</sup>	Sunbrook/H45	(b)	✓	Advanta Seeds	LPB	2008	Quick APH variety with similar maturity to Kennedy <sup>(b)</sup> .
Livingston <sup>(b)</sup>	SUN129A/Sunvale	(b)	✓	AGT	AGT	2008	Quick variety with similar maturity to Ventura. Has a good stripe rust resistance package.
Sunmate <sup>(b)</sup>	Sunco/2*Pastor//SUN436E	(b)	✓	AGT	AGT	2014	Quick APH variety with similar maturity to Spitfire <sup>(b)</sup> but higher-long term yield. Moderate resistance to RLN (P. thomel).
LongReach Dart <sup>(b)</sup>	Sunbrook/Janz//Kukri	(b)	✓	Advanta Seeds	LPB	2012	Very quick maturing variety with low tiller numbers suited to both later plantings and dryer seasons with good adult protection from diseases such as YLS and stripe rust.

#### DURUM WHEATS

EGA Bellaro <sup>(b)</sup>	920405/920274	(b)	✓	Seednet	EGA	2002	Outclassed due to lower yield potential. Very good grain and semolina quality but poor dough strength. Performs very well under irrigation.
Hyperno <sup>(b)</sup>	Kalka sister line/Tamaroi	(b)	✓	AGT	AGT	2009	Highest long term yielding durum variety in Queensland with similar maturity to EGA Bellaro <sup>(b)</sup> . Good semolina colour and colour stability.
DBA Aurora <sup>(b)</sup>	Tamaroi*2/Kalka//RH920318/ Kalka//Kalka*2/Tamaroi	(b)	✓	SADGA	The University of Adelaide	2014	Exceptionally high yielding variety, particularly in the south-east Queensland zone. Similar maturity to Hyperno <sup>(b)</sup> , with good semolina and colour stability attributes. To achieve high protein (>13%), nitrogen inputs need to be carefully managed. Performs very well under irrigation, but this will increase chances of lodging due to very high yield potential.
Caparoi <sup>(b)</sup>	LY2.6.3/930054	(b)	✓	Seednet	NSW DPI	2009	Main season variety, about 1 to 2 weeks slower than Jandaroi <sup>(b)</sup> . Well suited to drier areas and performs well under irrigation.
Jandaroi <sup>(b)</sup>	920777/111566	(b)	✓	Seednet	NSW DPI	2006	Reputed for high grain quality, low screenings and tolerance to weathering. Exceptional dough strength. Quick variety with good semolina colour and yield over Wollaroi and EGA Bellaro <sup>(b)</sup> . Performs well in drier areas.
DBA Lillaro <sup>(b)</sup>		(b)	✓	Seednet	NSW DPI	2015	Expected to be the most preferred variety by millers, highest semolina yield, highest yellow pigment, highest 1000 grain weight, lowest screenings compared with other released varieties. Medium early variety, around 2 to 3 days later than Jandaroi <sup>(b)</sup> . Higher yielding than Jandaroi <sup>(b)</sup> and is suited to dry seasons. Performs better than Jandaroi <sup>(b)</sup> in double cropping e.g. after a cotton crop.

#### SOFT WHEATS

LongReach Gazelle <sup>(b)</sup>	24K1056/MPM/3*Vasco	(b)	✓	Pacific Seeds	LPB	2012	Longer season Soft (Biscuit) wheat with low protein accumulation and good standability. Well suited to high production systems and early planting.
LongReach Impala <sup>(b)</sup>	TEAL/C93.8/9908	(b)	✓	Pacific Seeds	LPB	2012	A high yielding, quick maturing, awned, Soft (biscuit) wheat. Has improved disease resistance compared to other soft varieties.

#### FEED WHEATS

GBA Hunter <sup>(b)</sup>	Attila//Altan84/Aos3/Attila	(b)	✓	Viterra	GBA	2005	Prolific tillering awned variety. High yield potential.
EGA Stamped <sup>(b)</sup>	-	(b)	✓	Nuseed	DPI&F	2008	Very high yielding stock feed wheat with good rust resistance package.

#### FORAGE WHEATS

Brennan <sup>(b)</sup>	Hartog/2*Merica	(b)		Seednet	CSIRO	1998	A white grained awnless winter wheat suitable for grazing and grain production. May not come to head in Central Queensland conditions.
Manning <sup>(b)</sup>		(b)	✓	GrainSearch	Ausgrainz	2013	A white grained awnless long season winter wheat with BYDV resistance. It is suitable for grazing and grain production in high rainfall & irrigation zones. Tillers strongly and can produce high quality fodder.
SOP Revenue <sup>(b)</sup>		(b)	✓	GrainSearch	CSIRO	2010	A red grained awnless winter wheat suitable for grazing and grain production in the high rainfall & irrigation zones of eastern Australia. Can produce high quality fodder.
Petrel	-				NSW DPI	1996	An awnless hay wheat with dry matter yields similar to Ford but has stronger straw and is later maturing.

<sup>∞</sup> SU – Sydney University Plant Breeding Institute, DPI&F – Department of Primary Industries & Fisheries, Queensland, EGA – Grain Biotech Australia, NSW DPI – New South Wales Department of Primary Industries, AGT – Australian Grain Technologies, CSIRO – Commonwealth Scientific & Industrial Research Organisation, LPB – LongReach Plant Breeders.

(b) – Varieties displaying this symbol are protected under the Plant Breeders Rights Act 1994. Unauthorised sale of seed of these varieties is an infringement under this Act.

**TABLE 4.1 NVT – Central Queensland long-term yield – early season 2012–16.**

Variety Name	Group	All trials	2012	2013	2014	2015	2016
	Mean Yield t/ha		3.78	3.32	2.48	4.15	3.85
	Trials		5	4	3	3	1
Baxter <sup>(d)</sup>		16	100	106	100	92	129
Coolah <sup>(d)</sup>		7			113	105	113
EGA Bounty <sup>(d)</sup>		16	100	107	100	99	127
EGA Burke <sup>(d)</sup>		12	100	110	101		
EGA Gregory <sup>(d)</sup>		16	105	110	108	103	122
Lang <sup>(d)</sup>		8	99	106			
LongReach Flanker <sup>(d)</sup>		7			118	108	128
LongReach Gauntlet <sup>(d)</sup>		16	98	107	98	98	120
LongReach Lancer <sup>(d)</sup>		12	99	104	100	97	111
Mitch <sup>(d)</sup>		12	110	114	117		
Strzelecki <sup>(d)</sup>		16	104	100	104	99	115
Sunguard <sup>(d)</sup>		11		107	100	99	119
Suntime <sup>(d)</sup>		9	100			97	102
Sunvale <sup>(d)</sup>		16	96	99	94	95	110

**TABLE 4.2 NVT – Central Queensland long-term yield – main season 2012–16.**

Variety Name	Group	All trials	2012	2013	2014	2015	2016
	Mean Yield t/ha		3.63	3.21	2.16	4.24	3.41
	Trials		5	4	4	4	5
Baxter <sup>(d)</sup>		13	99	98	106		
Coolah <sup>(d)</sup>		6				105	97
EGA Burke <sup>(d)</sup>		5	104				
EGA Gregory <sup>(d)</sup>		22	109	102	112	104	102
Elmore CL Plus <sup>(d)</sup>		22	99	100	98	100	98
Hartog		22	99	102	102	100	107
Kennedy <sup>(d)</sup>		22	95	98	97	95	105
Lang <sup>(d)</sup>		18	98	95		95	96
Livingston <sup>(d)</sup>		22	93	101	103	100	99
LongReach Crusader <sup>(d)</sup>		22	93	99	95	96	103
LongReach Dart <sup>(d)</sup>		22	82	93	93	92	91
LongReach Flanker <sup>(d)</sup>		13			117	110	110
LongReach Gauntlet <sup>(d)</sup>		18	98	98	96	99	94
LongReach Reliant <sup>(d)</sup>		13			117	111	112
LongReach Spitfire <sup>(d)</sup>		22	93	98	106	97	99
Mitch <sup>(d)</sup>		13		106		107	108
Sunguard <sup>(d)</sup>		6		99	99		
Sunmate <sup>(d)</sup>		17	96	104	107	103	
Suntop <sup>(d)</sup>		22	102	106	111	106	104
Wallup <sup>(d)</sup>		22	93	101	101	99	101

**TABLE 4.3 NVT – South-East Queensland long-term yield – early season 2012–16.**

Variety Name	Group	All trials	2012	2013	2014	2015	2016
	Mean Yield t/ha		3.45	4.27	4.02	4.05	5.44
	Trials		2	2	2	2	2
Baxter <sup>(d)</sup>		10	114	107	100	90	81
Coolah <sup>(d)</sup>		6			109	106	104
EGA Bounty <sup>(d)</sup>		10	98	105	103	101	91
EGA Burke <sup>(d)</sup>		6	105	108	108		
EGA Gregory <sup>(d)</sup>		10	98	105	105	104	99
Lang <sup>(d)</sup>		4		105	102		
LongReach Flanker <sup>(d)</sup>		6			110	110	105
LongReach Gauntlet <sup>(d)</sup>		10	110	107	106	98	88
LongReach Gazelle <sup>(d)</sup>		10	92	92	86	93	107
LongReach Lancer <sup>(d)</sup>		10	113	106	103	95	91
Mitch <sup>(d)</sup>		10	105	106	105	104	104
Strzelecki <sup>(d)</sup>		10	85	97	94	100	100
Sunguard <sup>(d)</sup>		8		106	105	99	91
Sunmax <sup>(d)</sup>		4				106	111
Suntime <sup>(d)</sup>		10	105	101	99	96	96
Sunvale <sup>(d)</sup>		10	106	102	99	94	88
Sunzell <sup>(d)</sup>		10	95	98	97	97	93

**TABLE 4.4 NVT – South-East Queensland long-term yield – main season 2012–16.**

Variety Name	Group	All trials	2012	2013	2014	2015	2016
	Mean Yield t/ha		4.57	4.09	3.88	3.78	5.58
	Trials		1	2	2	2	2
Baxter <sup>(d)</sup>		5	101	102	105		
Coolah <sup>(d)</sup>		2					107
EGA Burke <sup>(d)</sup>		4	94	100	104		
EGA Gregory <sup>(d)</sup>		9	87	99	108	107	104
EGA Kidman <sup>(d)</sup>		4	98	100		101	
Elmore CL Plus <sup>(d)</sup>		9	100	99	98	99	101
Hartog		9	103	102	103	98	97
Kennedy <sup>(d)</sup>		9	97	98	100	90	93
Lang <sup>(d)</sup>		8	97	96	96	93	98
Livingston <sup>(d)</sup>		9	106	101	97	99	96
LongReach Crusader <sup>(d)</sup>		9	106	100	99	92	93
LongReach Dart <sup>(d)</sup>		9	100	95	86	86	89
LongReach Flanker <sup>(d)</sup>		6			114	115	110
LongReach Gauntlet <sup>(d)</sup>		9	103	100	96	101	100
LongReach Impala <sup>(d)</sup>		9	103	101	99	98	103
LongReach Reliant <sup>(d)</sup>		6			113	117	108
LongReach Spitfire <sup>(d)</sup>		9	96	98	98	96	93
Mitch <sup>(d)</sup>		6		101		108	109
Sunguard <sup>(d)</sup>		8		99	98	101	101
Sunmate <sup>(d)</sup>		7	110	104	99	104	
Suntop <sup>(d)</sup>		9	106	105	103	108	104
Wallup <sup>(d)</sup>		9	108	102	97	97	96

**TABLE 4.5 NVT – South-West Queensland long-term yield – early season 2012–16.**

Variety Name	Group	All trials	2012	2013	2014	2015	2016
	Mean Yield t/ha		3.03	1.91	1.97	3.34	4.69
	Trials		7	7	6	9	5
Baxter <sup>(d)</sup>		34	101	123	113	107	85
Coolah <sup>(d)</sup>		20			106	114	108
EGA Bounty <sup>(d)</sup>		34	99	114	101	108	92
EGA Burke <sup>(d)</sup>		20	107	117	101		
EGA Gregory <sup>(d)</sup>		34	103	113	104	110	99
Lang <sup>(d)</sup>		20	97	117	103		
LongReach Flanker <sup>(d)</sup>		20			107	118	106
LongReach Gauntlet <sup>(d)</sup>		34	106	115	102	108	93
LongReach Lancer <sup>(d)</sup>		34	106	112	106	105	96
Mitch <sup>(d)</sup>		34	109	116	112	113	105
Strzeleck <sup>(d)</sup>		34	88	102	103	99	93
Sunguard <sup>(d)</sup>		27		114	103	108	95
Sunmax <sup>(d)</sup>		14				99	106
Suntime <sup>(d)</sup>		34	100	104	104	100	97
Sunvale <sup>(d)</sup>		34	98	107	102	100	91
Sunzell <sup>(d)</sup>		34	92	96	94	95	92

**TABLE 4.6 NVT – South-West Queensland long-term yield – main season 2012–16.**

Variety Name	Group	All trials	2012	2013	2014	2015	2016
	Mean Yield t/ha		3.05	2.4	2.4	3.26	4.43
	Trials		7	5	5	8	8
Baxter <sup>(d)</sup>		12	92	108			
Coolah <sup>(d)</sup>		8					113
EGA Burke <sup>(d)</sup>		7	105				
EGA Gregory <sup>(d)</sup>		33	101	101	112	98	108
EGA Kidman <sup>(d)</sup>		23	94			102	91
Elmore CL Plus <sup>(d)</sup>		33	102	98	100	99	102
Hartog		33	97	103	96	102	99
Kennedy <sup>(d)</sup>		33	90	98	90	96	96
Lang <sup>(d)</sup>		33	93	93	96	92	95
Livingston <sup>(d)</sup>		33	104	105	94	106	99
LongReach Crusader <sup>(d)</sup>		33	94	101	89	101	93
LongReach Dart <sup>(d)</sup>		33	97	95	82	97	94
LongReach Flanker <sup>(d)</sup>		21			118	106	112
LongReach Gauntlet <sup>(d)</sup>		33	102	99	99	100	97
LongReach Reliant <sup>(d)</sup>		21			113	115	109
LongReach Spitfire <sup>(d)</sup>		33	98	102	93	101	98
Mitch <sup>(d)</sup>		21		100		101	118
Sunguard <sup>(d)</sup>		26		99	101	99	99
Sunmate <sup>(d)</sup>		25	110	108	97	111	
Suntop <sup>(d)</sup>		33	112	108	105	110	107
Wallup <sup>(d)</sup>		33	103	104	92	106	98

NVT provides Estimated Genetic Values (EGVs) for grain yield for commercial varieties. Estimates of genetic value (yield) of individual varieties (on a state or region basis) have been obtained from a statistical analysis of long-term multi-environment trial (MET) data collected between the years of 2012 and 2016. The long-term yield tables summarise the EGVs in terms of a variety's performance as a percentage of site mean yield. These values represent the best available predictions for the specified region and are provided to facilitate reliable variety selection decisions.

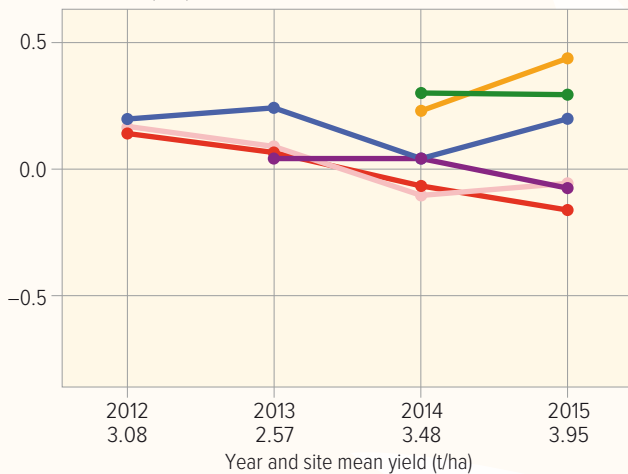
## Locality based yield graphs – NVT wheat trials 2012–16

The regional mean yields shown on pages 13 and 14 (Tables 4.1 to 4.6) average varietal performance across trial locations within each region. Averaging over locations within a region masks variety by environment interaction, that is, the ability of a variety to yield differently between locations or across seasons (years). The production value shown in the graphs below unlocks the variability in grain yield performance of each variety observed over different locations and seasons in the NVT trialling system. The production value (PV) is the varietal yield advantage (t/ha) of a variety at an environment. The PVs are shown as positive or negative differences relative to a baseline, which reflects the expected average yield of all the varieties tested in each environment. Varieties may be viewed as having expected yields that are equal

to the baseline (PV=0) or above (PV>0) or below (PV<0) average for each particular environment. The graphs are given for a standard set of varieties in all locations with more than four years of testing. Further information can be obtained upon request from Clayton Forknall (clayton.forknall@daf.qld.gov.au) or Douglas Lush (douglas.lush@daf.qld.gov.au).

### Early season – Biloela

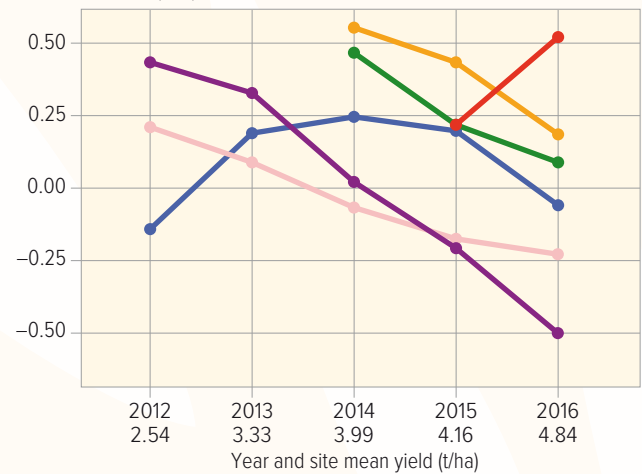
Production value (t/ha)



Note: 2014 & 2015 results correspond to trial at Jambin

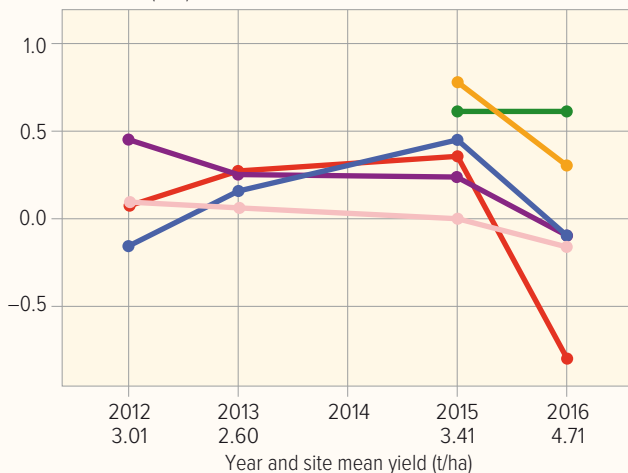
### Early season – Macalister

Production value (t/ha)



### Early season – Bungunya

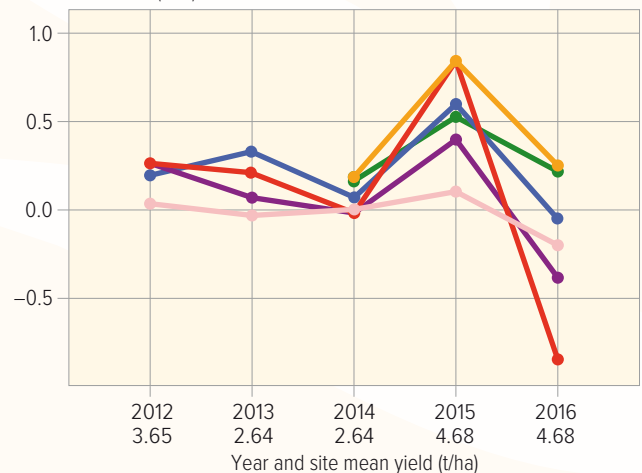
Production value (t/ha)



Note: There was not a trial at Bungunya in 2014

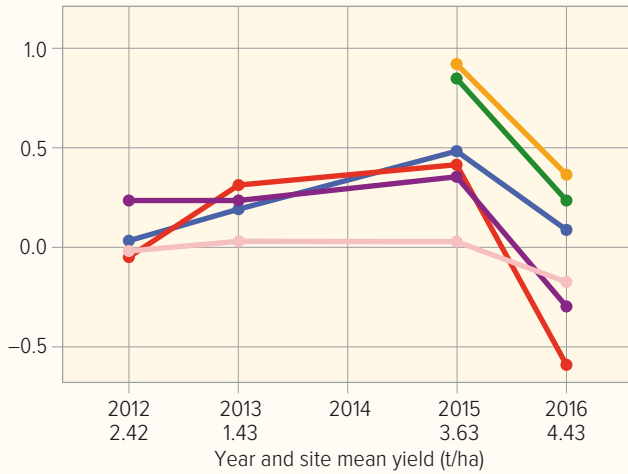
### Early season – Lundavra

Production value (t/ha)



### Early season – Meandarra

Production value (t/ha)

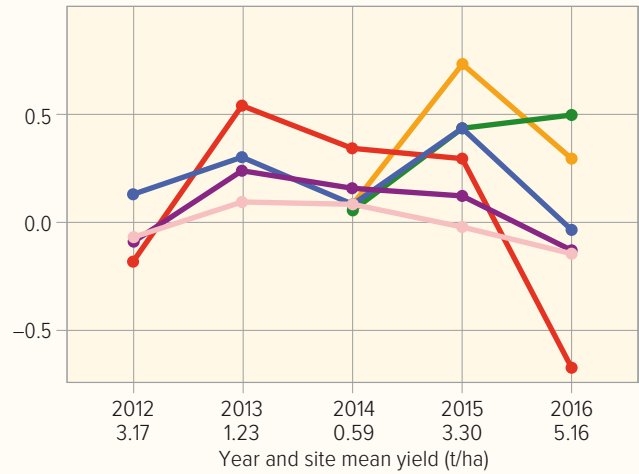


Legend: Baxter<sup>db</sup>, Coolah<sup>db</sup>, EGA Gregory<sup>db</sup>, LongReach Lancer<sup>db</sup>, LongReach Flanker<sup>db</sup>, Suntime<sup>db</sup>

Note: There was not a trial at Meandarra in 2014

### Early season – Mungindi

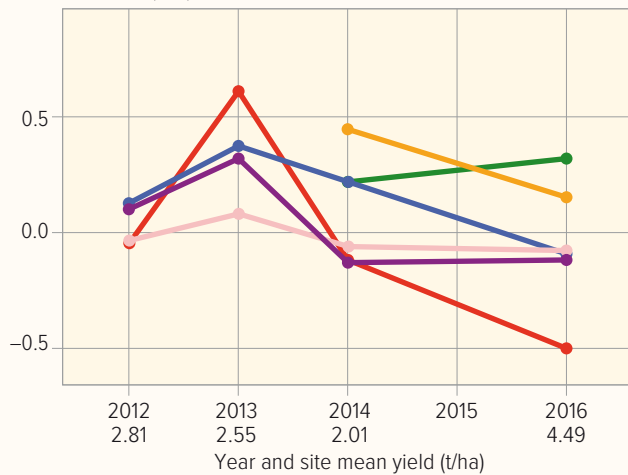
Production value (t/ha)



Legend: Baxter<sup>db</sup>, Coolah<sup>db</sup>, EGA Gregory<sup>db</sup>, LongReach Lancer<sup>db</sup>, LongReach Flanker<sup>db</sup>, Suntime<sup>db</sup>

### Early season – Roma

Production value (t/ha)

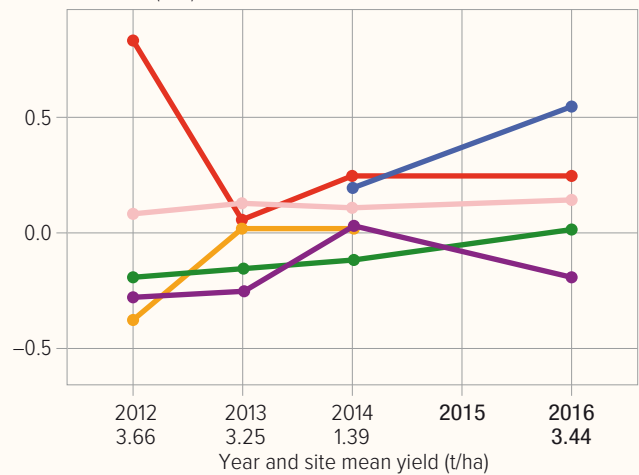


Legend: Baxter<sup>db</sup>, Coolah<sup>db</sup>, EGA Gregory<sup>db</sup>, LongReach Lancer<sup>db</sup>, LongReach Flanker<sup>db</sup>, Suntime<sup>db</sup>

Note: Trial data from 2015 was not released by NVT

### Main season – Capella

Production value (t/ha)

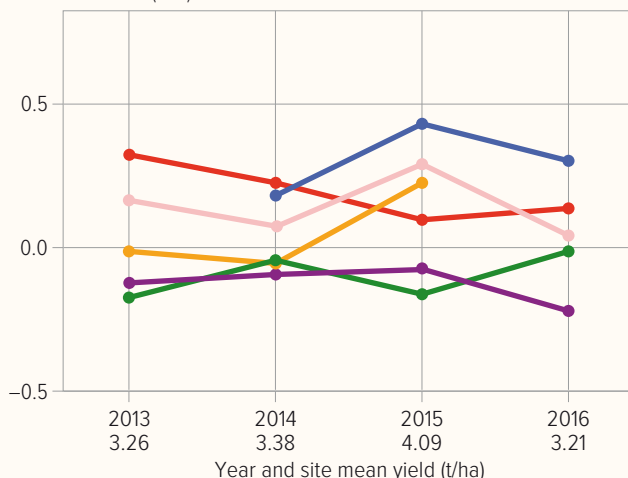


Legend: EGA Gregory<sup>db</sup>, LongReach Reliant<sup>db</sup>, Sunmate<sup>db</sup>, Kennedy<sup>db</sup>, LongReach Spitfire<sup>db</sup>, Suntop<sup>db</sup>

Note: There was not a trial at Capella in 2015

### Main season – Jambin

Production value (t/ha)

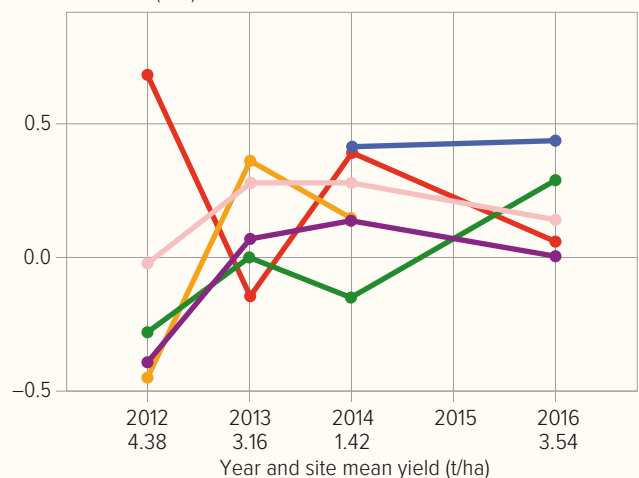


Legend: EGA Gregory<sup>db</sup>, LongReach Reliant<sup>db</sup>, Sunmate<sup>db</sup>, Kennedy<sup>db</sup>, LongReach Spitfire<sup>db</sup>, Suntop<sup>db</sup>

Note: 2013 results correspond to trial at Biloela

### Main season – Springsure

Production value (t/ha)



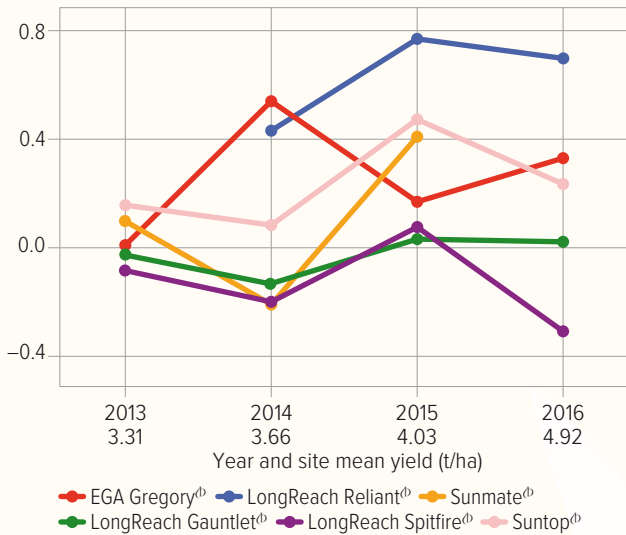
Legend: EGA Gregory<sup>db</sup>, LongReach Reliant<sup>db</sup>, Sunmate<sup>db</sup>, Kennedy<sup>db</sup>, LongReach Spitfire<sup>db</sup>, Suntop<sup>db</sup>

Note: There was not a trial at Springsure in 2015



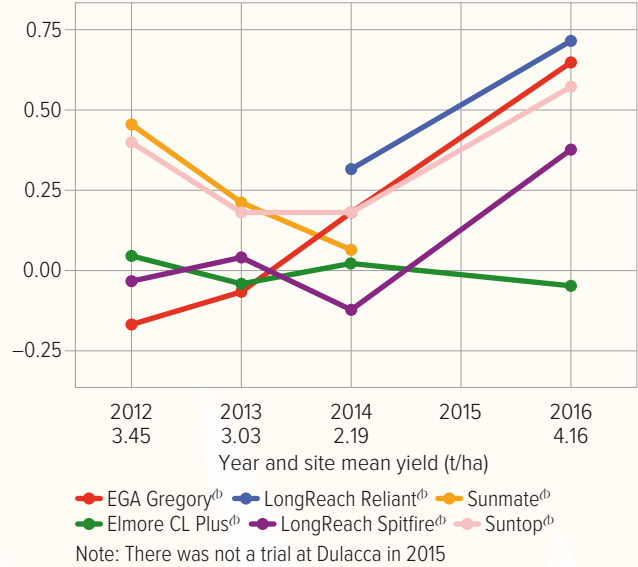
### Main season – Macalister

Production value (t/ha)



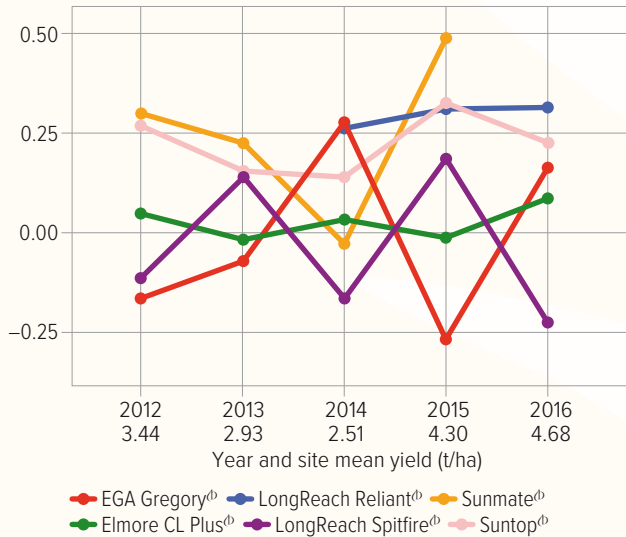
### Main season – Dulacca

Production value (t/ha)



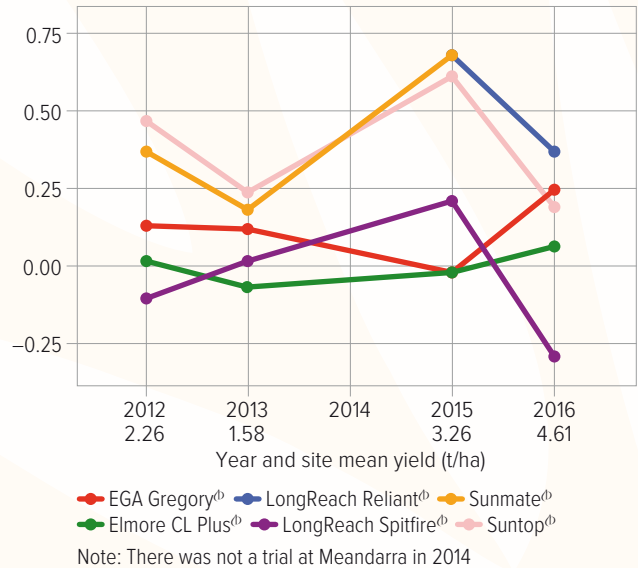
### Main season – Lundavra

Production value (t/ha)



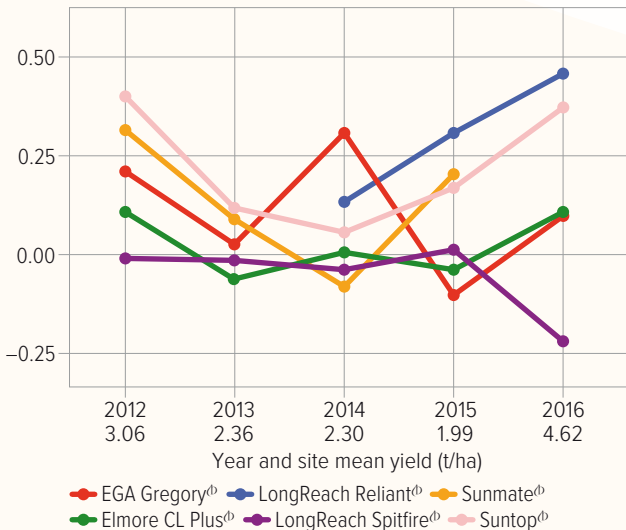
### Main season – Meandarra

Production value (t/ha)



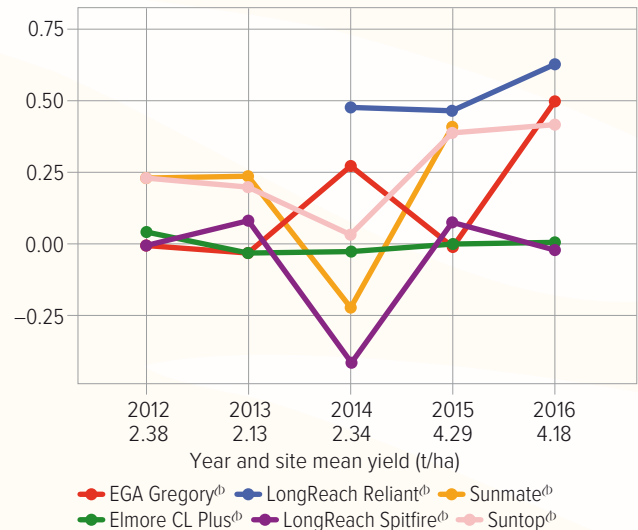
### Main season – Roma

Production value (t/ha)



### Main season – Westmar

Production value (t/ha)







# NVT apps

National  
Variety  
Trials  
A GRDC INITIATIVE



The NVT LONG-TERM YIELD REPORTS provide Australian growers and advisers with the best available tool for making variety selection decisions based on crop yield. Information is available for all cropping regions in Australia for 10 crops: wheat, barley, canola, oats, triticale, chickpeas, field peas, faba beans, lentils and lupins.



The CROP DISEASE AU application has been developed by the Australian National Variety Trials program (NVT) and funded by the GRDC. It provides access to up-to-date variety information from the NVT database, as well as current disease-resistance ratings, disease information and an extensive disease image library.