Maximising genetic potential via an integrated agronomic approach

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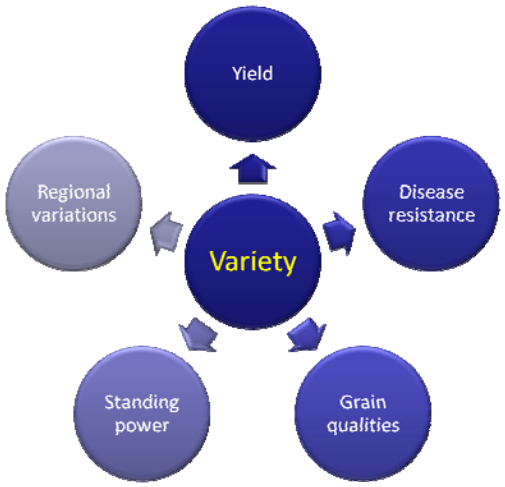
Maximising genetic potential via an integrated agronomic approach

- 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



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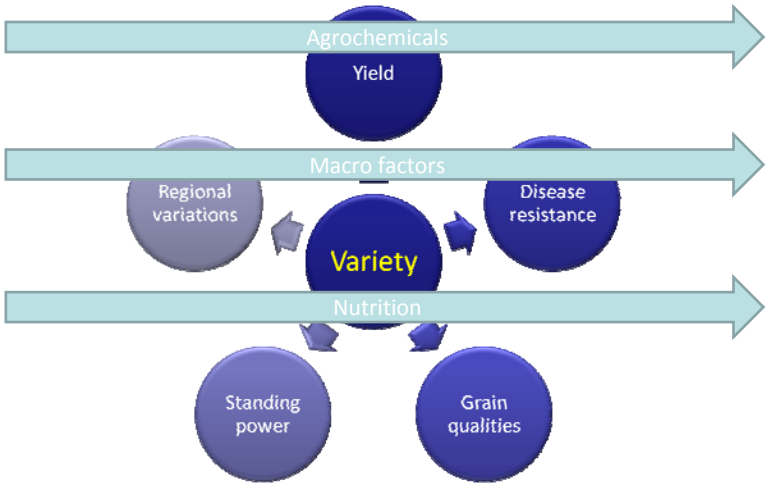

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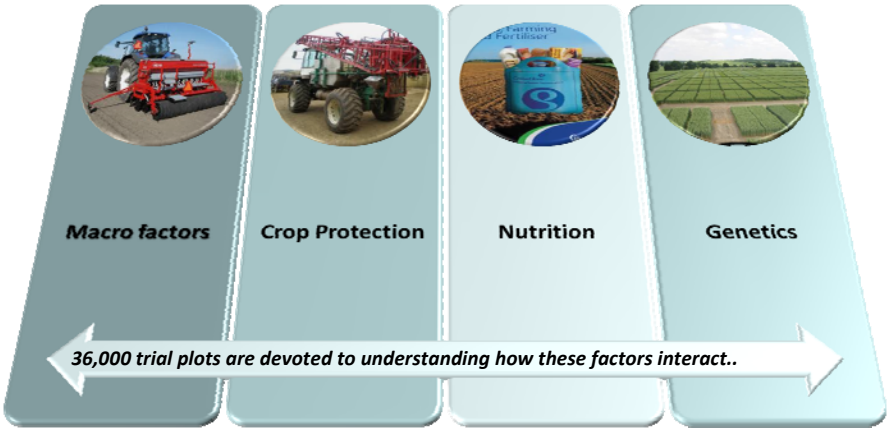
- The Masstock Approach to Agronomy Research -



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)

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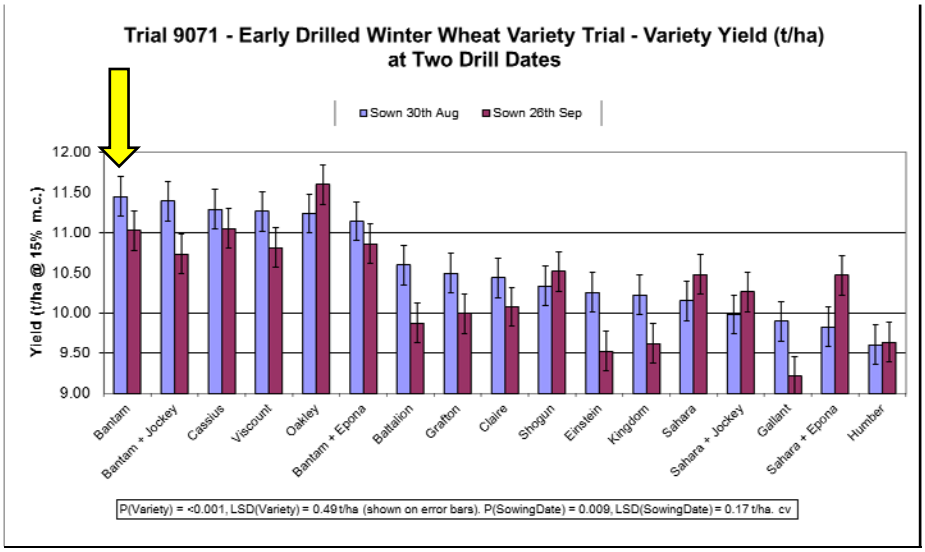

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Using varieties to reduce weed populations

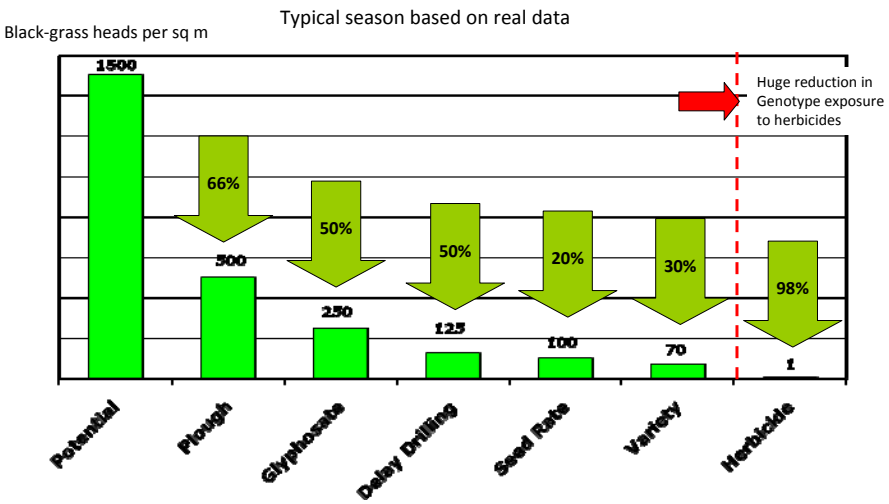
Using varieties to reduce weed populations

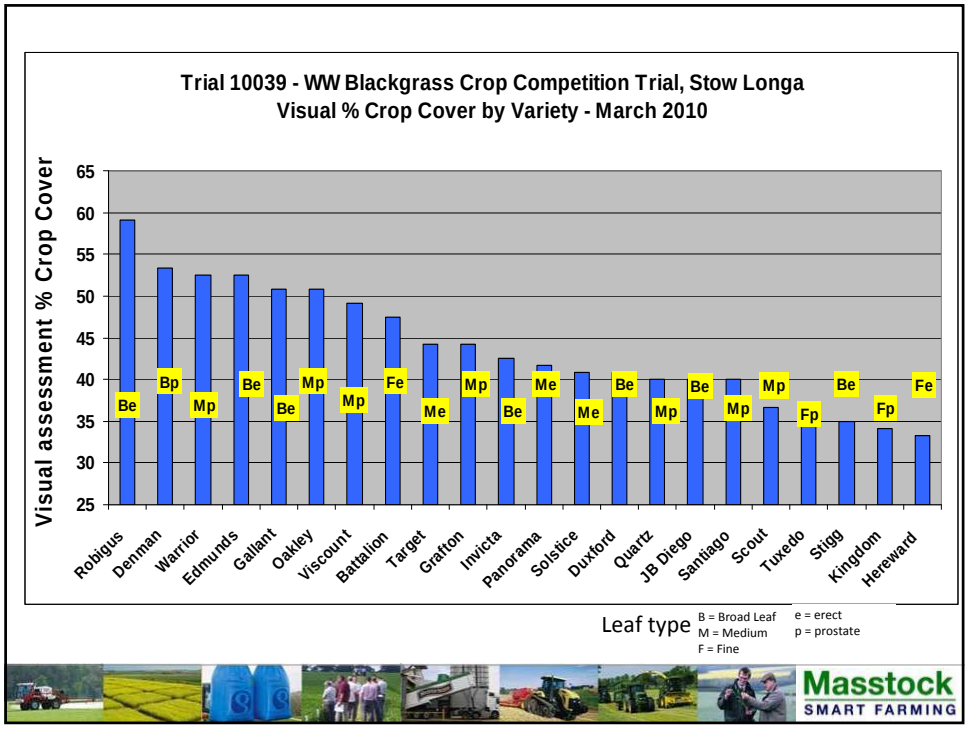
Black-grass - *(Alopecurus myosuroides)*

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

Potential Cumulative Benefit of Cultural Control in Blackgrass




Trial 10039 - WW Blackgrass Crop Competition Trial, Stow Longa
Visual % Crop Cover by Variety - March 2010
Visual assessment % Crop Cover
65
60
55
50
45
40
35
30
25
Be
Bp
Mp
Be
Be
Mp
Mp
Fe
Me
Mp
Be
Me
Me
Be
Mp
Be
Mp
Mp
Fp
Be
Fp
Fe
Robigus
Denman
Warrior
Edmunds
Gallant
Oakley
Viscount
Battalion
Target
Grafton
Invicta
Panorama
Solstice
Duxford
Quartz
JB Diego
Santiago
Scout
Tuxedo
Stigg
Kingdom
Hereward
Leaf type
B = Broad Leaf
M = Medium
F = Fine
e = erect
p = prostate
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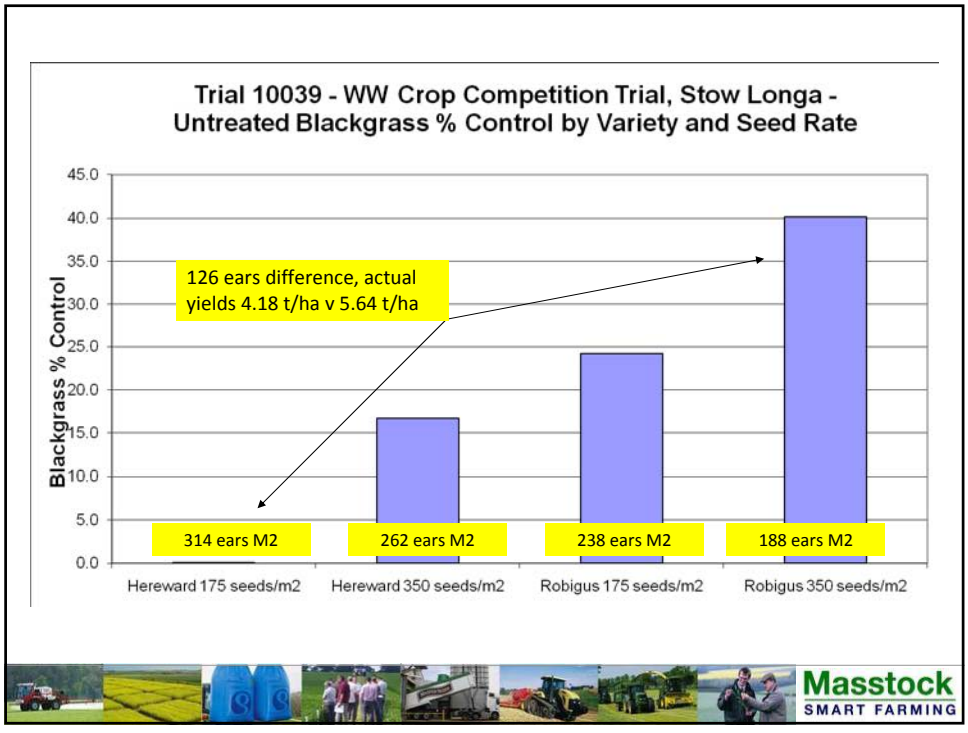
Trial 10039 - WW Crop Competition Trial, Stow Longa -
Untreated Blackgrass % Control by Variety and Seed Rate
Blackgrass % Control
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
126 ears difference, actual
yields 4.18 t/ha v 5.64 t/ha
314 ears M2
262 ears M2
238 ears M2
188 ears M2
Hereward 175 seeds/m2
Hereward 350 seeds/m2
Robigus 175 seeds/m2
Robigus 350 seeds/m2
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Variety Competitive Ranking vs Grassweeds - 2010 summary -

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

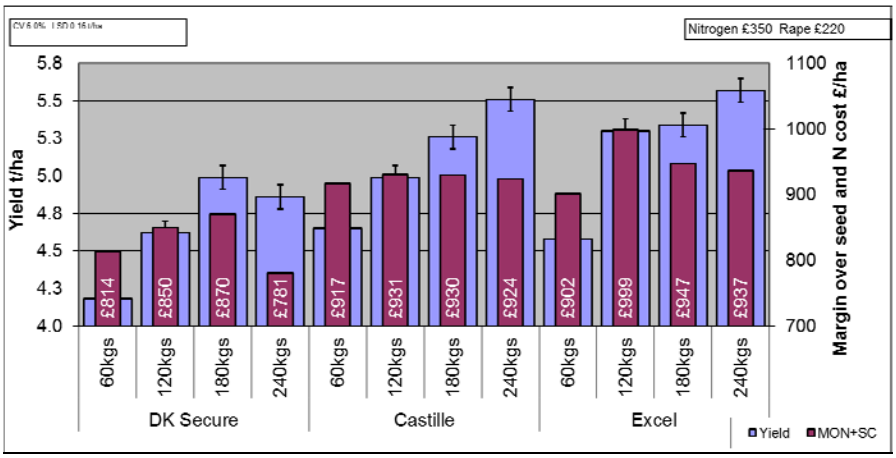
Increasing competitiveness

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 Throws Farm 2009 (DK Secure, Castille, Excel - Tiptree)
Yield and margin over seed and N costs



MON + SC = Margin over Nitrogen and seed cost

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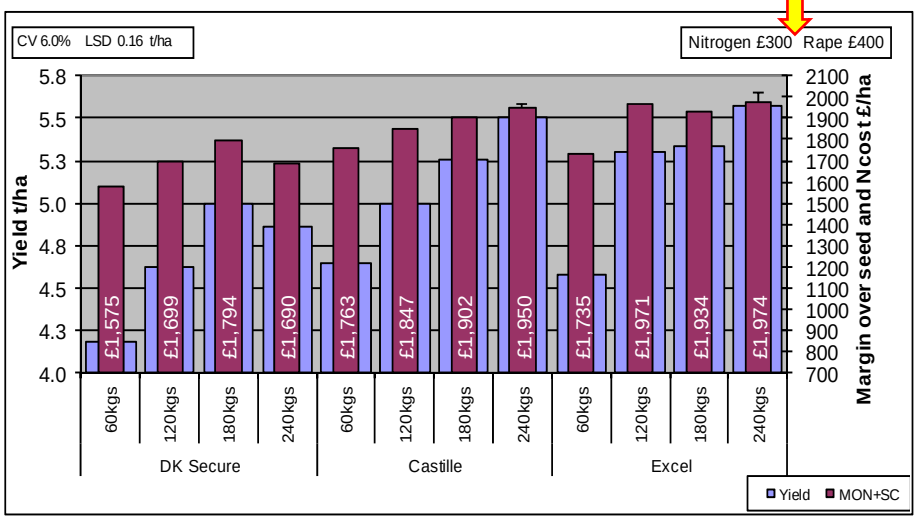

MON + SC = Margin over Nitrogen and seed cost

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

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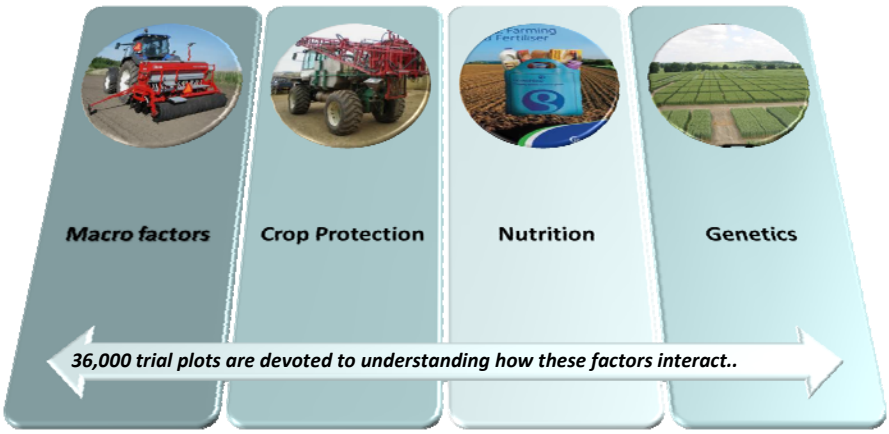

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Thank you