



Fusion leads the triticale pack in 2015

By **Charlton Jeisman**, Senior Research officer, SARDI, and **Rob Wheeler**, Leader, New Variety Agronomy, SARDI

Despite a very dry finish to the 2015 season across SA, the mid-maturing variety Fusion held its ground, achieving the highest yield when averaged across all NVT sites in SA. Fusion's success was closely followed by the newly-released varieties Astute and Bison which achieved 9% and 7% (respectively) above site mean yields when averaged across all sites.

For the second year in a row Fusion was highest yielding at Bute, Turretfield and Pinnaroo and was a close second at both Eyre Peninsula sites in 2015.

This highlights Fusion's outstanding performance in seasons with low spring rainfall and demonstrates broad adaptation across regions.

For the last few seasons Bogong has given Fusion some strong competition, however in 2015 Bogong's yields were rather moderate at only 4% above site means across sites.

Bogong performed well at Wharminda and Conmurra where growing season rainfall was above 280mm, but barely ranked among the top five yielding varieties at other sites.

While low spring rainfall in 2015 kept site average yields below average, it also meant foliar diseases were kept to a minimum across sites. Site average yields ranged from 1.64 t/ha at Pinnaroo to 5.44 t/ha at Conmurra.

Due to seasonal differences in yield performance of varieties, it is important to consider long term averages and whether the variety has been widely evaluated across seasons and sites.

Astute and Bison are examples of varieties demonstrating excellent adaptability across regions, although they have only been evaluated for 3 years in most cases.

In addition, when comparing site yields with long term averages for Eyre Peninsula, note the long term averages include results from sites at Streaky Bay (Upper Eyre) and Greenpatch (Lower Eyre) and although these sites will not be continued the yield potential of varieties in these districts continues to be reflected in the long term averages.

Long term data shows Fusion, Astute, Bison and Bogong are consistently in the top five triticale varieties for grain production.

In recent times, Australian Grain Technologies (AGT) have released two new triticale varieties; Bison (2014) and Astute (2015).

Both varieties boast very high and stable grain yield, have mid-season maturity and have tolerance to acid soils (particularly in relation to aluminum which becomes increasingly available



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when soil pH levels fall below 5.5). Both varieties have excellent resistance to CCN and to all three rusts.

Bison is well suited to low-medium yield potential environments and is a replacement for Rufus; while Astute has been bred for the medium-high rainfall areas and is a replacement for Hawkeye.

Grain quality was excellent for most varieties across sites in 2015, with all varieties at Bute, Conmurra, Pinnaroo and Wharminda meeting minimum receival

standards for Trit1.

A number of varieties at Minnipa recorded low test weights (below 65 kg/hL) including Bison, Chopper, Jaywick and Rufus downgrading them to Trit2.

Low spring moisture on a heavy soil type at Turretfield resulted in pinched grain with low test weights and very high screenings. Only Jaywick, KM10, Tahara and Tuckerbox managed screenings below 10% to make Trit1 with all other varieties at Turretfield making Trit2 or worse.

Astute and Hawkeye (similar flowering time) both had lowest screenings across all sites in 2015.

Grain protein levels averaged around 10-12% at most sites, while Turretfield averaged 16%; although protein is not a consideration in receival standards for triticale. Thousand-grain-weights were slightly below average across sites in 2015 with the exception of Conmurra which averaged 44 g/1000 seeds.

Some exceptionally high test weights at this site include Hawkeye (49 g/1000 seeds), Berkshire, Bison and Jaywick (all 48 g/1000 seeds) and Bogong, Canobolas and Fusion (all 46 g/1000 seeds).

At Wharminda, Chopper, Rufus and Tahara all achieved 40 g/1000 seeds and above.

Average test weights across sites in 2015 ranged between 66 kg/hL (Minnipa) and 78 kg/hL (Conmurra) with the highest test weights achieved across all sites being Goanna (within top two across sites) and Bogong (within top 3).

In contrast however (and has been seen for a number of years), Bison appears to struggle with below average test weights, consistently weighing around 4% lower than site averages (2.5% lower at Conmurra in 2015). ■

■ **More information:**

Charlton Jeisman (08) 8303 9475 or 0438 875 290
charlton.jeisman@sa.gov.au



Triticale

SA Triticale Variety Yield Performance (2015 and long term, 2008-2015, expressed as % of site average yield and as t/ha)

Variety	Long Term average across sites within region (2008-2015) as % site average and No of trials															
	2015	LEP	UEP	YP	MN	MM	SE	Lower Eyre	Upper Eyre	Yorke Pen.	Mid North	Murray Mallee	South East			
	Wharminda	Minnipa	Bute	Turretfield	Pinnaroo	Conmurra	% site av. # trials	% site av. # trials	% site av. # trials	% site av. # trials	% site av. # trials	% site av. # trials	% site av. # trials			
Astute	107	113	105	107	109	113	112	3	106	4	109	3	107	3	120	3
Berkshire	-	96	91	102	98	-	105	10	101	12	100	7	100	7	102	6
Bison	101	107	109	109	113	102	112	3	107	4	108	3	108	3	111	3
Bogong	114	99	103	97	94	114	109	13	105	14	108	8	101	8	112	8
Canobolas	99	99	96	92	93	96	107	13	101	14	101	8	99	8	107	8
Chopper	99	94	109	101	87	-	103	13	102	14	100	8	101	8	92	4
Endeavour	-	-	-	-	-	84	84	7	-	-	-	-	-	-	91	6
Fusion	109	110	114	114	118	105	111	9	107	10	109	6	109	6	110	6
Goanna	104	98	101	91	96	104	99	7	98	8	99	5	96	5	97	5
Hawkeye	99	99	96	96	101	102	104	13	99	14	99	8	101	8	105	8
Jaywick	99	83	89	90	88	102	100	13	95	14	95	8	97	8	104	8
Rufus	103	96	102	88	101	96	97	13	97	14	98	8	96	8	95	8
Tahara	102	92	102	104	93	90	97	13	97	14	98	8	96	8	94	8
Tuckerbox	91	-	70	91	-	85	86	10	-	-	85	5	-	-	86	7
Yowie	97	82	75	88	91	101	95	9	92	10	91	6	92	6	97	6
Yukuri	74	-	-	-	-	76	79	10	-	-	-	-	-	-	87	8
Site av Yield (t/ha)	4.11	3.17	3.84	1.79	1.64	5.44	3.37	13	2.54	14	3.4	8	2.45	8	5.68	8
LSD (%)	6	5	6	12	6	11										
Date Sown	11 May	12 May	11 May	28 May	7 May	28 May										
Soil Type	SL	SL	SL	LC/LMC	CL	CL/ limestone										
J-M / A-O rain mm	21/284	14/258	61/207	64/262	67/183	71/347										
pHwater	6.5	8.8	8.8	9.1	8.7	7.7										
previous crop	Pasture	Pasture	Lentil	Pasture	Wheat	Faba Bean										
Stress factors	dl		dl	dl	dl											

Abbreviations
Soil types
 S=sand, C=clay, L=loam, F=fine, K=coarse, M=medium, Li=light, H=heavy, / =divides topsoil from subsoil NWS= non wetting sand
Site stress factors
 de=pre-flowering moisture stress dl=post-flowering moisture stress, r=rhizoctonia, yr= stripe rust,w=waterlogging b=boron lb=late break
 Data source: SARDI/GRDC & NVT (long term data based on weighted analysis of sites)
Data analysis by GRDC funded National Statistics Group