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Innovations**

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WA CROP  
TECHNOLOGY  
CENTRE (ESPERANCE)

## INDUSTRY INNOVATIONS 2025: PROVISIONAL HARVEST RESULTS – Late May Sown Wheat

2025 WA Esperance Crop Technology Centre (HRZ Neridup)

**WA Wheat HRZ (FAR WAE II W25-50-02)**

**Sown:** 30 May 2025

**Harvested:** 11 December 2025

**Soil Type:** Shallow Sandy Duplex

**Previous Crop:** 2024 Canola

**FAR Code:** FAR WAE II W25-50-02

**GSR (Apr-Oct):** 442mm

*The Germplasm Evaluation Network (GEN) is a FAR Australia 'Industry Innovations' initiative that tests crop variety performance across FAR Australia's national network of Crop Technology Centres. GEN sites test variety performance with and without fungicide. FAR Australia provides the control varieties and breeders enter their chosen lines for evaluation.*

### Key Points:

- Grain yield was significantly influenced by variety ( $p < 0.001$ ) and fungicide application ( $p=0.026$ ), with mean yields varying from 3.69 to 5.47 t/ha across the trial.
- LRPB Vortex recorded the highest mean yield (5.47t/ha), followed by IGW Dale (5.34 t/ha) and RGT Marsh (5.19t/ha) all of which are mid maturing spring wheats.
- The winter wheat RGT Enebro which flowered very late produced the lowest yield (3.69 t/ha).
- Fungicide application in this later sowing, for the first time in Esperance GEN resulted in a statistically significant increases in grain yield across varieties ( $p= 0.026$ ), with fungicide response ranging from 8 – 24% illustrating all varieties responded to fungicide.
- Wheat Powdery mildew (WPM) infected this later sowing with Genie being the most susceptible with a plot infection of 6.1% in the untreated compared to 1.9% in the treated plots.
- Varieties Scepter, Rockstar, RGT Marsh, LRPB Vortex, and IGW Murray showed low to moderate infection, while Matador, AGT Hamelin, AGT Rio, RGT Ponsford, RGT Enebro, HI7Q3x0150SCIO-076D, IGW Dale, IGW6955, and Brumby maintained negligible or zero infection, indicating stronger resistance to WPM.
- Average grain protein was marginally reduced by fungicide application, decreasing from 10.2% in untreated plots to 9.8% in treated plots, presumably because of yield dilution.
- Significant differences in protein concentration were observed among varieties ( $p < 0.001$ ), with mean values ranging from 9.4% in IGW Dale and 9.6% in LRPB Vortex and AGT Rio to 10.6% in RGT Enebro. Overall protein content was low suggesting below optimum levels of nitrogen available.

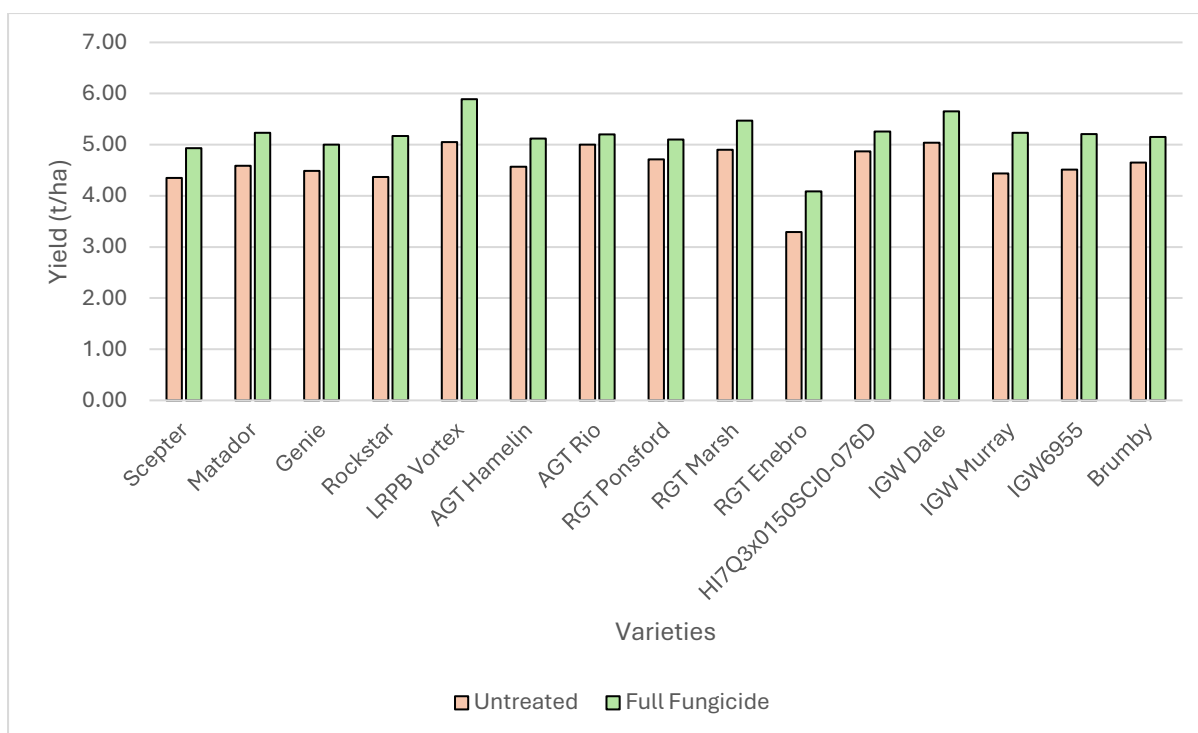
- Fungicide application resulted in a significant ( $p=0.039$ ) increase in test weight, with mean values rising from 75.3 kg/hL in untreated plots to 77.1 kg/hL in treated plots.
- Test weight differed significantly among varieties ( $p < 0.001$ ), ranging from 71.2 kg/hL in RGT Enebro to 78.9 kg/hL in AGT Hamelin, which achieved the highest test weights.

### Yield (t/ha) & quality data (% protein, test weight, % screenings) – Tables 1 -3

**Table 1.** Influence of fungicide application on the grain yield (t/ha) of winter and spring wheat (varieties grown plus and minus fungicide) – May 30 sown.

| Variety                       | Management Level |   |                |   |            |
|-------------------------------|------------------|---|----------------|---|------------|
|                               | Untreated        |   | Plus fungicide |   | Mean       |
|                               | Yield t/ha       |   | Yield t/ha     |   | Yield t/ha |
| Scepter (s)                   | 4.35             | - | 4.93           | - | 4.64 f     |
| Matador (s)                   | 4.59             | - | 5.23           | - | 4.91 c-f   |
| Genie (s)                     | 4.49             | - | 5.00           | - | 4.74 ef    |
| Rockstar (s)                  | 4.37             | - | 5.17           | - | 4.77 ef    |
| LRPB Vortex (s)               | 5.05             | - | 5.89           | - | 5.47 a     |
| AGT Hamelin (s)               | 4.57             | - | 5.12           | - | 4.84 def   |
| AGT Rio (s)                   | 5.00             | - | 5.20           | - | 5.10 bcd   |
| RGT Ponsford (s)              | 4.71             | - | 5.10           | - | 4.90 c-f   |
| RGT Marsh (s)                 | 4.90             | - | 5.47           | - | 5.19 abc   |
| RGT Enebro (w)                | 3.29             | - | 4.09           | - | 3.69 g     |
| HI7Q3x0150SCI0-076D (s)       | 4.87             | - | 5.26           | - | 5.06 b-e   |
| IGW Dale (s)                  | 5.04             | - | 5.65           | - | 5.34 ab    |
| IGW Murray (s)                | 4.44             | - | 5.23           | - | 4.83 def   |
| IGW6955 (s)                   | 4.51             | - | 5.21           | - | 4.86 def   |
| Brumby (s)                    | 4.65             | - | 5.15           | - | 4.90 c-f   |
| Mean                          | 4.59             | b | 5.18           | a | 4.88       |
| LSD Variety $p = 0.05$        | 0.3              |   | P val          |   | <0.001     |
| LSD Management $p = 0.05$     | 0.5              |   | P val          |   | <0.026     |
| LSD Variety x Man. $p = 0.05$ | ns               |   | P val          |   | 0.828      |

W = winter wheat, S = spring wheat



**Figure 1.** Influence of variety and fungicide on grain yield (t/ha – May 30 sown

**Table 2.** Influence of variety and fungicide on the grain protein (%) and test weights (kg/hL) – December 11 harvest.

| Management Level     |              |     |                |       |           |     |                   |   |                   |       |                   |     |
|----------------------|--------------|-----|----------------|-------|-----------|-----|-------------------|---|-------------------|-------|-------------------|-----|
| Variety              | Untreated    |     | Plus fungicide |       | Mean      |     | Untreated         |   | Plus fungicide    |       | Mean              |     |
|                      | Protein %    |     | Protein %      |       | Protein % |     | Test weight kg/hL |   | Test weight kg/hL |       | Test weight kg/hL |     |
| Scepter              | 10.6         | b   | 9.9            | d-j   | 10.3      | abc | 74.5              | - | 76.9              | -     | 75.7              | def |
| Matador              | 10.3         | bcd | 10.3           | bcd   | 10.3      | ab  | 74.4              | - | 75.9              | -     | 75.2              | ef  |
| Genie                | 10.2         | b-f | 9.9            | d-k   | 10.1      | b-e | 76.0              | - | 78.0              | -     | 77.0              | bcd |
| Rockstar             | 10.4         | bc  | 9.7            | g-l   | 10.1      | b-e | 74.2              | - | 77.8              | -     | 76.0              | c-f |
| LRPB Vortex          | 9.7          | h-l | 9.6            | i-l   | 9.6       | fg  | 76.6              | - | 77.7              | -     | 77.2              | bcd |
| AGT Hamelin          | 10.1         | c-h | 10.1           | c-h   | 10.1      | b-e | 78.4              | - | 79.5              | -     | 78.9              | a   |
| AGT Rio              | 9.7          | h-l | 9.6            | i-l   | 9.6       | fg  | 77.4              | - | 78.6              | -     | 78.0              | ab  |
| RGT Ponsford         | 10.2         | b-e | 10.0           | c-j   | 10.1      | bcd | 74.9              | - | 77.1              | -     | 76.0              | c-f |
| RGT Marsh            | 10.1         | c-h | 9.6            | i-l   | 9.8       | def | 77.0              | - | 78.0              | -     | 77.5              | abc |
| RGT Enebro           | 11.2         | a   | 10.0           | c-j   | 10.6      | a   | 69.5              | - | 72.9              | -     | 71.2              | g   |
| HI7Q3x0150SC I0-076D | 10.1         | c-g | 9.8            | e-k   | 10.0      | cde | 75.8              | - | 77.5              | -     | 76.6              | b-e |
| IGW Dale             | 9.5          | kl  | 9.3            | l     | 9.4       | g   | 77.3              | - | 78.9              | -     | 78.1              | ab  |
| IGW Murray           | 10.3         | bcd | 9.7            | g-l   | 10.0      | b-e | 75.0              | - | 75.9              | -     | 75.4              | def |
| IGW6955              | 10.0         | c-i | 9.5            | jkl   | 9.8       | ef  | 73.4              | - | 75.3              | -     | 74.3              | f   |
| Brumby               | 10.3         | bcd | 9.8            | f-l   | 10.0      | b-e | 74.9              | - | 77.1              | -     | 76.0              | c-f |
| Mean                 | 10.2         | a   | 9.8            | b     | 10.0      |     | 75.3              | b | 77.1              | a     | 76.2              |     |
| Variety              | LSD p = 0.05 |     | 0.3            | P val | <0.001    |     | LSD p = 0.05      |   | 1.7               | P val | <0.001            |     |
| Management           | LSD p = 0.05 |     | 0.2            | P val | <0.01     |     | LSD p = 0.05      |   | 1.7               | P val | 0.039             |     |
| Var. x Man.          | LSD p = 0.05 |     | 0.5            | P val | 0.038     |     | LSD p = 0.05      |   | ns                | P val | 0.958             |     |

**Table 3.** Influence of variety and fungicide on the screenings (% < 2.0 mm) – December 11 harvest.

| Management Level            |              |   |                |   |              |
|-----------------------------|--------------|---|----------------|---|--------------|
| Variety                     | Untreated    |   | Plus fungicide |   | Mean         |
|                             | Screenings % |   | Screenings %   |   | Screenings % |
| Scepter                     | 2.0          | - | 1.3            | - | 1.6 d        |
| Matador                     | 3.0          | - | 2.8            | - | 2.9 b        |
| Genie                       | 8.7          | - | 6.6            | - | 7.7 a        |
| Rockstar                    | 2.7          | - | 1.9            | - | 2.3 bcd      |
| LRPB Vortex                 | 1.8          | - | 1.6            | - | 1.7 d        |
| AGT Hamelin                 | 1.9          | - | 1.4            | - | 1.7 d        |
| AGT Rio                     | 1.7          | - | 1.5            | - | 1.6 d        |
| RGT Ponsford                | 1.5          | - | 1.1            | - | 1.3 d        |
| RGT Marsh                   | 1.4          | - | 1.0            | - | 1.2 d        |
| RGT Enebro                  | 3.4          | - | 2.2            | - | 2.8 bc       |
| HI7Q3x0150SCI0-076D         | 2.6          | - | 1.8            | - | 2.2 bcd      |
| IGW Dale                    | 1.3          | - | 1.3            | - | 1.3 d        |
| IGW Murray                  | 2.3          | - | 2.2            | - | 2.3 bcd      |
| IGW6955                     | 2.2          | - | 1.9            | - | 2.0 bcd      |
| Brumby                      | 2.0          | - | 1.4            | - | 1.7 cd       |
| Mean                        | 2.6          | - | 2.0            | - | 2.3          |
| LSD Variety p = 0.05        | 1.1          |   | P val          |   | <0.001       |
| LSD Management p = 0.05     | ns           |   | P val          |   | 0.063        |
| LSD Variety x Man. p = 0.05 | ns           |   | P val          |   | 0.956        |

**Table 4.** Influence of variety on the Wheat Powdery Mildew (WPM) infection - assessed 18 Sept

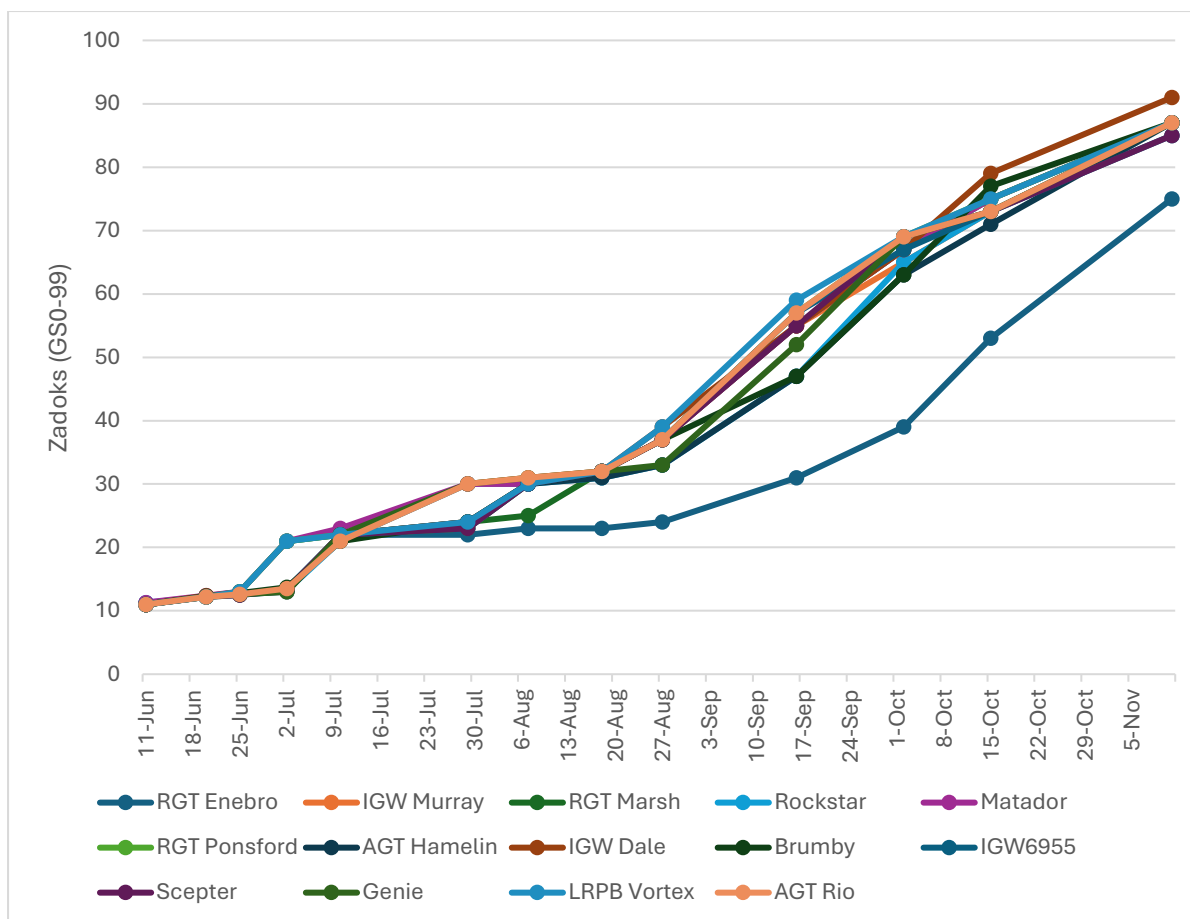
| Wheat Powdery Mildew plot infection % |                     |           |   |                |   |        |     |
|---------------------------------------|---------------------|-----------|---|----------------|---|--------|-----|
| Variety                               |                     | Untreated |   | Plus fungicide |   | Mean   |     |
| 1                                     | Scepter             | 1.6       | - | 0.1            | - | 0.8    | bcd |
| 2                                     | Matador             | 0.0       | - | 0.0            | - | 0.0    | e   |
| 3                                     | Genie               | 2.6       | - | 1.7            | - | 2.2    | a   |
| 4                                     | Rockstar            | 1.4       | - | 0.7            | - | 1.1    | b   |
| 5                                     | LRPB Vortex         | 0.4       | - | 0.1            | - | 0.3    | cde |
| 6                                     | AGT Hamelin         | 0.0       | - | 0.0            | - | 0.0    | e   |
| 7                                     | AGT Rio             | 0.0       | - | 0.0            | - | 0.0    | e   |
| 8                                     | RGT Ponsford        | 0.0       | - | 0.0            | - | 0.0    | e   |
| 9                                     | RGT Marsh           | 1.4       | - | 0.5            | - | 0.9    | bc  |
| 10                                    | RGT Enebro          | 0.0       | - | 0.0            | - | 0.0    | e   |
| 11                                    | HI7Q3x0150SCI0-076D | 0.1       | - | 0.0            | - | 0.1    | e   |
| 12                                    | IGW Dale            | 0.4       | - | 0.1            | - | 0.2    | cde |
| 13                                    | IGW Murray          | 0.1       | - | 0.3            | - | 0.2    | de  |
| 14                                    | IGW6955             | 0.4       | - | 0.1            | - | 0.3    | cde |
| 15                                    | Brumby              | 0.0       | - | 0.0            | - | 0.0    | e   |
| Mean                                  |                     | 0.6       | - | 0.2            | - | 0.4    |     |
| LSD Variety p = 0.05                  |                     | 0.7       |   | P value        |   | <0.001 |     |
| LSD Management p = 0.05               |                     | ns        |   | P value        |   | 0.068  |     |
| LSD Variety x Man. p = 0.05           |                     | ns        |   | P value        |   | 0.613  |     |

**Table 5.** Influence of variety on the Wheat Powdery Mildew (WPM) infection - assessed 7 October.

| Wheat Powdery Mildew plot infection % |                     |           |     |                |     |        |     |
|---------------------------------------|---------------------|-----------|-----|----------------|-----|--------|-----|
| Variety                               |                     | Untreated |     | Plus fungicide |     | Mean   |     |
| 1                                     | Scepter             | 1.6       | cde | 0.3            | cde | 0.9    | bcd |
| 2                                     | Matador             | 0.0       | e   | 0.0            | e   | 0.0    | d   |
| 3                                     | Genie               | 6.1       | a   | 1.7            | b-e | 3.9    | a   |
| 4                                     | Rockstar            | 3.4       | b   | 0.5            | cde | 1.9    | b   |
| 5                                     | LRPB Vortex         | 2.0       | bc  | 1.3            | cde | 1.6    | bc  |
| 6                                     | AGT Hamelin         | 0.4       | cde | 0.0            | e   | 0.2    | d   |
| 7                                     | AGT Rio             | 0.3       | cde | 0.0            | e   | 0.2    | d   |
| 8                                     | RGT Ponsford        | 0.1       | de  | 0.0            | e   | 0.1    | d   |
| 9                                     | RGT Marsh           | 1.6       | b-e | 0.4            | cde | 1.0    | bcd |
| 10                                    | RGT Enebro          | 0.1       | de  | 0.0            | e   | 0.1    | d   |
| 11                                    | HI7Q3x0150SCI0-076D | 0.4       | cde | 0.1            | e   | 0.2    | d   |
| 12                                    | IGW Dale            | 0.3       | cde | 0.3            | cde | 0.3    | d   |
| 13                                    | IGW Murray          | 1.9       | bcd | 0.3            | cde | 1.1    | bcd |
| 14                                    | IGW6955             | 0.8       | cde | 0.4            | cde | 0.6    | cd  |
| 15                                    | Brumby              | 0.1       | e   | 0.3            | cde | 0.2    | d   |
| Mean                                  |                     | 1.3       | -   | 0.4            | -   | 0.8    |     |
| LSD Variety p = 0.05                  |                     | 1.3       |     | P value        |     | <0.001 |     |
| LSD Management p = 0.05               |                     | ns        |     | P value        |     | 0.069  |     |
| LSD Variety x Man. p = 0.05           |                     | 1.8       |     | P value        |     | 0.031  |     |

**Table 6.** Influence of variety on mean variety Normalised Difference Vegetation Index (NDVI, 0-1).

| NDVI (0-1)                        |                     |         |     |           |     |            |     |
|-----------------------------------|---------------------|---------|-----|-----------|-----|------------|-----|
| Variety                           |                     | 29-July |     | 2-October |     | 27-October |     |
| 1                                 | Scepter             | 0.60    | a-e | 0.60      | a-e | 0.26       | d-h |
| 2                                 | Matador             | 0.57    | e   | 0.60      | a-d | 0.25       | e-i |
| 3                                 | Genie               | 0.58    | cde | 0.61      | abc | 0.29       | bc  |
| 4                                 | Rockstar            | 0.61    | abc | 0.58      | de  | 0.27       | b-e |
| 5                                 | LRPB Vortex         | 0.63    | a   | 0.61      | abc | 0.24       | ghi |
| 6                                 | AGT Hamelin         | 0.58    | cde | 0.59      | b-e | 0.29       | bcd |
| 7                                 | AGT Rio             | 0.62    | ab  | 0.58      | de  | 0.29       | bc  |
| 8                                 | RGT Ponsford        | 0.62    | ab  | 0.61      | abc | 0.26       | c-g |
| 9                                 | RGT Marsh           | 0.59    | b-e | 0.61      | ab  | 0.24       | hi  |
| 10                                | RGT Enebro          | 0.49    | f   | 0.62      | a   | 0.46       | a   |
| 11                                | HI7Q3x0150SCI0-076D | 0.59    | b-e | 0.57      | e   | 0.23       | i   |
| 12                                | IGW Dale            | 0.58    | de  | 0.59      | a-e | 0.27       | b-f |
| 13                                | IGW Murray          | 0.61    | a-d | 0.58      | cde | 0.25       | e-i |
| 14                                | IGW6955             | 0.60    | a-e | 0.59      | b-e | 0.25       | f-i |
| 15                                | Brumby              | 0.60    | a-e | 0.62      | a   | 0.30       | b   |
| Mean                              |                     | 0.59    |     | 0.60      |     | 0.28       |     |
| LSD Variety p = 0.05 (29-July)    |                     | 0.03    |     | P value   |     | <0.001     |     |
| LSD Variety p = 0.05 (2-October)  |                     | 0.03    |     | P value   |     | 0.006      |     |
| LSD Variety p = 0.05 (27-October) |                     | 0.03    |     | P value   |     | <0.001     |     |



**Figure 2.** Influence of Variety on phenology (Zadoks 0-99)

### Trial Inputs

**Table 7.** Trial Input and Management Details.

|                           |         |                                                         |
|---------------------------|---------|---------------------------------------------------------|
| <b>Sowing Date:</b>       |         | <b>30 May 2025</b>                                      |
| <b>Harvest Date:</b>      |         | <b>11 December 2025</b>                                 |
| <b>Seed Rate:</b>         |         | 200 seeds/m <sup>2</sup>                                |
| <b>Basal Fertiliser:</b>  | 30 May  | 80 kg/ha Agflow Manganese (14.4kg P/ha and 8.48kg N/ha) |
| <b>Pre-Em Herbicide:</b>  | 29 May  | Mateno Complete 0.75 L/ha                               |
| <b>Post-Em Herbicide:</b> | 11 July | Velocity 1L/ha<br>Uptake Oil 0.5%v/v                    |
| <b>Insecticide</b>        | 29 May  | Trojan 0.01 L/ha                                        |
| <b>Nitrogen:</b>          | 3 Jul   | 170kg/ha Urea (78.2kg N/ha)                             |
|                           | 23 Jul  | 76 kg/ha Urea (35 kg N/ha)                              |
| <b>Fungicide:</b>         |         | <b>Untreated</b> <b>Fungicide Protection</b>            |
|                           | GS31    | ----      Prosaro 0.30 L/ha                             |
|                           | GS45    | ----      Elatus Ace 0.50L/ha                           |