Mains of Loirston Winter Wheat Challenge
Update from Bush, Edinburgh– 19th July

Scott Murray
Introduction

• The drone photograph opposite was taken on 12 July. Differences between the various varieties can be clearly seen.

• The plots were all at the grain watery ripe stage of growth (GS71)
Disease

- There is some variation in the amount of disease present in different plots. This is to be expected, given the range in fungicide programmes used (and variety choices).
- There is less evidence of yellow rust at Bush as compared to the Aberdeen site.
- Fungicide applications are now complete. It is now a matter of hoping that disease pressure stays low until the plots are past the susceptible stage.
Green Leaf Analysis

- All plots have been scanned with the Greenseeker device, to assess the amount of green leaf present. It is hoped to compare this with data from the drone flight.

- The Greenseeker will be used next season to help teams become more familiar with new technology and in particular to assess the amount of nitrogen fertiliser to apply in the spring.
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<tr>
<th>Team</th>
<th>Variety</th>
<th>Seed rate Seeds/m² or kg/ha*</th>
<th>Phosphorus (P) (kg/ha) and Potassium (K) (kg/ha)</th>
<th>Herbicide Picona (l/ha) at pre and post* emergence</th>
<th>Nitrogen (kg/ha)</th>
<th>Growth Regulator (Product l/ha)</th>
<th>Fungicide (Product l/ha)</th>
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*Note: For teams B, D, G, H, J, K, and P, the values are marked with an asterisk (*).
External Judging – 5 May 2016

• We were lucky to have a visit from Gavin Dick, Knowledge Exchange Manager for Scotland, AHDB Cereals in early May. Gavin was asked to offer his opinion on some of the teams’ choices of inputs and on the overall appearance of the plots.

• Some of the following slides include Gavin’s comments.
Judge’s Comments

- Gavin wanted to see teams matching fertiliser (P & K) to crop offtake (although acknowledged that at this site (not necessarily at the other sites) soil levels of P & K were good and this could be taken advantage of in the short term.
Judge’s Comments

- Early season disease control/protection is important to prevent diseases such as septoria and yellow rust from becoming established.

Nitrogen input should be based on the break-even ratio calculation (see SRUC Technical Note)
Team A

- Revelation.
- Total Nitrogen is on the low side at 120 kg/ha (but site is quite fertile, so will need to see how much N is scavenged from soil supplies)
- Crop was very clean in July, reflecting 3 spray fungicide programme
Team B

• Revelation
• Crop received 180kgN/ha.
• Low levels of disease on upper leaves so far (3 spray fungicide programme)
Team C

- Revelation
- High rate of nitrogen (220kg/ha), with some growth regulator applied.
- 3 spray fungicide programme including SDHI product, resulting in a very clean crop
- Crop is possibly the cleanest at the Bush site.
Team D

- Viscount
- 200kgN/ha
- 3 spray fungicide programme, including SDHI product at T2
- Scored well in Greenseeker green leaf analysis
- Looks promising?
Team E

- Evolution.
- Also received 220kgN/ha but no growth regulator. How will it respond to any lodging pressure towards harvest?
- Crop had quite a lot of disease in it despite a 3 spray programme. Were high enough rates used?
Team F

- Revelation
- This team used a reduced rate of herbicide in the autumn to try and reduce costs. The plots are more weedy than others, but we will need to wait to harvest to see if there has been an effect on yield.
- Gavin favoured this team in May. The crop was still pretty clean in July.
Team G

- Invicta.
- Despite not applying a T3 fungicide, this team’s plots still looked fairly clean in July – the situation may change if there is any rain in the near future.
- Again, a higher rate of nitrogen (212kgN/ha) and no growth regulator.
Team H

• Revelation
• Gavin also liked the way this team’s plots looked in May.
• A relatively low input approach to disease control here, with a lower nitrogen input (170kgN/ha).
• The crop was not very clean in July.
• Will a lower input and potentially lower output approach work?
Team I

- Revelation
- This team have opted for some additional nitrogen later in the season, along with a reasonably robust fungicide programme.
- Higher rates of growth regulator have kept the crop short.
Team J

- Evolution
- This team also decided not to apply an autumn herbicide, hence their plots are weedier than others.
- They also opted not to apply a T3 fungicide.
Team K

• Revelation
• Plots didn’t score so well in the green area analysis
• This was one of the 3 teams who applied a T0 fungicide, but opted not to apply a T3 spray. How will this strategy perform?
Team L

- This team have opted for the milling variety, Cordiale – perhaps looking for a price premium at harvest.
- Although receiving T0 and T1 sprays, no fungicides were applied at T2 or T3 and the crop now has possibly the highest level of disease in the plots at Bush.
Team M

- Revelation
- Another team adding some nitrogen at GS39.
- The team has also applied a 4-spray fungicide programme and the crop is looking quite clean as a result.
Team N

• Viscount

• Some measured decisions on fungicide and growth regulator strategy, using a robust, 3-spray programme.

• The team has adapted its approach from last year’s challenge.
Team O

- Revelation.
- This team have also gone for a higher rate of nitrogen (229kgN/ha).
- A robust, 3-spray fungicide programme, including SDHI products has added to costs. However, the crop looks fairly clean and looks well.
Team P

- Invicta

- This crop has succumbed to yellow rust at the Aberdeen site, but there appears to be less disease pressure at Bush.

- A lack of fungicide at T0 & T1 may have allowed disease to establish earlier in the season, but SDHIs have been used at T2 and T3.

- The crop produced a relatively high green area result.
What next

- We will keep monitoring the plots in case some lodge in due course.
- Plots will be harvested in September when yield will be assessed.
- Samples will then be sent away for quality assessments.
- Winner will be announced at Agriscot.

- For more details:- http://www.sruc.ac.uk/info/120385/winter_wheat_challenge