



AgGrow

AGRONOMY + RESEARCH



WHEAT & BARLEY IRRIGATED AND DRYLAND VARIETY TRIALS Hillston & Rankins Springs, 2015

INDEPENDENT AGRONOMY ADVICE + CUTTING EDGE RESEARCH

HART BROS SEEDS VARIETY TRIALS

KEY POINTS

- * Seasonal conditions tested the performance of all varieties at both the irrigated and dryland trial sites. A dry spring characterised the season, with a late hail storm impacting yield and lodging at Hillston.
- * Some newly released lines are showing promise in terms of yield and standability in the local environment.
- * The durum variety 280913 performed well on irrigation at Hillston, out-yielding all other varieties. It also had the least amount of lodging out of the durum varieties in the trial.
- * Barley again did not yield or stand up well on irrigation at Hillston given the conditions.

BACKGROUND

For the second consecutive season, we are trialling a number of new wheat and barley varieties alongside current commercially grown varieties.

These trials give local growers the opportunity to see how new varieties perform under local conditions, complimenting NVT trials. They allows growers to see if there are any advantages of these varieties over current commercially grown varieties, in terms of yield and quality as well as acid soil tolerance on dryland, and lodging tolerance on irrigation.

As this is the second season that these trials have been conducted, growers will be able to compare varietal performance across seasons.

TRIAL DETAILS

Two trials were established in the area in 2015. A dryland trial, which was sown on 14th May at Michael Pfitzner's, in the Rankins Springs area and an irrigated trial, which was sown on 25th May at Graeme Horneman's, Hillston. Both these trials were a collaboration with Hart Bros Seeds.

The aim of the trials were to compare the performance of potential wheat and barley varieties with existing varieties commonly grown in SNSW under local irrigated and dryland conditions.

There are 45 varieties in both the irrigated and dryland trial, table 1. These varieties are a combination of numbered lines, newly released varieties and current varieties, all of which are of interest or suited to the region.

Both trials were replicated 3 times. Plot sizes were 11m by 1.75m for the Rankins Springs trial and 11m by 1.5m for the Hillston trial.

Rankins Springs Trial:

The Rankins Springs trial was sown on an 18 month fallow It was sown at 30 kg/ha with 60 kg/ha MAP. It also received 85kg Urea in August, and 2 fungicide applications the first in July and the second in September.

Appropriate weed control was undertaken pre-emergence and again in crop. The growing season rainfall was 303mm. It was harvested on 16th November.

Hillston Trial:

The Hillston trial was sown following maize in 2014. It was sown at 100 kg/ha with 150 kg/ha MAP and had 200 kg/ha urea pre-drilled. It was also topdressed by air early September with 200 kg/ha urea.

Appropriate weed control was undertaken pre-emergence and again in crop. Two spring irrigations were applied on 20th September (1.8 MI/ha) and 15th October (1.2 MI/ha), as were 2 timely fungicides in August and October. It was harvested on 24th November.

Establishment scores, lodging at harvest, grain yield and quality, were measured on both trials and are shown in the results section.

Table 1: Variety List for the dryland and irrigated variety trials.

VARIETIES					
1	Corack	16	Viking	31	Bellaroi
2	Elmore	17	Gregory	32	280913
3	Mace	18	Flanker	33	Compass
4	Sceptor	19	LPB09 -0358	34	Fathom.
5	Beckom	20	Emu_Rock	35	Hindmarsh
6	Sunmate	21	DS Darwin	36	Latrobe
7	Suntop	22	DS Pascal	37	IGB - 1334T
8	Condo	23	Merinda	38	Buloke
9	Wallup	24	Gauntlet	39	Scope
10	Sunlamb	25	Wedgetail	40	Cobra
11	Lancer	26	Sunvale	41	Commander
12	Impala	27	Livingston	42	Schooner
13	Trojan	28	Chara	43	Caparoi
14	Gazelle	29	H45	44	Aurora
15	Spitfire	30	Crusader	45	Lillaroi

Figure 1: Rankins Springs (left) and Hillston (right) variety trials, taken September and October.



RESULTS AND DISCUSSION

Statistical analysis was carried out on these trials for grain yield.

Grain quality analysis was also carried out on these trials but was not statistically analysed.

Rankins Springs

Establishment:

Establishment was scored on 9th June when the crop was around the 2-3 leaf stage. Establishment of the trial was not as even as the irrigated trial with scores ranging from 6 to 9. The variety Gauntlet had germination issues, so establishment scores were not included in the assessment.

Grain Yield:

The average grain yield of this trial was 5.24 t/ha. Yields in the trial ranged from 3.2 t/ha, for the wheat variety Gauntlet, although this variety had germination issues, up to 6.13 t/ha for the wheat variety Trojan. This is shown in figure 4.

Other varieties in the trial to perform well were H45 yielding 6.06 t/ha, the durum variety Aurora yielding 6 t/ha, Sunmate yielding 5.9 t/ha and the varieties Chara, Flanker and Elmore all yielding 5.8 t/ha. The highest yielding barley variety was Commander yielding 5.68 t/ha.

Besides Gauntlet the only variety to yield below 4 t/ha was the barley variety Schooner.

Grain Quality:

Grain protein ranged from 10.3%, for the variety Trojan, up to 14.3% for the variety Schooner. The average grain protein for this site was 11.71%.

Hillston

A hail storm went through the trial on 12th November. This may have impacted on the results of the trial, in particular the lodging scores, figure 2 and grain yield.

Establishment:

Establishment scores were taken early July, when the crop was around the 5 leaf to the start of tillering stage. The trial established well with scores of mostly 8 or 9, with 9 being very even evenly established. Again the variety Gauntlet had a reduced establishment score compared to the other varieties.

Lodging Scores:

Lodging scores were taken at harvest. Lodging was scored on a scale of 0 to 9, with 0 indicating no lodging and 9 flat on the ground.

Whilst there was no lodging recorded at the dryland Rankins Springs site, under a high input irrigated situation, as was the case at Hillston, most of the varieties showed some degree of lodging, as shown in figure 3.

The hail storm in November impacted on the degree of lodging in the trial, although not recorded some varieties were lodged before this storm.

Barley varieties were generally worst for lodging as were the durum varieties, although the durum variety 280913 had the least amount of lodging out of the durums.

The wheat variety Emu-Rock had the least degree of lodging in this trial. Wheat varieties Corak, Wedgetail, DS Pascal and Lancer also stood up reasonably well in this trial with lodging scores less than 5.

Grain Yield:

The hail storm in November impacted on yields by around 30%.

The average grain yield for Hillston was 5.51 t/ha. Yields in this trial ranged from 3.71 t/ha, for the barley variety Scope, up to 7.92 t/ha for the durum wheat variety 280913, as shown in figure 5.

Other varieties to perform well in this trial were Cobra yielding 7.0 t/ha, LPB09-0358 yielding 6.79 t/ha, Gazelle yielding 6.73 t/ha and Merinda yielding 6.72 t/ha.

The barley varieties again generally performed poorly at this site, partially due to the high degree of lodging, with Commander yielding 4.07 t/ha, Buloke yielding 3.89 t/ha and Schooner yielding 3.71 t/ha.

Grain Quality:

Grain protein ranged from 11%, for the variety Gazelle up to 16.4% for the variety Schooner. The average grain protein for this site was 13.53%

Figure 2: Lodging at Hillston , taken early October and again at Harvest



Figure 3: Hillston irrigated site harvest lodging scores, (0 = no lodging, 9 = totally lodged).

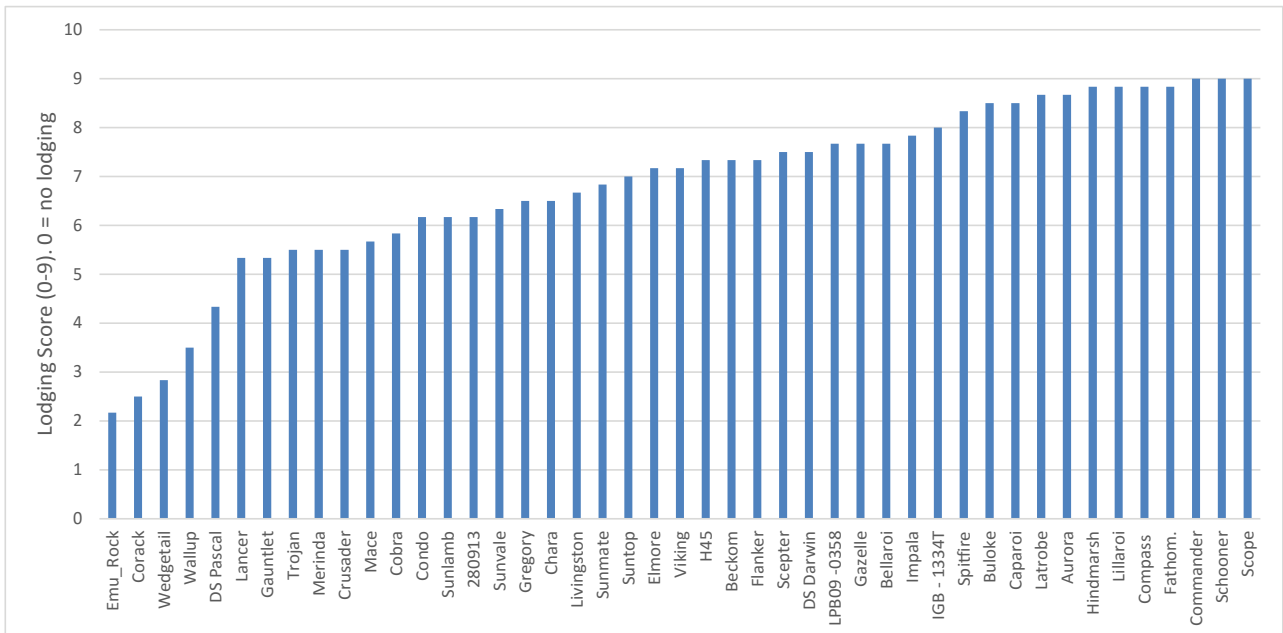
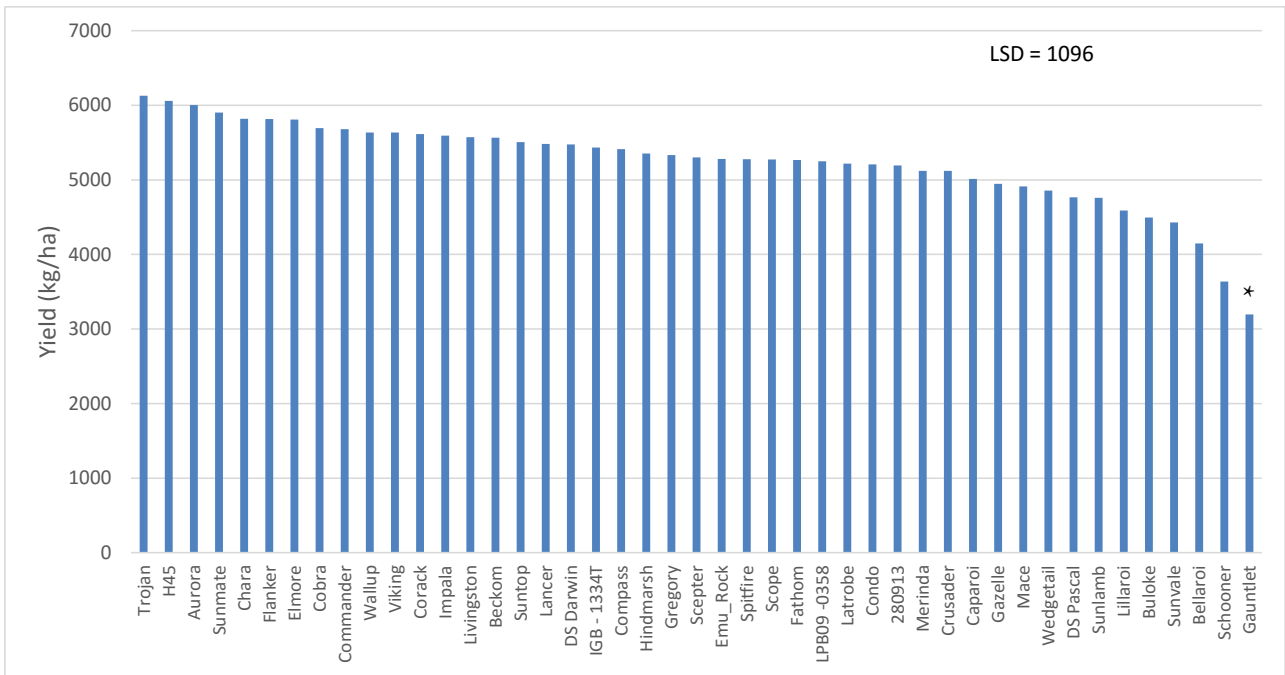
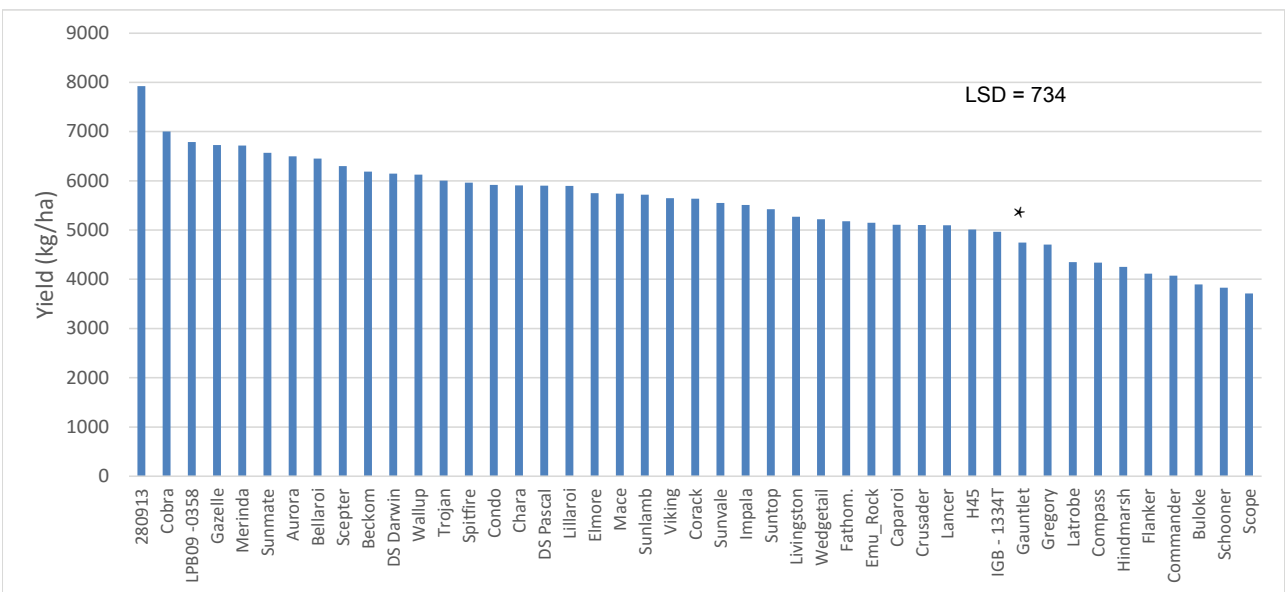


Figure 4: Rankins Springs dryland Yield Data (LSD 1096 kg/ha)



* The Gauntlet seed used in this trial had germination issues, impacting on final yield.

Figure 5: Hillston irrigated site Yield Data (LSD 734 kg/ha)



* The Gauntlet seed used in this trial had germination issues, impacting on final yield.



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