

National Variety Trials

A GRDC INITIATIVE



2016

wheat varieties

www.nvtonline.com.au



Key point

Three new varieties suitable for the northern region have been released:

- LongReach Flanker[®] (long season APH wheat);
- Suntime[®] (long season APH wheat); and
- DBA Lillaroi[®] (quick maturing durum wheat).

Introduction

National Variety Trials seek to collect the most relevant varieties for each region and test them alongside the elite lines from breeding programs.

Only varieties deemed suitable for conditions in the northern region (Queensland and Northern NSW) have been included in this guide.

For all the information on the released varieties in the NVT trials in Queensland visit the NVT website (www.nvtonline.com.au).

NVT-generated data is the primary source of information for the tables in this document.

2015 season

Conditions were highly variable across most regions of Queensland. Some areas missed out on wheat crops altogether and others received rainfall at key times to produce top-end yields.

CENTRAL QUEENSLAND conditions were split. The western portion of the Central Highlands received very little rainfall and many growers were unable to plant their winter cereals. Many of the NVT winter cereal trials were relocated to Emerald Agricultural College to make use of the irrigation. Dryland trials from Springsure to Kilcummin were not viable. On the eastern edge of the Central Highlands and through the Dawson Callide conditions were considerably better. Flooding rains in summer caused some disruptions but provided a good soil moisture situation. Timely rains provided opportunities for winter cereals and, in some areas, particularly high yields.

SOUTH-WEST QUEENSLAND endured a cautious start to the season, with talk of El Niño weather patterns and average soil moisture profiles. Timely rains across most districts (particularly the South West Downs and Far West) enabled planting of winter cereals and good falls of rain mid-season promoted some exceptional crop yields. The Maranoa and some northern parts of the Western Downs received less rainfall and consequently had limited planting opportunities. However, good mid-season rainfall helped boost grain yields.

SOUTH-EAST QUEENSLAND experienced an average season. Moderate early season rainfall promoted some cereal plantings and limited in-crop rainfall ensured that crop yields did not reach high levels.

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

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Disease characteristics

YELLOW SPOT: Yellow spot was not a significant problem in 2015 due to the low in-crop rainfall in the early part of the season. While this has reduced the amount of inoculum in 2016, it will never be eliminated entirely and can build up quickly in wet seasons. Economic responses to fungicide control of yellow spot are only experienced when the disease is severe and infecting the top three to four leaves so decisions about spraying should always be left until the plants are at jointing stage and showing some disease on the upper leaves, and conditions are conducive.

CROWN ROT: 2015 was not a year that saw high levels of crown rot across the region. The low levels of early rain may have minimised the early infection that results in stem base damage, which affects yield when the plant is under stress later in the season. However, crown rot is widespread throughout the northern region. The inoculum can survive in the soil and stubble for several seasons and it is the main cause of yield losses when seasons are conducive. There is minor improvement in resistance in some recent cultivars, but a long rotation to a non-host such as a legume or brassica remains the most effective method of control. As with nematodes, the Predicta® B soil testing service is available from the South Australian Research and Development Institute (SARDI) and is useful for planning control strategies for crown rot (http://pir.sa.gov.au/research/services/molecular_diagnostics/predicta_b).

RUSTS: Stripe rust was seen in Northern NSW and South-East Queensland in August and was severe in some areas in northern NSW. The green bridge caused by volunteer wheat growing throughout the summer can carry inoculum over into 2016 and potentially allow an early start to an epidemic, so growers should be vigilant with crop inspections. Dr Steven Simpfendorfer from the NSW Department of Primary Industries (DPI) identified mixed seed as the cause of unexpected disease in the Moderately Resistant (MR) cultivar EGA Gregory[®], but not a breakdown of resistance in the cultivar as feared by some.

A new pathotype of leaf rust has moved from the southern to the northern region since 2014, and has spread throughout the northern region. Leaf rust is only occasionally a problem in Queensland, but in 2015 a South-East Queensland crop of a cultivar with a Susceptible to Very Susceptible (SVS) resistance rating to the new pathotype experienced significant damage that required fungicide application. This guide contains updated variety resistance data to the new pathotype and growers should make themselves aware of the new ratings of the cultivars they sow and be prepared to spray if the cultivar is below Moderately Susceptible (MS), and if rust is present and conditions are conducive to the disease.

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. Soil testing for RLN is available through the Predicta® B service (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 of RLN, or the nematode levels 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. The reaction of a wheat variety may differ to the two species of RLN, *Pratylenchus thornei* and *Pratylenchus neglectus*. This should be checked in Tables 2A and 2B (pages 6 and 7).

BUNT: 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, either there is no commercial seed available or there is concern 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.

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
Central Highlands Dawson Callide low frost risk (higher slopes or more northern areas)	Strzelecki [Ⓛ] , Suntime [Ⓛ] , EGA Gregory [Ⓛ] , LongReach Flanker [Ⓛ] , LongReach Lancer [Ⓛ] , EGA Bellaroi [Ⓛ]	E	E	C	C	C	C	C	L								
	EGA Bounty [Ⓛ] , EGA Burke [Ⓛ] , EGA Wylie [Ⓛ]	E	E	E	C	C	C	C	C	L	L						
	Sunguard [Ⓛ] , Baxter [Ⓛ] , Sunvale [Ⓛ] , Caparoi [Ⓛ]	E	E	E	E	C	C	C	C	L	L						
	LongReach Gauntlet [Ⓛ] , Mitch [Ⓛ] , Lang [Ⓛ] , Kennedy [Ⓛ] , EGA Kidman [Ⓛ] , Sunco, LongReach Viking [Ⓛ] , Elmore CL Plus [Ⓛ] , Hyperno [Ⓛ] , GBA Hunter [Ⓛ]	E	E	E	E	C	C	C	C	C	C	L	L				
	Hartog, DBA Lillaro [Ⓛ] , LongReach Crusader [Ⓛ] , Suntop [Ⓛ] , LongReach Spitfire [Ⓛ] , Wallup [Ⓛ] , Livingston [Ⓛ] , EGA Stampede [Ⓛ] , Jandaroi [Ⓛ] , Sunmate [Ⓛ] , LongReach Dart [Ⓛ]		E	E	E	E	C	C	C	C	C	L	L				
Central Highlands Dawson Callide high frost risk (river flats or areas known to be more frost-prone)	Strzelecki [Ⓛ] , Suntime [Ⓛ] , EGA Gregory [Ⓛ] , LongReach Flanker [Ⓛ] , LongReach Lancer [Ⓛ] , EGA Bellaroi [Ⓛ]			E	E	C	C	C	C	L							
	EGA Bounty [Ⓛ] , EGA Burke [Ⓛ] , EGA Wylie [Ⓛ]				E	E	C	C	C	C	C	L					
	Sunguard [Ⓛ] , Baxter [Ⓛ] , Sunvale [Ⓛ] , Caparoi [Ⓛ]					E	E	C	C	C	C	L	L				
	LongReach Gauntlet [Ⓛ] , Mitch [Ⓛ] , Lang [Ⓛ] , Kennedy [Ⓛ] , EGA Kidman [Ⓛ] , Sunco, LongReach Viking [Ⓛ] , Elmore CL Plus [Ⓛ] , Hyperno [Ⓛ] , GBA Hunter [Ⓛ]					E	E	C	C	C	C	C	L	L			
	Hartog, DBA Lillaro [Ⓛ] , LongReach Crusader [Ⓛ] , Suntop [Ⓛ] , LongReach Spitfire [Ⓛ] , Wallup [Ⓛ] , Livingston [Ⓛ] , EGA Stampede [Ⓛ] , Jandaroi [Ⓛ] , Sunmate [Ⓛ] , LongReach Dart [Ⓛ]					E	E	C	C	C	C	C	C	L			
Maranoa, Balonne Western Downs – South West	EGA Eaglehawk [Ⓛ] , Sunzell [Ⓛ]		E	C	C	L											
	Strzelecki [Ⓛ] , Suntime [Ⓛ]			E	C	C	C	C	L								
	LongReach Lancer [Ⓛ] , EGA Gregory [Ⓛ] , LongReach Flanker [Ⓛ] , Sunvale [Ⓛ] , EGA Bounty [Ⓛ] , LongReach Gauntlet [Ⓛ] , EGA Burke [Ⓛ] , EGA Wylie [Ⓛ] , Baxter [Ⓛ]				E	E	C	C	C	C	C	C	L				
	EGA Kidman [Ⓛ] , Sunguard [Ⓛ] , Mitch [Ⓛ] , Elmore CL Plus [Ⓛ] , LongReach Viking [Ⓛ] , Sunco, Lang [Ⓛ] , EGA Bellaroi [Ⓛ] , Hyperno [Ⓛ] , GBA Hunter [Ⓛ]					E	C	C	C	C	C	C	C	L	L		
	Kennedy [Ⓛ] , Suntop [Ⓛ] , Jandaroi [Ⓛ] , Hartog, DBA Lillaro [Ⓛ] , Wallup [Ⓛ] , Caparoi [Ⓛ] , EGA Stampede [Ⓛ] , LongReach Spitfire [Ⓛ] , LongReach Crusader [Ⓛ] , Livingston [Ⓛ] , Sunmate [Ⓛ] , LongReach Dart [Ⓛ]						E	C	C	C	C	C	C	L	L		
Darling Downs (Northern, Uplands)	EGA Eaglehawk [Ⓛ] , Sunzell [Ⓛ]				E	C	C	C	L								
	Strzelecki [Ⓛ] , Suntime [Ⓛ] , LongReach Lancer [Ⓛ] , EGA Gregory [Ⓛ] , LongReach Flanker [Ⓛ] , Sunvale [Ⓛ]						E	C	C	L							
	EGA Bellaroi [Ⓛ] , Hyperno [Ⓛ] , LongReach Gazelle [Ⓛ] , EGA Bounty [Ⓛ] , LongReach Gauntlet [Ⓛ] , EGA Burke [Ⓛ] , EGA Wylie [Ⓛ] , Baxter [Ⓛ]						E	E	C	C	C	C	C	L			
	Sunco, Lang [Ⓛ] , Sunguard [Ⓛ] , Mitch [Ⓛ] , Elmore CL Plus [Ⓛ] , LongReach Viking [Ⓛ] , EGA Kidman [Ⓛ] , GBA Hunter [Ⓛ]							E	E	C	C	C	C	C	C	L	L
	Kennedy [Ⓛ] , Suntop [Ⓛ] , LongReach Impala [Ⓛ] , Jandaroi [Ⓛ] , Hartog, DBA Lillaro [Ⓛ] , Wallup [Ⓛ] , Caparoi [Ⓛ] , EGA Stampede [Ⓛ] , LongReach Spitfire [Ⓛ] , LongReach Crusader [Ⓛ] , Livingston [Ⓛ] , Sunmate [Ⓛ] , LongReach Dart [Ⓛ]								E	E	C	C	C	C	C	L	L
Darling Downs high frost risk (Central, Southern)	EGA Eaglehawk [Ⓛ] , Sunzell [Ⓛ]						E	C	C	L							
	Strzelecki [Ⓛ] , Suntime [Ⓛ] , LongReach Lancer [Ⓛ] , EGA Gregory [Ⓛ] , LongReach Flanker [Ⓛ] , Sunvale [Ⓛ]								E	C	C	C	L				
	EGA Bellaroi [Ⓛ] , Hyperno [Ⓛ] , LongReach Gazelle [Ⓛ] , EGA Bounty [Ⓛ] , LongReach Gauntlet [Ⓛ] , EGA Burke [Ⓛ] , EGA Wylie [Ⓛ] , Baxter [Ⓛ]									E	C	C	C	C	L		
	Sunco, Lang [Ⓛ] , Sunguard [Ⓛ] , Mitch [Ⓛ] , Elmore CL Plus [Ⓛ] , LongReach Viking [Ⓛ] , EGA Kidman [Ⓛ] , GBA Hunter [Ⓛ]									E	E	C	C	C	C	C	L
	Kennedy [Ⓛ] , Suntop [Ⓛ] , LongReach Impala [Ⓛ] , Jandaroi [Ⓛ] , Hartog, DBA Lillaro [Ⓛ] , Wallup [Ⓛ] , Caparoi [Ⓛ] , EGA Stampede [Ⓛ] , LongReach Spitfire [Ⓛ] , LongReach Crusader [Ⓛ] , Livingston [Ⓛ] , Sunmate [Ⓛ] , LongReach Dart [Ⓛ]										E	C	C	C	C	C	L
Central Burnett South Burnett & West Moreton†	EGA Eaglehawk [Ⓛ] , Sunzell [Ⓛ] , Strzelecki [Ⓛ] , Suntime [Ⓛ] , LongReach Lancer [Ⓛ] , EGA Gregory [Ⓛ] , LongReach Flanker [Ⓛ]					E	E	C	C	C	L						
	Sunvale [Ⓛ] , LongReach Gazelle [Ⓛ] , EGA Bounty [Ⓛ] , LongReach Gauntlet [Ⓛ] , EGA Burke [Ⓛ] , EGA Wylie [Ⓛ] , Baxter [Ⓛ] , EGA Kidman [Ⓛ] , Sunguard [Ⓛ] , Mitch [Ⓛ] , Elmore CL Plus [Ⓛ] , LongReach Viking [Ⓛ] , Sunco, Lang [Ⓛ] , EGA Bellaroi [Ⓛ] , Hyperno [Ⓛ] , GBA Hunter [Ⓛ]							E	E	C	C	C	C	L	L		
	Kennedy [Ⓛ] , Suntop [Ⓛ] , LongReach Impala [Ⓛ] , Jandaroi [Ⓛ] , Hartog, DBA Lillaro [Ⓛ] , Wallup [Ⓛ] , Caparoi [Ⓛ] , EGA Stampede [Ⓛ] , LongReach Spitfire [Ⓛ] , LongReach Crusader [Ⓛ] , Livingston [Ⓛ] , Sunmate [Ⓛ] , LongReach Dart [Ⓛ]								E	C	C	C	C	L	L		

General notes

Frost damage may be minimised by planting varieties within the range of dates recommended in 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-fill.

Each row in Table 1 comprises a maturity group within an individual district.

† Table 1, Central Burnett: South Burnett & West Moreton. Plant wheat varieties two weeks earlier in the West Moreton.

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, which has 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 wanton dumpling skins. APH can 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 more than 13 per cent and a minimum of 11.5 per cent. Grain appearance is also important, downgrading can occur due to black point, weather damage and mottling. Acceptable levels of black point are as follows: ADR1 – 3 per cent, ADR2 – 5 per cent and ADR3 – 20 per cent.

Soft wheats

Soft wheats represent two distinct types. The **Soft Biscuit** type (9 to 10 per cent protein) is suitable for use in the biscuit industry, and the **Soft Noodle** type (9 to 11.5 per cent protein) is 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-planting 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 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, thereby extending the period of vegetative growth. Maturity varies once vernalisation requirements have been met. Winter wheats are usually sown in late March or early April.

Table 2A Bread and noodle wheats – disease and agronomy ratings

Variety (In maturity order, slow to quick)	Wheat Quality Australia (WOA) maximum quality classification*	Disease ratings (www.nvtonline.com.au)										Agronomy				
		Yellow spot	Crown rot	Common root rot	Root lesion nematodes			Stem rust	Leaf rust	Stripe rust		Black point#	Lodging*	Shattering	Sprouting resistance	
					<i>P. thornei</i> tolerance *	<i>P. thornei</i> resistance %	<i>P. neglectus</i> tolerance*			<i>P. neglectus</i> resistance %	Yr17-27 pathotype					WA pathotype
EGA Eaglehawk ^b	AH	MSS	MSS	MSS	MT	MS	MI (p)	MS	RMR	–	MRMS	R	MRMS (p)	–	–	MSS (p)
Sunzell ^b	AH	MSS	MSS	SVS	MT	MS	MI (p)	MS	MR	MS	RMR	RMR	S	MRMS	–	–
Strzelecki ^b	APH	MS	S	MRMS	I	SVS	MT	S	MRMS	–	MR	MR	MS	MS	RMR	S
Suntime ^b	APH	MSS	MSS	–	TMT (p)	MRMS	MI (p)	MSS	R	MS	RMR	RMR	MS	–	–	–
LongReach Lancer ^b	APH	MS	MSS	S	TMT	MS	MTMI (p)	S	R	RMR	MR	MR	RMR (p)	RMR	–	S
EGA Gregory ^b	APH	S	S	MSS	MT	MSS	MT	MSS	MR	MR	MR	MR	MS	MSS	RMR	S
LongReach Flanker ^b	APH	MSS	–	–	TMT (p)	MS (p)	–	MSS (p)	RMR	MRMS	RMR	RMR	–	–	–	–
Sunvale ^b	APH	MSS	MSS	MS	MT	MSS	MI	MSS	R	S	MR	MR	RMR	S	RMR	S
EGA Bounty ^b	AH	MS	S	S	MT	MS	MTMI (p)	MSS	MR	–	MR	MR	MSS	MSS	–	S
LongReach Gauntlet ^b	APH	MS	MSS	MSS	MT	MR	MTMI (p)	S	RMR	MS	MRMS	RMR	MRMS	MRMS	MR	S
EGA Burke ^b	APH	MSS	S	MSS	MT	MS	MTMI (p)	MSS	MR	MS	MS	MS	RMR	S	MRMS	S
EGA Wylie ^b	AH	MSS	MRMS	MS	TMT	MSS	MI	MSS	R	MS	MS	MS	MR	MSS	MR	S
EGA Kidman ^b	APH	MSS	MSS	MS	MTMI	MS	MI (p)	SVS	RMR	–	MRMS	MRMS	MSS	MRMS	–	S
Sunguard ^b	AH	MSS	MS	MS	MT	MSS	MTMI (p)	S	R	MR	MR	MR	MR	MRMS	MR	S
Mitch ^b	AH	MS	MS	MS	MT	MS	T (p)	MSS	MRMS	SVS	RMR	RMR	–	–	–	–
Elmore CL Plus ^b	AH	S	S	MSS	MI	S	MT (p)	S	MR	RMR	MRMS	MRMS	MS	MRMS	RMR	S
LongReach Viking ^b	APH	MSS	MSS	MRMS	TMT (p)	MS (p)	VI (p)	S (p)	MRMS	MSS	RMR	RMR	–	–	–	–
Baxter ^b	APH	S	MS	MSS	MT	MSS	MI	MSS	MRMS	S	MSS	MSS	MS	MSS	MR	S
Sunco	APH	MSS	MS	MRMS	I	S	MI	S	R	–	MRMS	MRMS	RMR	S	MRMS	S
Lang ^b	APH	MSS	MSS	MRMS	MI	MSS	MI	S	R	MS	MR	MR	RMR	MRMS	RMR	S
Kennedy ^b	APH	MSS	S	MS	MTMI	S	MTMI	S	MR	MR	MS	MS	R	MRMS	RMR	S
Suntop ^b	APH	MSS	MSS	MS	TMT	MR	MT (p)	MSS	MR	MRMS	MRMS	MR	MR	MS	RMR	SVS
Hartog	APH	MS	S	MS	MTMI	MS	MTMI	S	MR	–	MS	MS	MRMS	MS	RMR	S
Wallup ^b	APH	MSS	S	MS	MT	MRMS	TMT (p)	MRMS	MRMS	SVS	MRMS	MRMS	MRMS	RMR	RMR	S
LongReach Spitfire ^b	APH	MSS	MS	MSS	MTMI	MS	MTMI (p)	MSS	MR	S	MR	MR	S	MRMS	MR	S
LongReach Crusader ^b	APH	MS	S	MS	MI	MSS	MI (p)	S	RMR	RMR	MR	MR	RMR	RMR	MR (p)	S
Livingston ^b	AH	MS	S	SVS	MT	MS	MI (p)	S	MRMS	MSS	MRMS	R	MRMS (p)	MR	–	S
Sunmate ^b	APH	MSS	MSS	MS	TMT (p)	MR	MTMI (p)	S	MRMS	MS	MRMS	R	–	–	–	–
LongReach Dart ^b	APH	MS	MSS	MS	MI	MS	MI (p)	MSS	MR	SVS	MR	MR	MRMS (p)	RMR	MR (p)	S

BREAD AND NOODLE WHEATS

Table 2B Specialty wheats – disease and agronomy ratings

Variety (In maturity order, slow to quick)	Wheat Quality Australia (WQA) maximum quality classification*	Disease ratings (www.nvtonline.com.au/)										Agronomy				
		Yellow spot	Crown rot	Common root rot	Root lesion nematodes			Stem rust	Leaf rust	Stripe rust		Black point*	Lodging [§]	Shattering	Sprouting resistance	
					<i>P. thornei</i> tolerance*	<i>P. thornei</i> resistance %	<i>P. neglectus</i> tolerance*			<i>P. neglectus</i> resistance %	Yr17-27 pathotype					WA pathotype
DURUM WHEATS																
EGA Bellaroi ^b	ADR	MR	VS	MR	MTMI	MR	MII	MS	MR	MRMS	MR	MR	RMR	MR	R	MS
Hyperno ^b	ADR	MS	VS	RMR	TMT	RMR	MT (p)	MS	R	R	MR	MR	MRMS (p)	S	-	MRMS
Caparoi ^b	ADR	MR	VS	MR	TMT	MR	MI (p)	MSS	MR	RMR	MR	MR	-	MRMS	-	-
Jandaroi ^b	ADR	MR-MS	VS	MRMS	MTMI	MRMS	MI (p)	MS	RMR	RMR	MR	MR	RMR	MSS	MR	RMR
DBA Lillaroi ^b	ADR	RMR	-	-	MTMI (p)	RMR	I (p)	MRMS	RMR	R	RMR	RMR	-	MS	-	-
SOFT WHEATS																
LongReach Gazelle ^b	ASF1	MSS	SVS	SVS (p)	MII	S	MT (p)	S	MR	MRMS	MR	RMR	MS (p)	MRMS	MR(p)	S
LongReach Impala ^b	ASF1	MS	MS	MS	MII	S	MTMI (p)	S	MR	SVS	MR	MR	MRMS	MS	MR(p)	MS(p)
FEED WHEATS																
GBA Hunter ^b	FEED	MR	MSS (p)	MS	MT	S	MT	S	RMR	-	MRMS	RMR	MS (p)	RMR	RMR	S (p)
EGA Stampede ^b	FEED	MRMS	S	MS	IVI	S	MT (p)	MSS	RMR	-	MR	MR	MRMS	MRMS	-	MSS
FORAGE WHEATS																
Brennan ^b	FEED	MRMS	-	-	-	SVS	-	S	MS	-	RMR	RMR	MR	-	-	-
Manning ^b	FEED	-	VS	SVS	-	S	-	MSS	MR	MRMS	RMR	RMR	-	-	-	-
SQP Revenue ^b	FEED	MS	S	SVS	-	MSS	-	MSS	RMR	SVS	R	R	S	-	-	-
Petrel	ASW	S	MSS (p)	MRMS	-	S	-	S	RMR	-	MRMS	MRMS	-	-	-	-

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

Alpha scales are 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.

- ❖ WQA maximum classifications describe suitability for export markets and do not always reflect the varietal preference of domestic millers. APH = Australian Prime Hard, AH = Australian Hard. Please refer to Grain Trade Australia – Wheat Standards 2014/2015 for more information.
- * RLN tolerance – the root-lesion nematode (*P. thornei* and *P. neglectus*) tolerance ratings that appear in this planting guide are based on field data collected in the northern grain region rather than national consensus ratings.
- % RLN resistance – the root-lesion nematode (*P. thornei* and *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.
- # Black point will not cause a reduction in yield but may result in grain receiving a different classification.
- \$ 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 dryland environments, as lodging is unlikely to occur when yields are below 5t/ha.
- (p) RLN data relating to these varieties is based on less than 4 years of testing and is to be considered provisional information.

Low risk
 Medium risk
 High risk

Table 3A Bread and noodle wheats – varietal details

Variety	Varietal information					Released by ♦	Year of release	Comments (as supplied by breeding companies)
	Pedigree	Plant Breeders Rights	End Point Royalties	Licensee	Seedmark			
BREAD AND NOODLE WHEATS								
EGA Eaglehawk ^o	Sunbrook*4/VPM	(b)	✓	Seedmark	EGA	2007	Sunbrook replacement for early planting with good subsoil moisture. Moderately tolerant to <i>P. thornei</i> .	
Sunzell ^o	Sunbrook*3/Sunstate	(b)	✓	AGT	AGT	2007	Slower variety similar in maturity to Sunbri. Best suited to Darling Downs and Goondwindi regions.	
Strzelecki ^o	Vicam/4*Batavia	(b)	✓	Seedmark	DPI&F	2000	Moderately resistant to common root rot but not suitable for <i>P. thornei</i> -infested soil.	
Suntime ^o	SUN457A/SUN405B	(b)	✓	AGT	AGT	2015	An APH disease-resistant variety for Anzac Day planting.	
LongReach Lancer ^o	V184/Chara//Chara/3/Lang	(b)	✓	Pacific Seeds	LPB	2013	Slow maturing APH spring wheat with a compact canopy, solid grain quality and rust packages. Similar maturity to Sunzell ^o and Strzelecki ^o .	
EGA Gregory ^o	Pelsart/2*Batavia DH	(b)	✓	Pacific Seeds	EGA	2004	A good early season variety for paddocks with a history of root lesion nematodes.	
LongReach Flanker ^o	EGA Gregory//EGA Gregory/Lang	(b)	✓	Pacific Seeds	LPB	2015	APH variety well suited to Queensland with sound diseases resistance. Similar grain package, agronomic performance and maturity to EGA Gregory ^o with improved yield.	
Sunvale ^o	Cook*2/VPM11//3*Cook	(b)	✓	AGT	SU	1993	A variety suitable for early planting with good resistance to black point and RLN.	
EGA Bounty ^o	Batavia/2*Leichhardt	(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 ^o	Kukri/Sunvale	(b)	✓	Seednet	LPB	2012	Main season APH variety similar in maturity to Sunvale. Has good yellow spot and RLN (<i>P. thornei</i>) resistance and a solid grain receivals package.	
EGA Burke ^o	Sunco/2*Hartog	(b)	✓	Pacific 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 Wylie ^o	QT2327/Cook//QT2804	(b)	✓	Pacific Seeds	EGA	2004	A selection from Baxter ^o with improved disease and agronomic characteristics. Particular improvements in crown rot resistance and <i>P. thornei</i> tolerance.	
EGA Kidman ^o	Pelsart/2*Batavia DH	(b)	✓	Austgrains	EGA	2008	APH variety that has quality attributes suited to the sponge and dough markets in Asia.	
Sunguard ^o	SUN289E/S/2.Janz	(b)	✓	AGT	AGT	2011	An AH variety with an excellent disease-resistance package. Resistant or Moderately Resistant to all current pathotypes of the three rusts and has a level of tolerance to crown rot and RLN similar to EGA Wylie ^o .	
Mitch ^o	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.	
Elmore CL Plus ^o	Janz*2//Wig*4//11A//Annuello	(b)	✓	AGT	AGT	2012	Tolerant to Clearfield ^o herbicides, Janz type with improved disease resistance and yield.	
LongReach Viking ^o	Chara//Nesser*1/2*V1184	(b)	✓	Pacific Seeds	LPB	2014	A high-yielding mid-late maturing APH variety well suited to medium/high rainfall areas of NSW and Queensland.	
Baxter ^o	QT2327/Cook//QT2804	(b)	✓	Seedmark	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.	
Sunco	Cook*3//WW15//ASUN9E-27/3Ag14				SU	1986	Older established variety.	
Lang ^o	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 yellow alkaline noodle market.	
Kennedy ^o	Hartog/Veery#5	(b)	✓	Seedmark	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 ^o	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'			Seedmark	DPI&F	1982	Older established variety.	
Wallup ^o	Chara/Wyalkatchem	(b)	✓	AGT	AGT	2011	High and stable yield, quick maturing variety with good physical grain quality and solid disease resistance.	
LongReach Spitfire ^o	Drysdale/Kukri	(b)	✓	Pacific Seeds	LPB	2011	APH variety well suited to Queensland which is slightly quicker than Baxter ^o . Provides a good grain package and solid diseases resistance.	
LongReach Crusader ^o	Sunbrook/H45	(b)	✓	Pacific Seeds	LPB	2008	Quick APH variety with similar maturity to Kennedy ^o .	
Livingston ^o	SUN129A/Sunvale	(b)	✓	AGT	AGT	2008	Quick variety with similar maturity to Ventura ^o . Has a good stripe rust resistance package.	
Sunmate ^o	Sunco/2*Pastor//SUN436E	(b)	✓	AGT	AGT	2014	Quick APH variety with similar maturity to LongReach Spitfire ^o but higher long-term yield. It has moderate resistance to RLN (<i>P. thornei</i>).	
LongReach Dart ^o	Sunbrook/Janz//Kukri	(b)	✓	Pacific Seeds	LPB	2012	Very quick maturing variety with low tiller numbers suited to both later plantings and drier seasons. Good adult protection from diseases such as yellow leaf spot and stripe rust.	

Table 3B Specialty wheats – varietal details

Variety	Pedigree	Varietal information				Comments (as supplied by breeding companies)	
		Plant Breeders Rights	End Point Royalties	Licensee	Released by ♦		Year of release
DURUM WHEATS							
EGA Bellaroi ^{db}	920405/920274	(b)	✓	Seedmark	EGA	2002	Outclassed due to lower yield potential. Very good grain and semolina quality but poor dough strength. Performs very well under irrigation.
Hyperno ^{db}	Kalka sister line/Tamaroi	(b)	✓	AGT	AGT	2009	Highest long term yielding durum variety in Queensland with similar maturity to EGA Bellaroi ^{db} . Good semolina colour and colour stability.
Caparoi ^{db}	LY2.6.3/930054	(b)	✓	Seednet	NSW DPI	2009	Main season variety, around 1-2 weeks slower than Jandaroi ^{db} . Well suited to drier areas and performs well under irrigation.
Jandaroi ^{db}	920777/11566	(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 Bellaroi ^{db} . Performs well in drier areas.
DBA Lillaroi ^{db}		(b)	✓	Seednet	NSW DPI	2015	Expected to be the most preferred variety by millers; highest semolina yield, highest yellow pigment, highest 1000 grain weight and lowest screenings compared with other released varieties. Medium early variety, around two to three days later than Jandaroi ^{db} . Higher yielding than Jandaroi ^{db} and is suited to dry seasons. Performs better than Jandaroi ^{db} in double cropping e.g. after a cotton crop.
SOFT WHEATS							
LongReach Gazelle ^{db}	24K1056/VPIM/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 ^{db}	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 ^{db}	Attila//Altar64/Aos/3/Attila	(b)	✓	Viterra	GBA	2005	Prolific tillering awned variety. High yield potential.
EGA Stampede ^{db}	-	(b)	✓	Nuseed	DPI&F	2008	Very high yielding stock feed wheat with good rust resistance package.
FORAGE WHEATS							
Bremnan ^{db}	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 ^{db}		(b)	✓	GrainSearch	Ausgrainz	2013	A white grained, awnless, long-season, winter wheat with barley yellow dwarf virus resistance. It is suitable for grazing and grain production in high rainfall and irrigation zones. Tillers strongly and can produce high quality fodder.
SQP Revenue ^{db}		(b)	✓	GrainSearch	CSIRO	2010	A red grained, awnless, winter wheat suitable for grazing and grain production in the high rainfall and irrigation zones of eastern Australia. Can produce high-quality fodder.
Petrel	-				NSW DPI	1998	An awnless hay wheat with dry matter yields similar to Ford but has stronger straw and is later maturing.

♦ SU – University of Sydney Plant Breeding Institute, DPI&F – Department of Primary Industries and Fisheries, Queensland, EGA – Enterprise Grains Australia, GBA – Grain Biotech Australia, NSW DPI – New South Wales Department of Primary Industries, AGT – Australian Grain Technologies, CSIRO – Commonwealth Scientific and 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.

Effects of grain defects on end-product quality

BLACK POINT – Excessive levels may result in specky semolina or discoloured bran, wheat germ and divide 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 key-holing in bread, fragile noodles and dark, discoloured biscuits and cakes. Minimal impact on pasta except at FN (falling numbers) <200sec.

FROST DAMAGE – Can cause low falling number, 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°C) – Flour produced from this grain is of poor baking quality and baked products are often unsaleable.

Sensitivity of wheat varieties to herbicides

(see Table 4, next page)

Research in southern Queensland in the years from 1999 to 2015 has shown that herbicide tolerance differs among the wheat varieties grown in the northern region.

The research was undertaken at weed-free sites in two formats. The advanced trials compared plot yields of varieties sprayed at the recommended label rate and double label rates with the untreated controls. The preliminary trials compared plot yields of varieties sprayed at double the recommended label rate with the untreated control. Herbicide rates and crop stages at spraying are presented in Table 4.

The sensitivity of the varieties is summarised in Table 4 using the following symbols based on the yield responses across all trials:

- ✓ no significant yield reductions at a recommended or double rate
- N (narrow margin) significant yield reductions at double rate in 1+ trials, but not at recommended rate. Includes data from advanced and preliminary trials.

If a yield reduction is significant at the recommended label rate then a yield reduction percentage can be calculated. This will produce a warning. Where warnings are given, the effect at double rates is not included in the table.

x% yield reduction (warning) significant yield reduction at recommended rate in 1 trial only

x-y% yield reduction (warning) significant yield reduction at recommended rate in 2+ trials

- () years of screening, e.g. (2) is 2 years screening, (1/3) is there was yield loss in 1 year of 3 years screening.

NB Always follow label recommendations. All herbicide applications must accord with the currently registered label for that particular herbicide, crop, weed and region. Any research regarding herbicides and their use reported here does not constitute a recommendation for that particular use by the authors or Queensland DAF. It must be emphasised that crop tolerances and yield responses to herbicides are strongly influenced by seasonal conditions.

Table 4 Wheat varieties' response to herbicides

Variety	Achieve® tralkoxydim	Ally® metsulfuron	Ally® + MCPA / LVE Agritone® metsulfuron + MCPA	Ally® + Tordon 242® metsulfuron + (picloram + MCPA)	Amicide 500/625/700® 2,4-D amine	Atlantis OD® mesosulfuron	Axial 100EC® pinoxaden	Bromicide 200® bromoxynil	Bromicide MA® bromoxynil + MCPA	Cadence® dicamba	Glean® / Tackle® chlorsulfuron
BREAD & NOODLE WHEATS											
EGA Eaglehawk ^o		13 (1/1)			✓(1)	10 (1/1)	✓(2)				✓(1)
Sunzell ^o		N (1/5)	N (1/1)		✓(2)	N (2/2)					✓(4)
Strzeleck ^o	✓(2)	N (1/6)	✓(2)		✓(5)		✓(4)	N (1/4)	N (1/2)	38 (1/5)	✓(3)
Suntime ^o		N (1/3)	N (1/3)		✓(3)	✓(3)	✓(3)				✓(3)
LongReach Lancer ^o	✓(2)	7 (2/3)	N (3/5)		N (2/4)	N (1/5)	✓(3)				✓(4)
EGA Gregory ^o	✓(3)	N (2/12)	N (1/7)	✓(1)	✓(6)	✓(6)	✓(5)		N (1/3)		✓(10)
LongReach Flanker ^o		✓(1)	✓(1)		✓(11)	✓(1)	✓(1)				✓(1)
Sunvale ^o	✓(1)	N (2/4)	✓(1)		✓(4)	8 (1/2)	N (1/4)	✓(4)	✓(2)	✓(3)	✓(1)
EGA Bounty ^o	✓(1)	12 (1/4)			✓(2)	✓(3)	✓(1)		N (1/1)		N (2/4)
LongReach Gauntlet ^o		13 (1/2)	13 (1/1)		13 (1/1)	N (1/3)	N (1/3)				✓(2)
EGA Burke ^o	✓(1)	N (1/6)	✓(3)	✓(2)	24 (1/3)	✓(2)					✓(4)
EGA Wylie ^o	✓(3)	N (3/4)	✓(2)		N (1/2)	✓(1)				✓(2)	✓(3)
EGA Kidman ^o	✓(1)	✓(3)			✓(2)						✓(3)
Sunguard ^o		6 (1/2)	✓(1)		✓(3)	N (2/5)	✓(3)				✓(4)
Mitch ^o		14 (1/3)	N (2/5)		N (1/4)	N (1/5)	✓(3)				✓(4)
Elmore CL Plus ^o		✓(4)	N (1/3)		N (1/2)	N (1/3)	✓(2)				✓(2)
LongReach Viking ^o		✓(3)	✓(2)		✓(2)	✓(3)	✓(2)				✓(3)
Baxter ^o	✓(1)	N (1/5)	✓(2)		N (1/4)	N (1/2)	✓(4)	28 (1/4)	N (1/2)	N (1/3)	✓(2)
Sunco	✓(1)	17 (1/5)	✓(1)		✓(4)	N (1/2)	✓(4)	✓(4)	✓(2)	✓(3)	✓(1)
Lang ^o	✓(2)	8 (1/7)	N (2/5)	N (1/3)	✓(5)	✓(2)	✓(4)	✓(4)	✓(2)	✓(5)	✓(3)
Kennedy ^o	✓(1)	N (1/10)	✓(2)		✓(8)	N (1/3)	✓(4)	N (1/4)	N (1/2)	N (2/4)	N (1/6)
Suntop ^o		16 (1/2)	N (1/4)		N (1/4)	✓(3)	✓(3)				✓(3)
Hartog	✓(1)	N (1/6)	✓(1)		9 (1/5)		✓(4)	✓(4)	N (1/2)	37 (1/4)	✓(1)
Wallup ^o		N (1/3)	✓(2)		✓(2)	✓(2)	✓(2)				✓(2)
LongReach Spitfire ^o		16 (1/2)	✓(2)		✓(4)	N (1/5)	N (1/4)				N (1/4)
LongReach Crusader ^o	✓(1)	✓(4)	3-7 (2/2)	N (1/2)	17 (1/3)	✓(2)	✓(2)			28 (1/1)	✓(3)
Livingston ^o		9 (1/4)			✓(2)	✓(1)	✓(1)			✓(1)	N (1/3)
Sunmate ^o		N (1/3)	✓(2)		✓(2)	N (1/3)	✓(2)				N (1/3)
LongReach Dart ^o		12 (1/2)	N (1/3)		N (1/3)	✓(2)	✓(2)				✓(2)

Table 4 Wheat varieties' response to herbicides (continued)

Variety	Achieve® tralkoxydim	Ally® metsulfuron	Ally® + MCPA LVE®/ Agritone® metsulfuron + MCPA	Ally® + Tordon 242® metsulfuron + (picloram + MCPA)	Amicide 500/625/700® 2,4-D amine	Atlantis OD® mesosulfuron	Axial 100EC® pinoxaden	Bromicide 200® bromoxynil	Bromicide MA® bromoxynil + MCPA	Cadence® dicamba	Glean® / Tackle® chlorsulfuron
FEED WHEATS											
GBA Hunter ^{ob}	✓(2)	✓(4)			✓(1)	N (1/2)	✓(1)			16 (1/3)	✓(3)
EGA Stampede ^{ob}		✓(6)			N (1/3)	✓(2)	✓(1)			N (1/1)	✓(5)
DURUM WHEATS											
EGA Bellaroi ^{ob}	✓(3)	N (1/5)	9 (1/3)	✓(1)	✓(3)	9 (1/2)	✓(1)		✓(1)	✓(4)	✓(5)
Hyperno ^{ob}		12 (1/2)	4 (1/2)	N (1/2)		N (1/2)					✓(3)
Caparoi ^{ob}	✓(1)	N (2/5)	N (2/3)	N (2/3)	✓(3)						N (1/3)
Jandaroi ^{ob}		8-24 (4/10)	5-8 (2/4)	N (2/3)	N (1/7)	N (1/10)	N (1/6)			N (1/1)	N (2/10)
DBA Lillaroi ^{ob}		N (3/4)	N (2/4)		✓(4)	✓(4)	✓(4)				✓(4)
SOFT WHEATS											
LongReach Gazelle ^{ob}		15(1/1)	N (1/2)		✓(3)	✓(3)	✓(3)				✓(2)
LongReach Impala ^{ob}		15 (1/1)	✓(2)		✓(3)	9 (1/1)	✓(3)				7 (1/1)
Rates (product/ha)	380-430 g	7g	7g & 0.75L	7g & 1.0L	0.85L/ 0.65L	330mL	150-200mL	1.4L	1.4L	200g	20g
Crop stage at spraying	3-5 leaf + 1-2 tiller	3-7 leaf + 1-6 tiller	4-7 leaf + 2-6 tiller	4-7 leaf + 2-6 tiller	3-9 leaf + 2-5 tiller	2-4 leaf + 1-2 tiller	3-5 leaf + 1 tiller	4-7 leaf + 3-7 tiller	6-7 leaf + 3-7 tiller	3-6 leaf + 1-5 tiller	3-7 leaf + 1-6 tiller

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Table 4 Wheat varieties' response to herbicides (continued)

Variety	BREAD & NOODLE WHEATS									
	Hotshot® aminopyralid + fluroxypyr	Hussar OD® iodosulfuron	Logran® triasulfuron	MCPA amine® MCPA	MCPA LVE®/ LVA Agritone® MCPA	Starane 200®/Advanced® fluroxypyr	Topik 240EC® clodinafop	Tordon 75D®+ 2, 4-D picloram + 2,4-	Tordon 242® picloram + MCPA	Wildcat® fenoxaprop
EGA Eaglehawk ^o	✓(2)	✓(2)			✓(1)	✓(1)	✓(2)	✓(2)		
Sunzell ^o	✓(1)	13 (1/1)			✓(3)	✓(2)		✓(2)	✓(2)	
Strzelecki ^o	✓(4)	✓(2)	✓(2)	✓(2)	N (1/4)	N (1/8)	✓(4)	✓(8)	✓(4)	
Suntime ^o	✓(3)	✓(3)			✓(3)	✓(3)	✓(3)	✓(3)		
LongReach Lancer ^o	✓(3)	✓(5)			✓(3)	N (1/5)	✓(3)	✓(3)		
EGA Gregory ^o	✓(7)	N (3/6)		✓(1)	N (1/8)	N (1/7)	N (1/6)	✓(8)	✓(2)	
LongReach Flanker ^o	✓(1)	✓(1)			✓(1)	✓(1)	✓(1)	✓(1)		
Sunvale ^o	N (1/5)	✓(4)	✓(3)		✓(3)	✓(6)	13 (1/4)	✓(7)	✓(4)	
EGA Bounty ^o		✓(3)			N (1/3)	✓(2)	✓(1)	✓(3)	✓(1)	
LongReach Gauntlet ^o	✓(3)	N (3/5)			✓(3)	N (1/4)	✓(4)	✓(3)		
EGA Burke ^o	✓(1)	N (1/2)			✓(5)	✓(2)		N (1/4)		
EGA Wylie ^o	✓(2)	✓(2)		N (1/1)	22 (1/3)	✓(2)	✓(1)	✓(1)	✓(1)	
EGA Kidman ^o		✓(1)			✓(2)	✓(1)		✓(2)		
Sunguard ^o	✓(3)	N (2/5)			✓(3)	✓(2)	N (1/3)	✓(3)		
Mitch ^o	✓(3)	N (1/5)			✓(3)	N (1/5)	✓(3)	✓(3)		
Elmore CL Plus ^o	✓(2)	✓(3)			✓(3)	N (1/3)	5 (1/1)	✓(2)		
LongReach Viking ^o	✓(2)	✓(3)			✓(2)	✓(2)	✓(2)	✓(2)		
Baxter ^o	✓(5)	N (1/4)	✓(3)		N (2/4)	N (1/6)	✓(4)	N (1/7)	N (1/4)	
Sunco	N (1/5)	N (1/4)	N (1/3)		✓(3)	✓(6)	✓(4)	✓(7)	✓(4)	
Lang ^o	✓(5)	✓(4)	✓(2)	✓(2)	✓(4)	N (1/8)	✓(4)	N (1/8)	✓(4)	
Kennedy ^o	✓(7)	14 (1/6)	N (1/3)		N (2/9)	✓(10)	✓(3)	N (2/11)	✓(4)	
Suntop ^o	✓(3)	✓(5)			✓(4)	N (1/4)	N (1/4)	✓(3)		
Hartog	✓(3)	✓(1)	✓(3)	✓(1)	✓(4)	N (1/7)	✓(5)	N (1/7)	N (1/5)	
Wallup ^o	✓(2)	✓(3)			✓(3)	✓(2)	N (2/3)	✓(2)		
LongReach Spitfire ^o	✓(4)	N (1/6)			N (1/4)	✓(3)	N (1/5)	✓(4)		
LongReach Crusader ^o	✓(1)	✓(2)			N (2/2)	✓(2)	✓(2)	N (1/2)	✓(1)	
Livingston ^o		✓(1)			✓(4)	✓(3)	✓(1)	✓(4)		
Sunmate ^o	✓(2)	✓(3)			✓(2)	✓(2)	✓(2)	✓(2)		
LongReach Dart ^o	✓(2)	N (1/3)			✓(3)	N (1/3)	N (1/3)	✓(2)		

Table 4 Wheat varieties' response to herbicides (continued)

Variety	Hotshot® aminopyralid + fluoxypyr	Hussar OD® iodosulfuron	Logran® triasulfuron	MCPA amine® MCPA	MCPA LVE®/Agritone® MCPA	Starane 200®/Advanced® fluoxypyr	Topik 240EC® clodinafop	Tordon 75D®+ 2, 4-D picloram + 2,4-	Tordon 242® picloram + MCPA	Wildcat® fenoxaprop
FEED WHEATS	GBA Hunter [®]	✓(2)	12 (1/3)	✓(1)	17 (1/6)	12 (1/2)	✓(1)		✓(4)	✓(1)
	EGA Stampede [®]		✓(2)		✓(5)	✓(4)	✓(1)		N (1/5)	✓(1)
	EGA Bellaroi [®]	✓(4)	11 (1/4)	✓(3)	✓(4)	✓(5)	✓(3)		✓(4)	✓(3)
	Hypermo [®]		✓(2)		✓(2)				✓(2)	
DURUM WHEATS	Caparoi [®]				✓(3)	✓(2)			✓(3)	
	Jandaroi [®]	✓(6)	14 (2/4)		✓(9)	N (1/8)	N (1/6)		✓(9)	✓(1)
	DBA Lillaroi [®]	N (1/4)	N (1/4)		✓(4)	✓(4)	✓(4)		✓(4)	
SOFT WHEATS	LongReach Gazelle [®]	✓(3)	N (2/4)		N (1/3)	✓(3)	N (2/4)		✓(3)	
	LongReach Impala [®]	✓(3)	N (2/3)		✓(2)	✓(2)	N (1/3)		✓(3)	
	Rates (product/ha)	0.75L	200g	35g	0.75L	1.0L/ 0.6L	85mL	300 & 600mL	1.0L	0.5L
	Crop stage at spraying	5-7 leaf + 3-5 tiller	2-5 leaf + 1-2 tiller	Pre-plant	3-6 leaf + 1-5 tiller	3-6 leaf + 1-5 tiller	5-6 leaf + 3-6 tiller	3-5 leaf + 1-2 tiller	4-6 leaf + 1-6 tiller	3-5 leaf + 1-2 tiller

These ratings are a guide only, based on results from trials held from 1999 to 2015. Further information is available on the DAF and NVT websites. For more information, contact Douglas Lush (douglas.lush@dat.qld.gov.au, 07 4639 8812). This research is funded by the GRDC.

Comparative yields in Queensland NVT wheat trials 2011–15

Table 5.1 Central Queensland long-term yield – early season, 2011–15.

Variety name	Predicted yield (t/ha)	% of regional mean yield	Total no. trials
Baxter [®]	3.31	93	21
EGA Bounty [®]	3.55	100	21
EGA Burke [®]	3.46	97	21
EGA Gregory [®]	3.70	104	21
EGA Wylie [®]	3.35	94	9
Lang [®]	3.27	92	9
LongReach Flanker [®]	3.93	110	7
LongReach Gauntlet [®]	3.38	95	17
LongReach Lancer [®]	3.36	94	16
LongReach Viking [®]	3.74	105	11
Mitch [®]	3.71	104	16
Strzelecki [®]	3.46	97	20
Sunguard [®]	3.43	96	16
Suntime [®]	3.41	95	9
Sunvale [®]	3.29	92	21

Table 5.2 Central Queensland long-term yield – main season, 2011–15.

Variety name	Predicted yield (t/ha)	% of regional mean yield	Total no. trials
Baxter [®]	3.39	101	17
EGA Burke [®]	3.47	104	9
EGA Gregory [®]	3.52	105	21
EGA Wylie [®]	3.38	101	3
Elmore CL Plus [®]	3.41	102	21
Hartog [®]	3.44	103	21
Kennedy [®]	3.25	97	21
Lang [®]	3.20	96	17
Livingston [®]	3.18	95	21
LongReach Crusader [®]	3.21	96	21
LongReach Dart [®]	2.97	89	21
LongReach Flanker [®]	3.73	111	8
LongReach Gauntlet [®]	3.24	97	13
LongReach Spitfire [®]	3.36	100	21
LongReach Viking [®]	3.58	107	8
Mitch [®]	3.70	110	8
Sunco	3.23	96	13
Sunguard [®]	3.31	99	10
Sunmate [®]	3.39	101	17
Suntop [®]	3.49	104	21
Wallup [®]	3.30	99	21

Table 5.3 South-East Queensland long-term wheat yield – early season, 2011–15.

Variety Name	Predicted yield (t/ha)	% of regional mean yield	Total no. trials
Baxter ^{db}	4.25	103	9
EGA Bounty ^{db}	4.28	103	9
EGA Burke ^{db}	4.26	103	7
EGA Gregory ^{db}	4.32	104	9
EGA Wylie ^{db}	4.19	101	3
Lang ^{db}	4.08	98	5
LongReach Flanker ^{db}	4.45	107	4
LongReach Gauntlet ^{db}	4.22	102	8
LongReach Gazelle ^{db}	3.69	89	9
LongReach Lancer ^{db}	4.20	101	9
LongReach Viking ^{db}	4.39	106	6
Mitch ^{db}	4.31	104	9
Strzelecki ^{db}	3.93	95	9
Sunguard ^{db}	4.21	101	7
Suntime ^{db}	4.13	100	8
Sunvale ^{db}	4.06	98	9
Sunzell ^{db}	4.15	100	9

Table 5.5 South-West Queensland long-term wheat yield – early season, 2011–15.

Variety name	Predicted yield (t/ha)	% of regional mean yield	Total no. trials
Baxter ^{db}	2.90	101	37
EGA Bounty ^{db}	2.91	101	37
EGA Burke ^{db}	2.99	104	28
EGA Gregory ^{db}	3.03	105	37
EGA Wylie ^{db}	2.83	98	21
Lang ^{db}	2.84	99	28
LongReach Flanker ^{db}	3.21	112	16
LongReach Gauntlet ^{db}	2.93	102	31
LongReach Lancer ^{db}	2.87	100	37
LongReach Viking ^{db}	3.08	107	23
Mitch ^{db}	3.09	108	37
Strzelecki ^{db}	2.72	95	37
Sunco	2.82	98	14
Sunguard ^{db}	2.92	101	29
Suntime ^{db}	2.82	98	31
Sunvale ^{db}	2.77	96	37
Sunzell ^{db}	2.71	94	37

Table 5.4 South-East Queensland long-term wheat yield – main season, 2011–15.

Variety Name	Predicted yield (t/ha)	% of regional mean yield	Total no. trials
Baxter ^{db}	4.23	104	7
EGA Burke ^{db}	4.19	103	6
EGA Gregory ^{db}	4.16	102	9
EGA Kidman ^{db}	4.10	100	5
EGA Wylie ^{db}	4.13	101	9
Elmore CL Plus ^{db}	4.03	99	9
Hartog	4.10	100	9
Kennedy ^{db}	3.91	96	9
Lang ^{db}	3.86	94	8
Livingston ^{db}	4.11	101	9
LongReach Crusader ^{db}	3.98	97	9
LongReach Dart ^{db}	3.77	92	9
LongReach Flanker ^{db}	4.42	108	4
LongReach Gauntlet ^{db}	4.08	100	8
LongReach Impala ^{db}	4.06	99	9
LongReach Spitfire ^{db}	4.02	98	9
LongReach Viking ^{db}	4.29	105	4
Mitch ^{db}	4.26	104	4
Sunco	3.96	97	4
Sunguard ^{db}	4.07	100	7
Sunmate ^{db}	4.27	105	8
Suntop ^{db}	4.34	106	9
Wallup ^{db}	4.10	100	9

Table 5.6 South-West Queensland long-term wheat yield – main season, 2011–15.

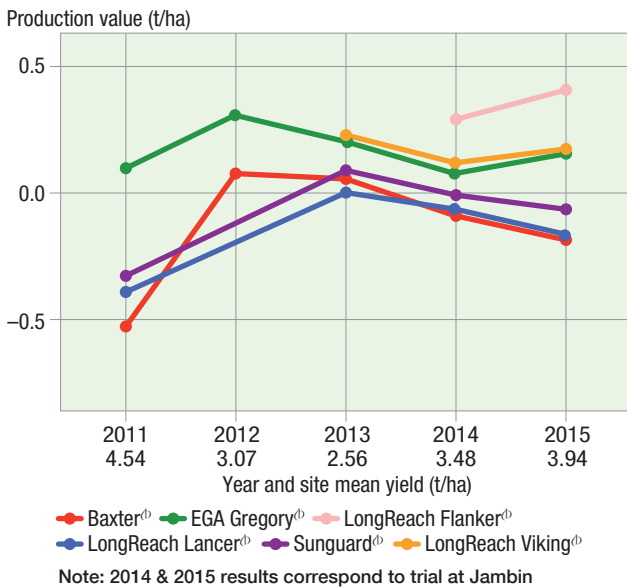
Variety name	Predicted Yield (t/ha)	% of regional mean yield	Total no. trials
Baxter ^{db}	2.85	99	22
EGA Burke ^{db}	2.96	103	14
EGA Gregory ^{db}	3.00	104	37
EGA Kidman ^{db}	2.85	99	22
EGA Wylie ^{db}	2.85	99	37
Elmore CL Plus ^{db}	2.89	100	37
Hartog	2.88	100	37
Kennedy ^{db}	2.70	94	37
Lang ^{db}	2.68	93	37
Livingston ^{db}	2.93	102	37
LongReach Crusader ^{db}	2.76	95	37
LongReach Dart ^{db}	2.75	95	37
LongReach Flanker ^{db}	3.18	110	15
LongReach Gauntlet ^{db}	2.90	100	31
LongReach Spitfire ^{db}	2.89	100	37
LongReach Viking ^{db}	3.04	105	15
Mitch ^{db}	3.15	109	16
Sunco	2.71	94	22
Sunguard ^{db}	2.89	100	29
Sunmate ^{db}	3.08	107	31
Suntop ^{db}	3.13	109	37
Wallup ^{db}	2.95	102	37

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) are obtained from a statistical analysis of long-term multi-environmental trial (MET) data collected between the years of 2011 and 2015. These values represent the best available predictions for the specified region and are provided to facilitate reliable variety selection decisions.

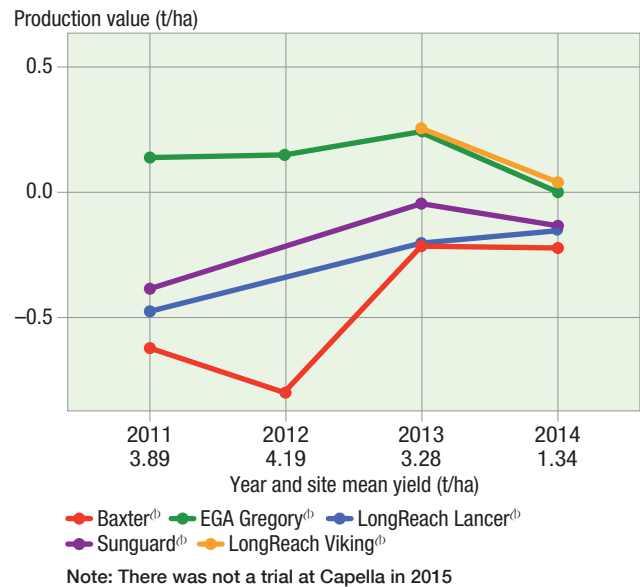
Locality based yield graphs (NVT wheat trials 2011–15)

The regional mean yields shown in Tables 5.1 to 5.6 average varietal performance across trial locations within each region (pages 14 and 15). 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 (PV) 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. PV is the varietal yield advantage (t/ha) of a variety in a particular environment. The PVs are shown as positive or negative differences relative to a baseline, which reflects the expected average yield of all the varieties included in the current main and early season NVT wheat data set for the northern region. 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).

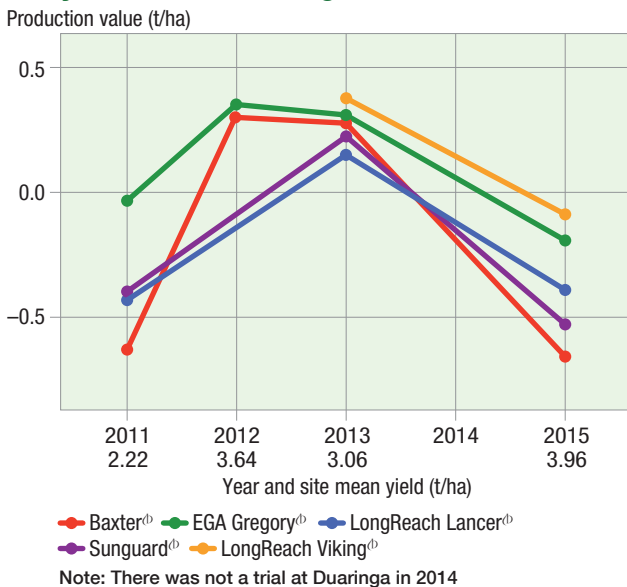
Early season – Biloela (Central Queensland)



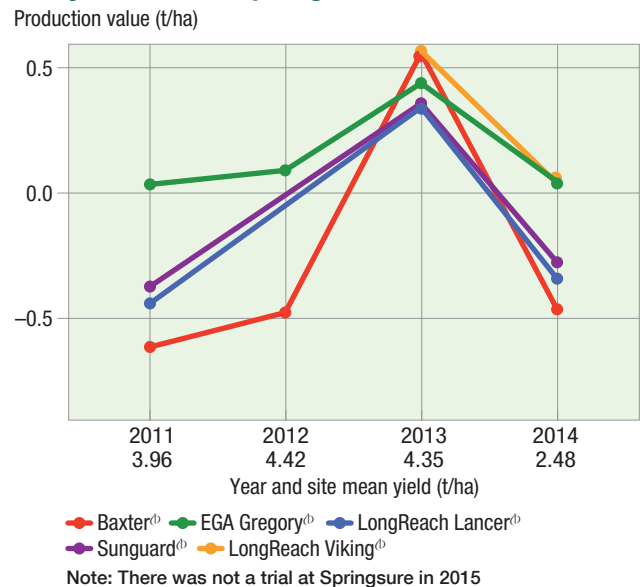
Early season – Capella (Central Queensland)



Early season – Duringa (Central Queensland)

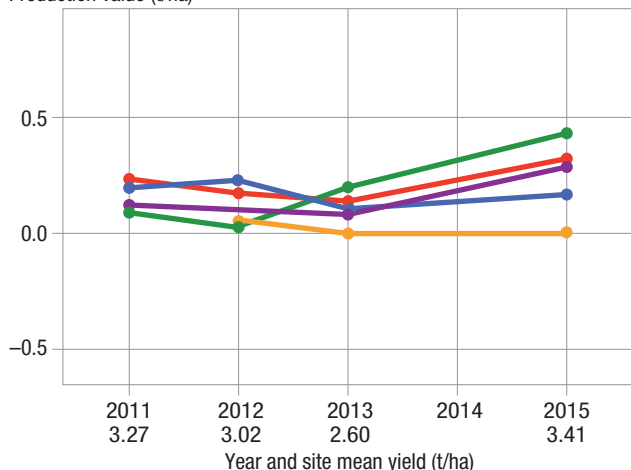


Early season – Springsure (Central Queensland)



Early season – Bungunya (SW Queensland)

Production value (t/ha)

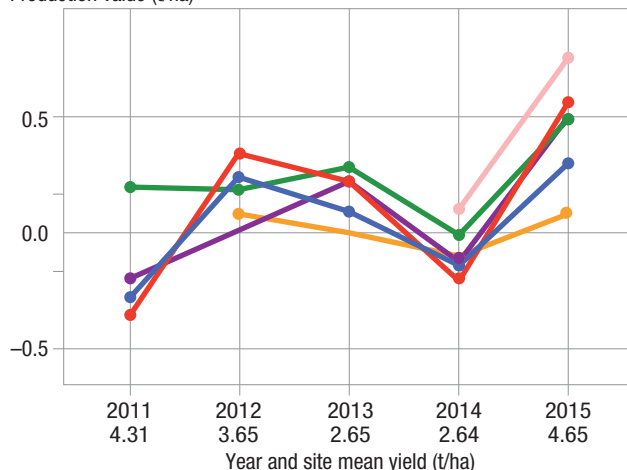


Legend: Baxter^(b), EGA Gregory^(b), LongReach Lancer^(b), Sunguard^(b), Suntime^(b)

Note: There was not a trial at Bungunya in 2014

Early season – Lundavra (SW Queensland)

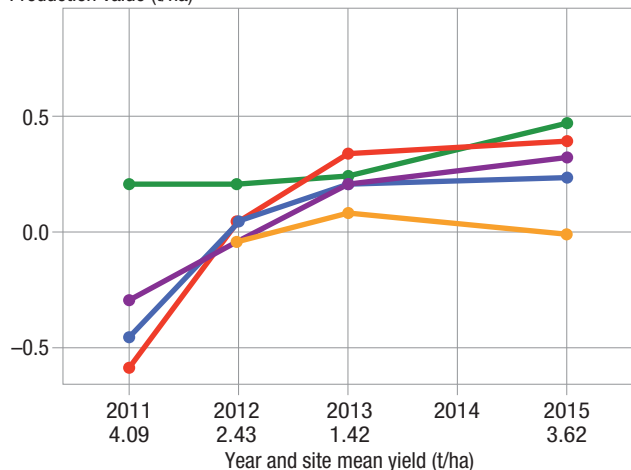
Production value (t/ha)



Legend: Baxter^(b), EGA Gregory^(b), LongReach Flanker^(b), LongReach Lancer^(b), Sunguard^(b), Suntime^(b)

Early season – Meandarra (SW Queensland)

Production value (t/ha)

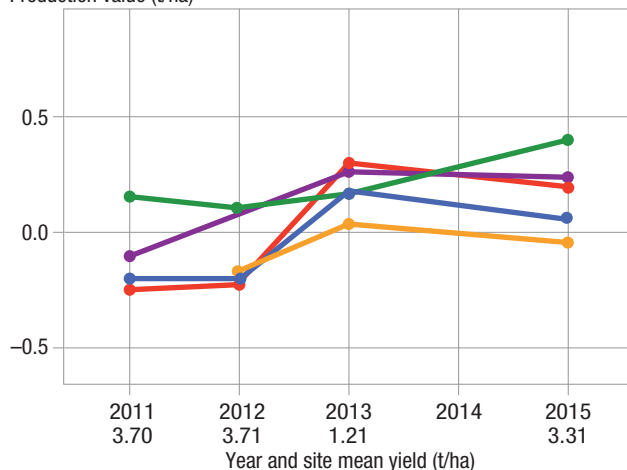


Legend: Baxter^(b), EGA Gregory^(b), LongReach Lancer^(b), Sunguard^(b), Suntime^(b)

Note: There was not a trial at Meandarra in 2014

Early season – Mungindi (SW Queensland)

Production value (t/ha)

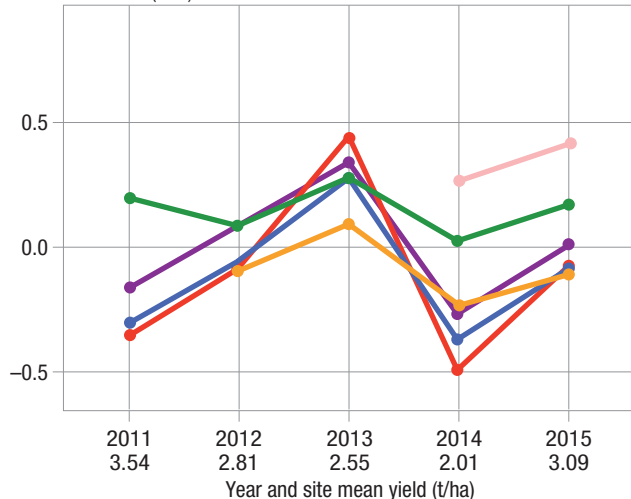


Legend: Baxter^(b), EGA Gregory^(b), LongReach Lancer^(b), Sunguard^(b), Suntime^(b)

Note: Trial data from 2014 was not released by NVT

Early season – Roma (SW Queensland)

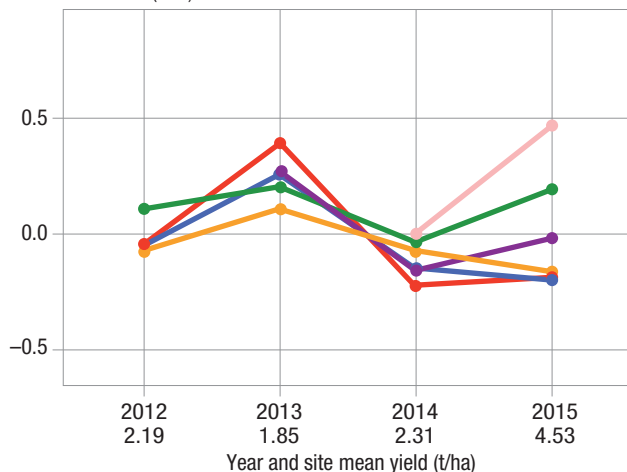
Production value (t/ha)



Legend: Baxter^(b), EGA Gregory^(b), LongReach Flanker^(b), LongReach Lancer^(b), Sunguard^(b), Suntime^(b)

Early season – Westmar (SW Queensland)

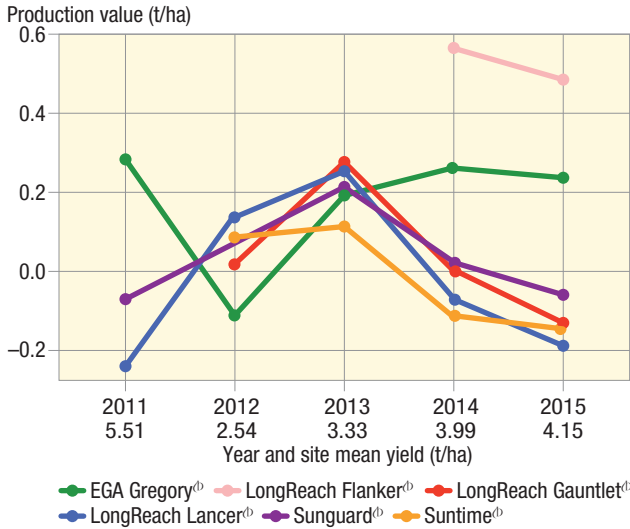
Production value (t/ha)



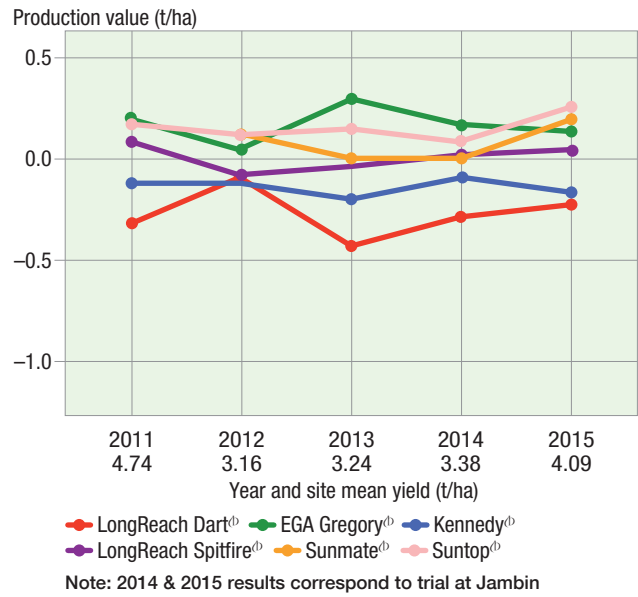
Legend: Baxter^(b), EGA Gregory^(b), LongReach Flanker^(b), LongReach Lancer^(b), Sunguard^(b), Suntime^(b)

Note: There was not a trial at Westmar in 2011

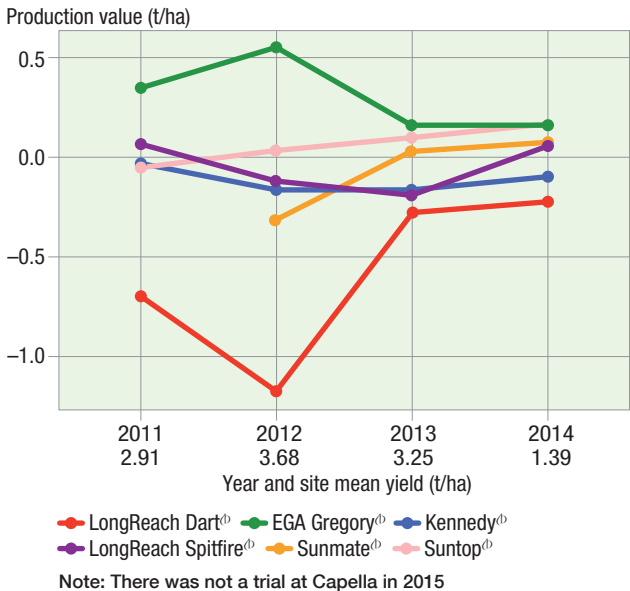
Early season – Macalister (SE Queensland)



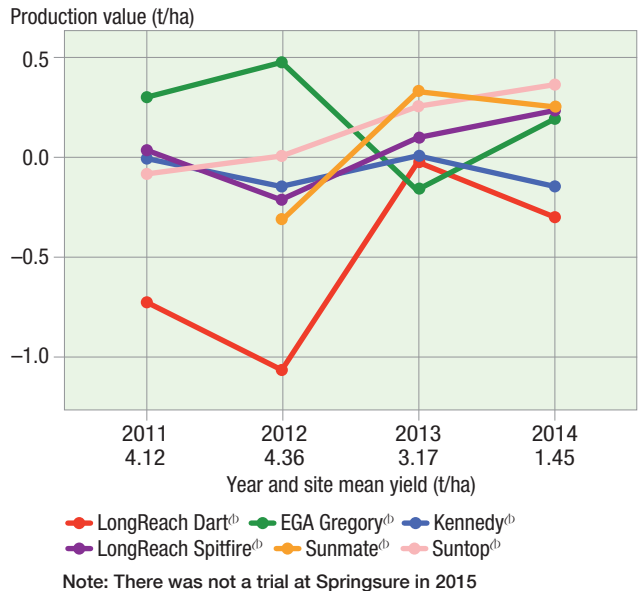
Main season – Biloela (Central Queensland)



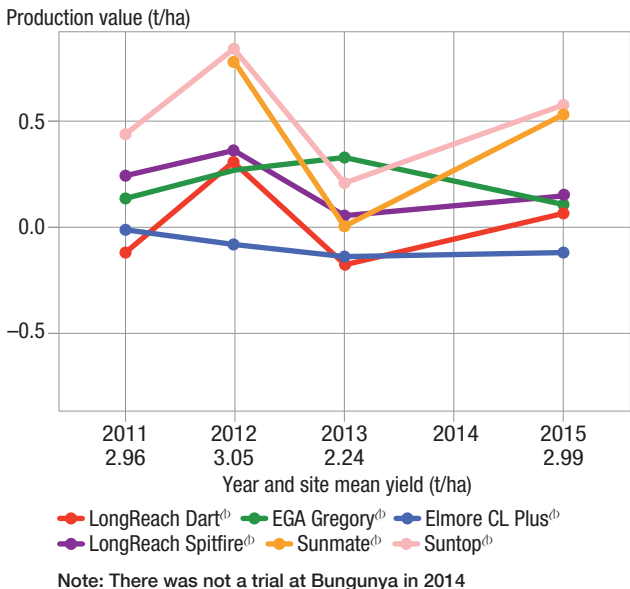
Main season – Capella (Central Queensland)



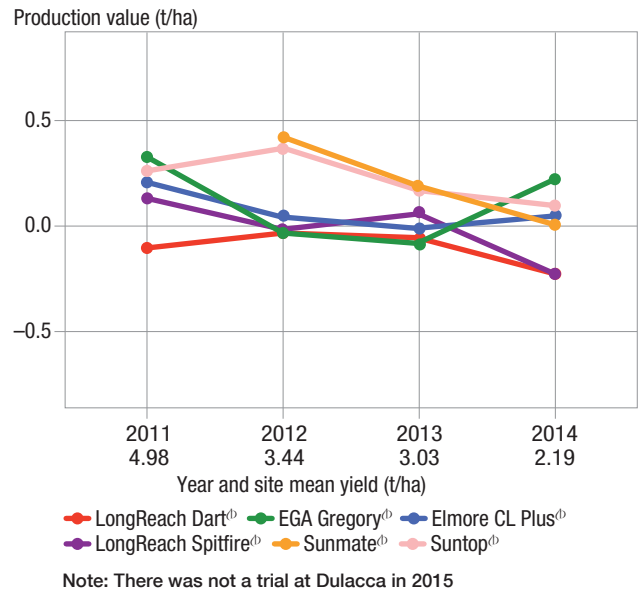
Main season – Springsure (Central Queensland)



Main season – Bungunya (SW Queensland)

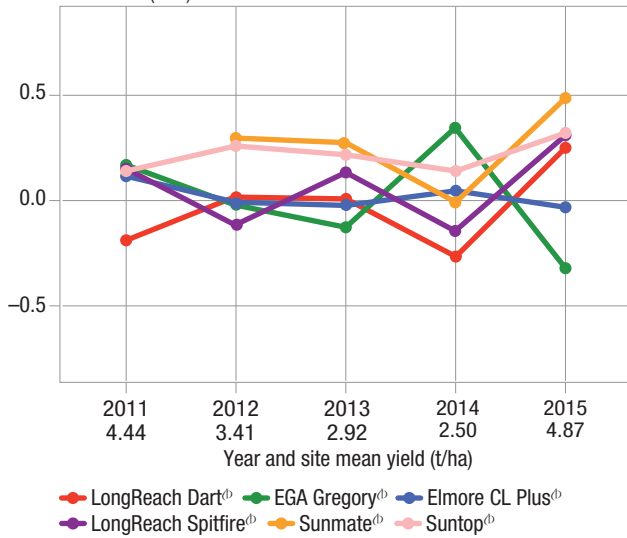


Main season – Dulacca (SW Queensland)



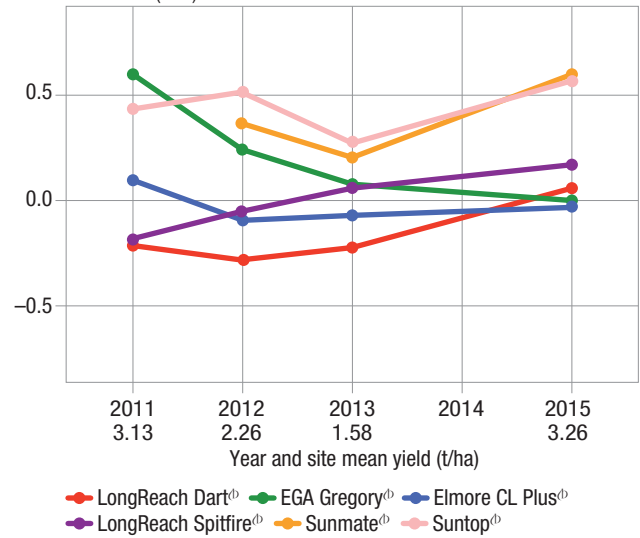
Main season – Lundavra (SW Queensland)

Production value (t/ha)



Main season – Meandarra (SW Queensland)

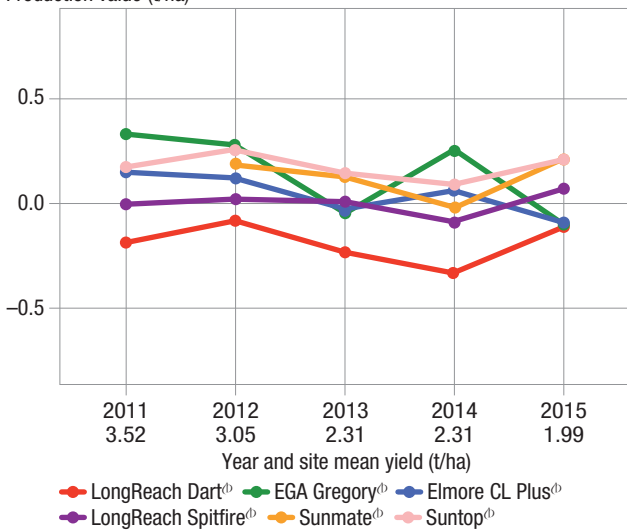
Production value (t/ha)



Note: There was not a trial at Meandarra in 2014

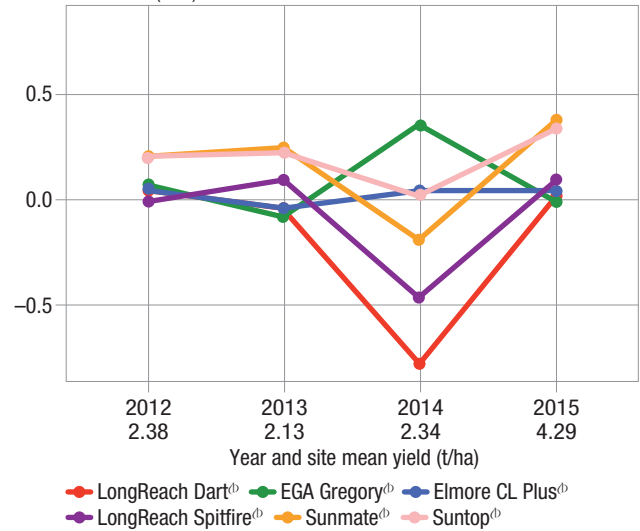
Main season – Roma (SW Queensland)

Production value (t/ha)



Main season – Westmar (SW Queensland)

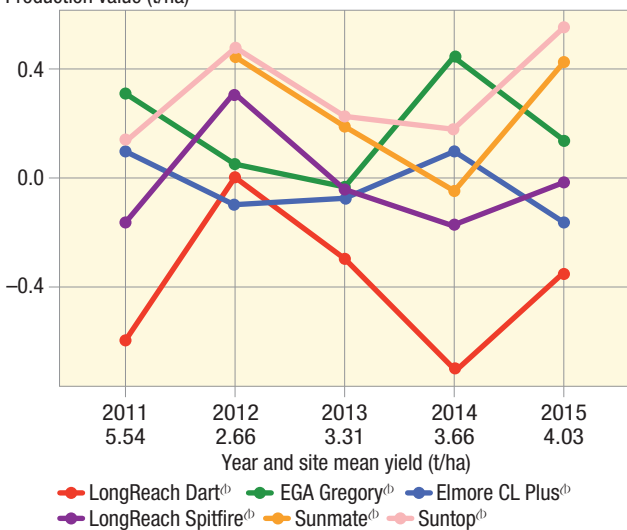
Production value (t/ha)



Note: There was not a trial at Westmar in 2011

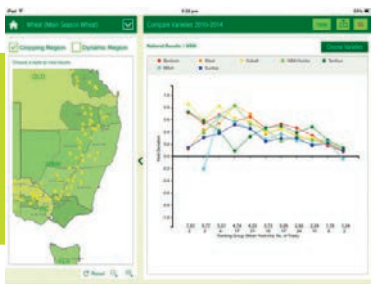
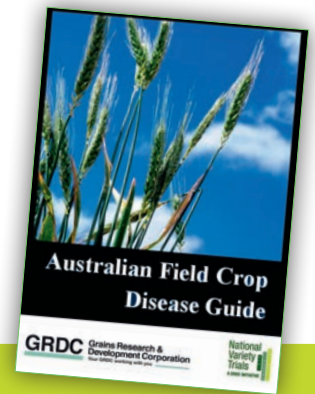
Main season – Macalister (SE Queensland)

Production value (t/ha)

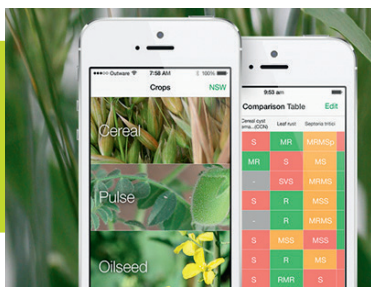


NVT apps

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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.

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