Maximising genetic potential via an integrated agronomic approach

Barry Barker
National Arable Seed Product Manager
Masstock Arable UK Ltd

Maximising genetic potential via an integrated agronomic approach

• The integrated approach – what does it mean
• Brief examples of the work carried out
  – Identifying varieties for specific situations
  – Using varieties as part of a weed management strategy
  – Varietal variations to Nitrogen application
Varietal characteristics

- Yield
- Regional variations
- Disease resistance
- Grain qualities
- Standing power

Varietal characteristics

- Yield
- Regional variations
- Disease resistance
- Grain qualities
- Standing power

Aerochemicals
Macro factors
Nutrition
“Innovate & Integrate”
- The Masstock Approach to Agronomy Research -

36,000 trial plots are devoted to understanding how these factors interact.

Identifying varieties for specific situations

- National trials are set up to assess varieties across a broad range of conditions and locations
Identifying varieties for specific situations

Very early  
– end August

Very late – mid December

Drilling window for winter wheat  
(Triticum aestivum)
Using varieties to reduce weed populations

Black-grass - *Alopecurus myosuroides*
Using varieties to reduce weed populations

- Atlantis (mesosulfuron + iodosulfuron) introduced in 2003
- By 2009 practically all the main arable areas of the UK had some instances of resistance
Trial 10039 - WW Blackgrass Crop Competition Trial, Stow Longa
Visual % Crop Cover by Variety - March 2010

Visual assessment % Crop Cover

Leaf type:
B = Broad
M = Medium
F = Fine
e = erect
p = prostrate

126 ears difference, actual yields 4.18 t/ha v 5.64 t/ha
## Variety Competitive Ranking vs Grassweeds - 2010 summary -

<table>
<thead>
<tr>
<th>Variety</th>
<th>Competitive index (1 – 4 where 1=least competitive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hereward, Sahara, Kingdom, Panorama</td>
<td></td>
</tr>
<tr>
<td>Claire, Grafton, Solstice, KWS Quartz, Gladiator, Cordiale, Duxford, Ketchum, Xi 19, Alchemy</td>
<td></td>
</tr>
<tr>
<td>Viscount, Humber, Battalion, KWS Sterling, Conqueror, Einstein, KWS Santiago</td>
<td></td>
</tr>
<tr>
<td>Oakley, Gallant, Scout, JB Diego, Invicta, Edmunds, Warrior, Robigus</td>
<td></td>
</tr>
</tbody>
</table>

*Italics* = New varieties so based on limited data  
*Red* = *Not* tolerant to CTU (Kula) or not yet tested

## Varietal variations to Nitrogen applications

- Grain and Fertiliser costs extremely volatile
- When is it likely to provide an economic return to increase Nitrogen rates and when not
- Does it vary according to variety?
Winter Oilseed Rape Nitrogen trial on Throws Farm 2009 (DK Secure, Castille, Excel - Tiptree)

Yield and margin over seed and N costs

MON + SC = Margin over Nitrogen and seed cost

[Masstock Smart Farming Logo]
Summary

• There is a lot more to varieties than yield, disease resistance and grain qualities
• For many growers it is about how will those varieties suit their particular farm and their requirements
• To do that you need look at varieties as part of the strategy to produce a successful and profitable crop
• A private company deeply involved in advising and supplying growers can help maximise the potential of a new variety

“Innovate & Integrate”
- The Masstock Approach to Agronomy Research -
Thank you