



AgGrow

AGRONOMY + RESEARCH



WHEAT & BARLEY IRRIGATED AND DRYLAND VARIETY TRIALS Hillston & Rankins Springs, 2014

INDEPENDENT AGRONOMY ADVICE + CUTTING EDGE RESEARCH

HART BROS SEEDS VARIETY TRIALS

KEY POINTS

- *These variety trials compliment NVT data, and allow growers in the region to evaluate various varieties under more specific growing conditions attributed to their local environment.
- * Key performance measures specific to this region are acid soil tolerance for dryland, and lodging tolerance for irrigation.
- * Barley generally performed better on dryland, but poorly due to lodging on irrigation.
- * Recently released varieties are offering noticeable increases in yield, and much better tolerance to lodging.

BACKGROUND

There are a number of new wheat and barley varieties which have been developed, with some already on the market.

Growers in the area are yet to see how many of these new varieties perform under local conditions. Growers would like to see these varieties trialled in the local region to see if they offer any advantages over current commercially grown varieties, in terms of yield and quality.

Attributes of interest are acid soil tolerance on dryland, and lodging tolerance on irrigation.

TRIAL DETAILS

An irrigated trial was established at Graeme Horneman's, Hillston sown on 15th May and a dryland trial was established at Michael Pfitzner's, in the Rankins Springs area sown on 22nd May, in conjunction 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.

The varieties chosen for the trials consisted of a

combination of numbered lines, new varieties and current varieties, all of which are of interest or may be suited to be grown in the region.

The irrigated trial at Hillston consisted of 45 varieties and the dryland trial at Rankins Springs consisted of 42 varieties. A list of the varieties used in the trials is shown in table 1.

Both trials were replicated 3 times and had plot sizes of 12m by 1.75m.

Rankins Springs Trial:

The Rankins Springs trial was sown at 30 kg/ha with 60 kg/ha MAP. It also received 60 kg Urea in July, and 2 fungicide applications the first in July and the second in September. The growing season rainfall was 236.1mm. It was harvested on 19th November.

Hillston Trial:

The trial at Hillston was sown at 100 kg/ha and had 150 kg/ha MAP applied at sowing. It was topdressed in August with 300 kg Urea.

Two spring irrigations (3ML/ha) were applied in August and September as were 2 timely fungicides in August (by plane) and October. It was harvested on 28th November.



Table 1: Variety list for the irrigated and dryland trials (note the dryland trial had only 42 varieties)

Figure 1: Variety Trial at Hillston, September 2014

VARIETY		
1	Corack	16 Viking
2	Elmore	17 Gregory
3	Mace	18 Dart
4	Mitch	19 Emu_Rock
5	V6008-14	20 HRZ03.0056
6	Sunmate	21 HRZ04.0421
7	Suntop	22 Gascoine
8	Condo	23 Merinda
9	Wallup	24 Gauntlet
10	Livingston	25 Wedgetail
11	Lancer	26 Sunvale
12	Impala	27 Drysdale
13	Trojan	28 Chara
14	Gazelle	29 H45
15	Spitfire	30 Crusader
		31 Bellaroi
		32 Yenda
		33 Compass
		34 Fathom.
		35 Hindmarsh
		36 Latrobe
		37 Buloke
		38 Schooner
		39 Scope
		40 Fairview
		41 Commander
		42 LPB10-0018
		43 Caparoi
		44 Yawa
		45 Saintly



RESULTS AND DISCUSSION

Statistical analysis was carried out on these trials for grain yield. Significant differences were found between varieties for grain yield at both the Rankins Springs and Hillston sites.

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

It is important to remember that the results represented below for these trials are for one season only.

Rankins Springs

Yields in this trial ranged from 2.62 t/ha, for the durum wheat variety Bellaroi, up to 4.03 t/ha for the barley variety Compass. This is shown in figure 2.

The average grain yield for this trial was 3.38 t/ha. Barley varieties generally out yielded wheat varieties in this trial, with the barley varieties Scope, Buloke, Fathom, Fairview, LaTrobe and Commander all yielding over 3.5 t/ha.

Grain protein ranged from 9.7%, for the soft wheat variety Gazelle, up to 12.3% for the APH variety

Lancer. This is shown in figure 6. The average grain protein for this site was 10.86%.

Hillston

Yields in this trial ranged from 6.02 t/ha, for the barley variety Schooner, up to 11.4 t/ha for the APH wheat variety Lancer, as shown in figure 3. The average grain yield for Hillston was 8.94 t/ha.

Unlike the dryland site, barley varieties generally performed poorly under irrigation due to the high degree of lodging at this site, as shown in figure 4.

As mentioned above, the highest yielding variety in this trial was the wheat variety Lancer, which also displayed great standability.

Grain protein at this site ranged from 11.4%, for the APH variety Suntop, up to 16% for the barley variety Schooner. The average grain protein for the site was 13.0%.

Figure 2: Rankins Springs dryland Yield Data (LSD 574 kg/ha)

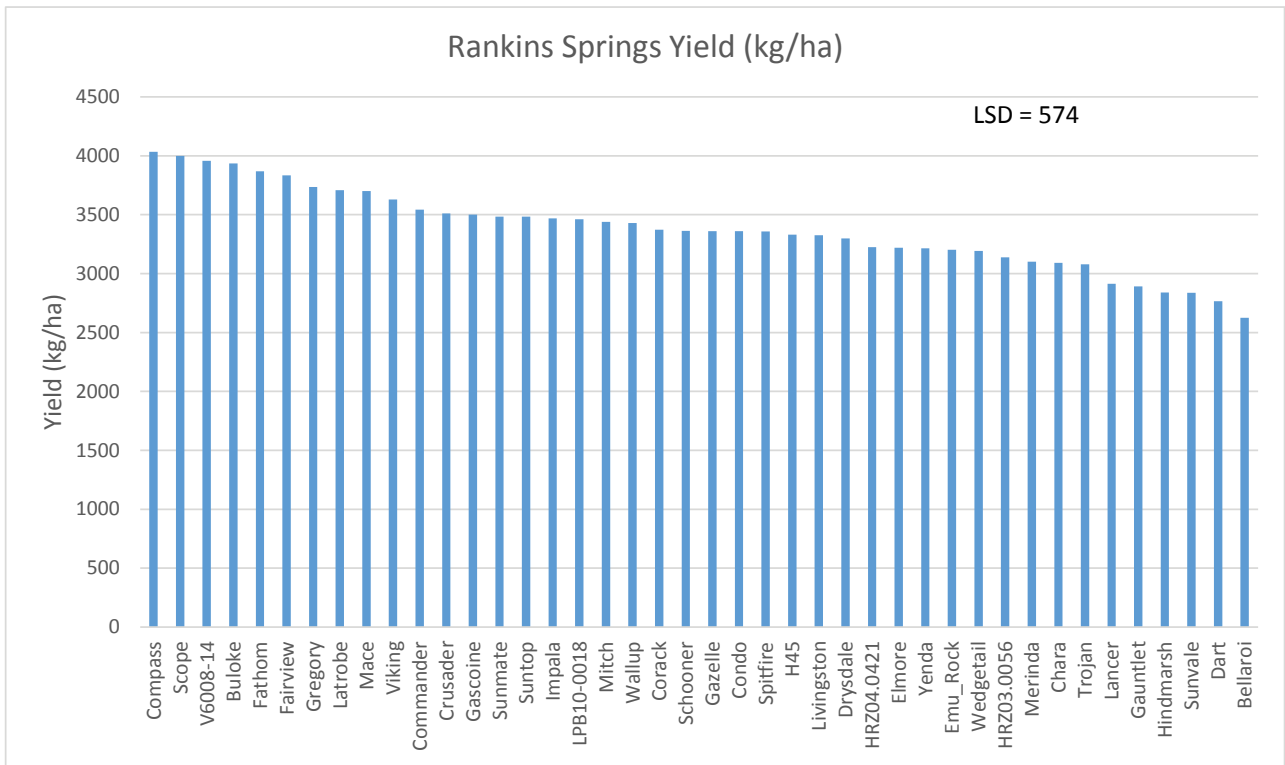
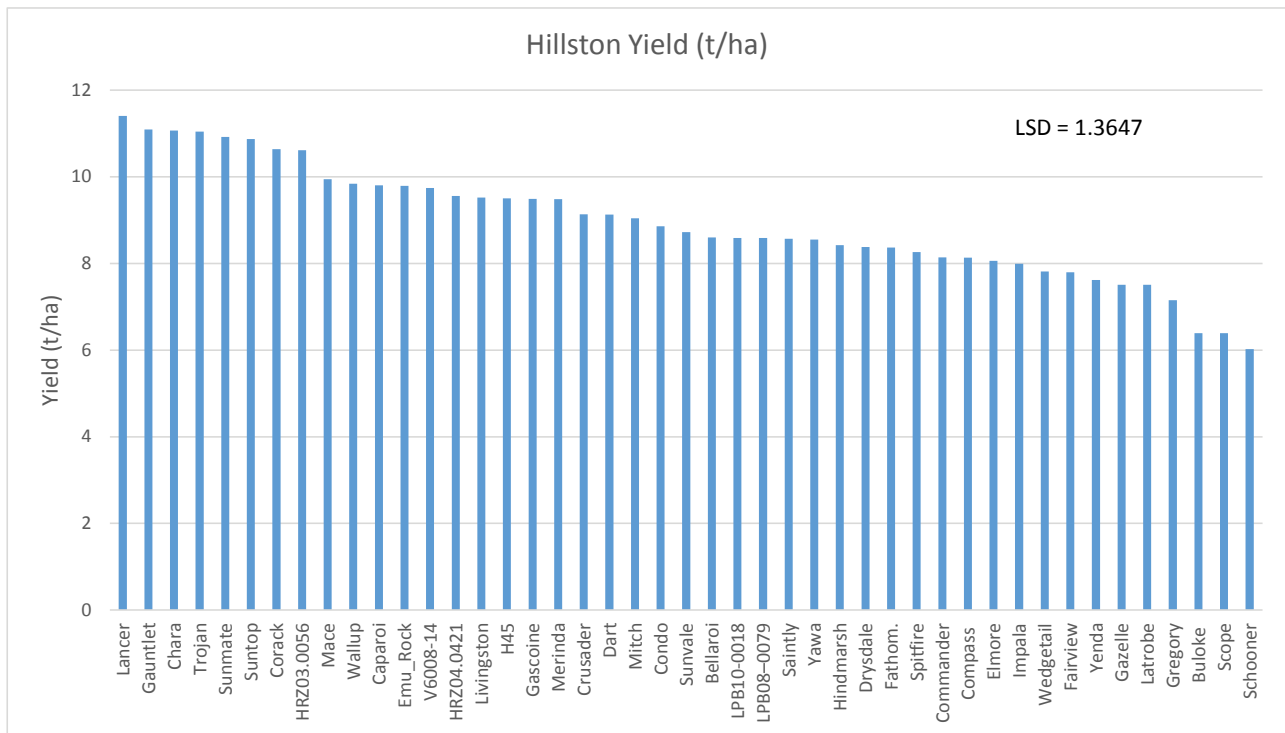


Figure 3: Hillston irrigated site Yield Data (LSD 1.3647 t/ha)



Lodging scores

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

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 4.

Figure 4: Hillston irrigated site lodging scores, (0 = no lodging, 9 = totally lodged).

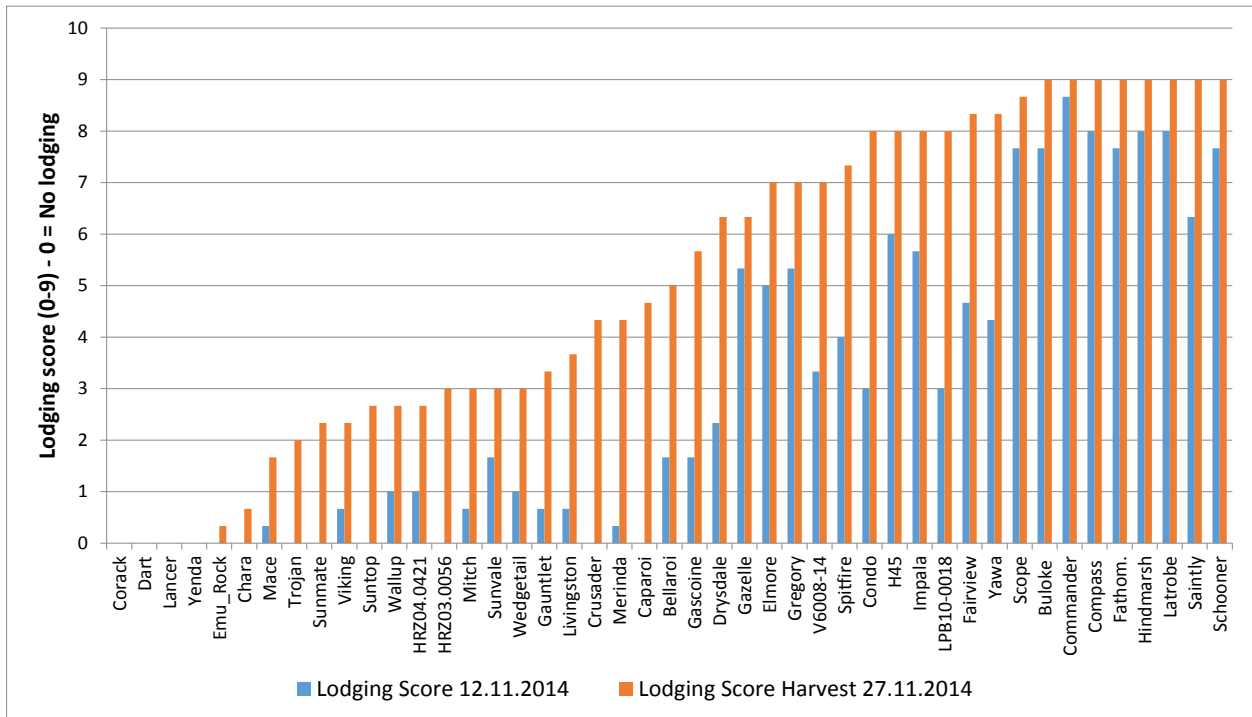
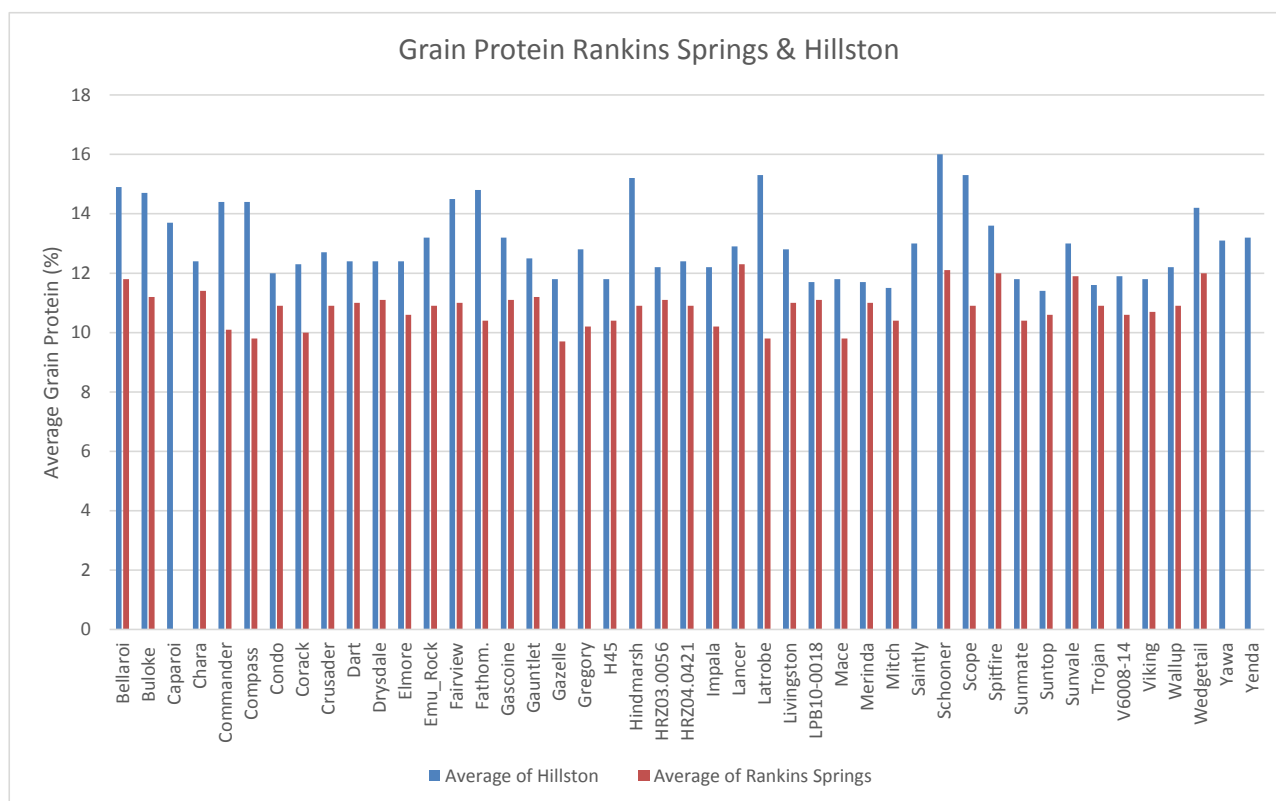


Figure 5: Hillston irrigated site in late September. Trial is in top left corner. You can see lodged barley.



Figure 6: Rankins Springs dryland and Hillston irrigated Grain Protein



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