

How to decide when to lower inputs

Strategic Farm Week 2020 Webinar

Simon Cowell, Tim Parton, David Aglen, Brian Barker, Catherine Harries

Housekeeping



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@AHDB_Cereals
#strategicfarm

Strategic Farm Week 2020

ahdb.org.uk/sfweek2020

BASIS/NRoSO Points



Name; BASIS Account No; Postcode



Name; NRoSO Member No; Date of Birth;
Postcode

Format



David Aglen *@DavidAglen*
Introduction



Simon Cowell & Tim Parton *@FarmerSimonC @parker419*
Five principles of regenerative agriculture in practice



Brian Barker *@The_Barker_Boys*
Lowering inputs at Strategic Cereal Farm East



Catherine Harries *@CatherineGar4*
How to decide when to lower inputs



Your host...
Chris Leslie
@Farming_Daft

Session objective



To have an in depth look at crop performance to see if yield really is king and at what cost

Q: What would you like to know by the end of this session?



Introduction to Strategic Cereal Farm Scotland

David Aglen, Strategic Cereal Farm Scotland Host

Farm Details

- 170 suckler cows
- 92ha wheat
- 174ha oats
- 100ha spring beans
- 290ha spring barley
- 50ha kale/ forage cover crops
- 170ha brassica vegetables/carrots/potatoes
- 300ha grass



Watch an introduction to the Strategic Cereal Farm Scotland at ahdb.org.uk/SFweek20



Strategic Farm Investigations at BHF



- Expand cropping opportunities for successful direct drilling.
- Increase cover cropping options in our climate.
- Investigate more integration of livestock in the arable rotation.
- Build a more resilient production system around a regenerative farming system.



What fungicide have you applied to date?

1. Full programme
2. T1 and T2
3. Nutrition
4. Nothing

Have you applied foliar nutrition to date?

1. Yes
2. No

What's the current crop potential on winter wheat?

- <5 t/ha
- 5-7 t/ha
- 7-10 t/ha
- >10 t/ha

Regenerative agriculture in practice

Simon Cowell



2005



2017



Direct Drilling





Winter Wheat Variety Trial Year 1

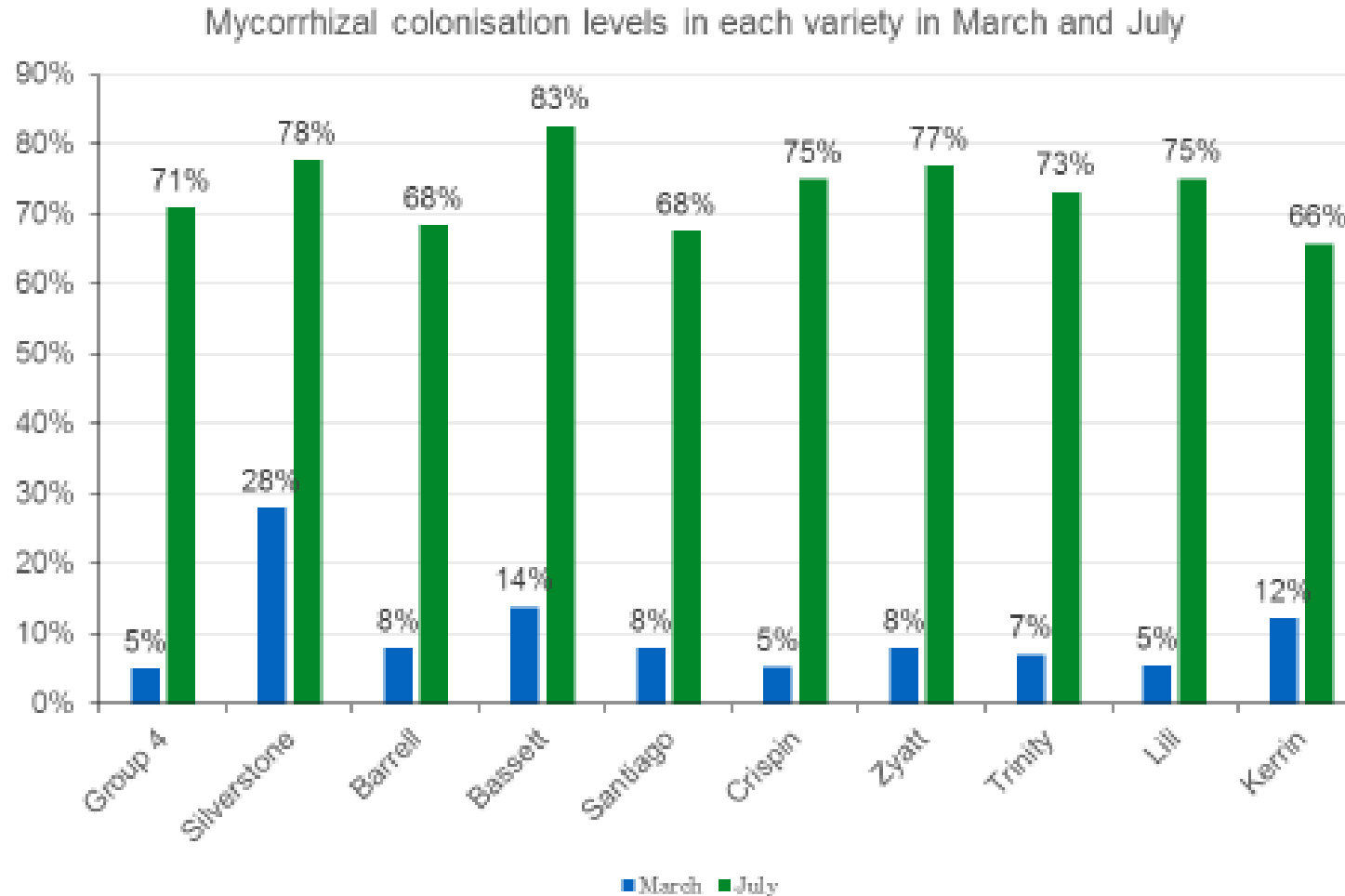


Figure 3. The proportion of analysed root segments found with signs of mycorrhizal root colonisation, split by each variety. For root samples collected in March and July.

Heavy Land Wheat Growing

Home Saved Blend of 4 Varieties

No Seed Dressings

No P or K Fertilisers

No Lime

No Growth Regulators

No Slug Pellets

Less Fungicides

Less Nitrogen



Regenerative agriculture in practice

Tim Parton







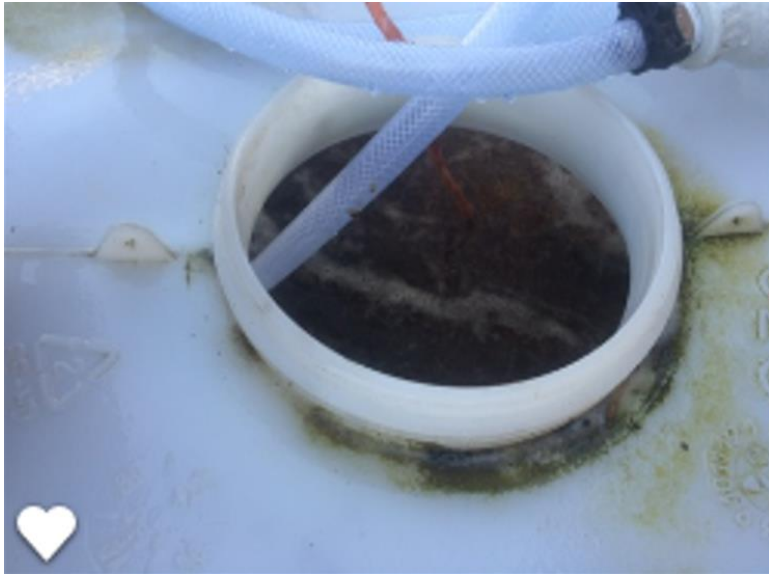
Using nature to
take down a cover

10 species
cover





Brewing Tank



Tissue testing



Analysis Results (LEAF)

Customer T PARTON
BREWOOD FM
COVEN
WV9 5BW

Distributor EDAPHOS LTD - ANDREW BAMBER

Sample Ref LOWER FENNEL

Sample No E237626/02

Crop WHEAT

Date Received 02/05/2018

Analysis	Result	Guideline	Interpretation	Comments
Nitrogen (%)	4.13	3.00	Normal	Adequate level.
Phosphorus (%)	0.31	0.30	Normal	Adequate level.
Potassium (%)	3.72	3.50	Normal	Adequate level.
Calcium (%)	0.25	0.40	Low	Low priority. See comments below.
Magnesium (%)	0.10	0.12	Slightly Low	Consider foliar applications of MAGNESIUM
Sulphur (%)	0.24	0.25	Slightly Low	CONSIDER TREATMENT.
Boron (ppm)	3.7	5.0	Low	Consider treatment with Boron.
Copper (ppm)	4.7	7.0	Low	PRIORITY FOR TREATMENT.
Iron (ppm)	113	50	Normal	Adequate level.
Manganese (ppm)	34.9	35.0	Slightly Low	Consider foliar applications of MANGANESE
Molybdenum (ppm)	1.15	0.10	Normal	Adequate level.
Zinc (ppm)	21.7	25.0	Slightly Low	Consider foliar applications of ZINC.

Additional Comments



Analysis Results (LEAF)

Customer T PARTON
BREWOOD FM
COVEN

Distributor EDAPHOS LTD - ANDREW BAMBER

Sample Ref LOWER FENNEL


Sample No E232131/01

Crop WHEAT

Date Received 01/05/2018


Analysis	Result	Guideline	Interpretation	Comments
Nitrogen (%)	4.22	3.00	Normal	Adequate level.
Phosphorus (%)	0.27	0.30	Slightly Low	CONSIDER TREATMENT.
Potassium (%)	3.23	3.50	Slightly Low	CONSIDER TREATMENT.
Calcium (%)	0.47	0.40	Normal	Adequate level.
Magnesium (%)	0.11	0.12	Slightly Low	Consider foliar applications of MAGNESIUM
Sulphur (%)	0.41	0.25	Normal	Adequate level.
Boron (ppm)	4.0	5.0	Low	Consider treatment with Boron.
Copper (ppm)	7.3	7.0	Normal	Adequate level.
Iron (ppm)	160	50	Normal	Adequate level.
Manganese (ppm)	111.6	35.0	Normal	Adequate level.
Molybdenum (ppm)	1.38	0.10	Normal	Adequate level.
Zinc (ppm)	28.5	25.0	Normal	Adequate level.

Additional Comments



Lancrop

Laboratories


Open with Google Docs

Analysis Results (LEAF)

Customer

T PARTON
BREWOD FM
COVEN

Distributor

EDAPHOS LTD - ANDREW BAMBER

Sample Ref

UPPER FENNEL

Date Received

01/06/2018

Sample No



E282121/01


Crop

BARLEY (SPRING)

Analysis	Result	Guideline	Interpretation	Comments
Nitrogen (%)	5.25	2.80	High	Above normal range.
Phosphorus (%)	0.43	0.35	Normal	Adequate level.
Potassium (%)	4.36	3.80	Normal	Adequate level.
Calcium (%)	0.55	0.50	Normal	Adequate level.
Magnesium (%)	0.16	0.15	Normal	Adequate level.
Sulphur (%)	0.39	0.20	Normal	Adequate level.
Boron (ppm)	5.3	6.0	Slightly Low	Consider treatment with Boron.
Copper (ppm)	11.4	6.0	Normal	Adequate level.
Iron (ppm)	93	50	Normal	Adequate level.
Manganese (ppm)	33.1	30.0	Normal	Adequate level.
Molybdenum (ppm)	0.40	0.40	Normal	Adequate level.
Zinc (ppm)	46.6	20.0	Normal	Adequate level.

Page 1 / 4


**Lancrop
Laboratories**

Analysis Results (LEAF)

Customer	T PARTON BREWOD FM COVEN	Distributor	EDAPHOS LTD - ANDREW BAMBER
Sample Ref	UPPER FENNEL TRIAL	Date Received	01/06/2018
Sample No	E282121/02		
Crop	BARLEY (SPRING)		

Analysis	Result	Guideline	Interpretation	Comments
Nitrogen (%)	4.75	2.80	Normal	Adequate level.
Phosphorus (%)	0.48	0.35	Normal	Adequate level.
Potassium (%)	4.34	3.80	Normal	Adequate level.
Calcium (%)	0.63	0.50	Normal	Adequate level.
Magnesium (%)	0.15	0.15	Normal	Adequate level.
Sulphur (%)	0.33	0.20	Normal	Adequate level.
Boron (ppm)	5.0	6.0	Slightly Low	Consider treatment with Boron.
Copper (ppm)	10.2	6.0	Normal	Adequate level.
Iron (ppm)	83	50	Normal	Adequate level.
Manganese (ppm)	29.9	30.0	Slightly Low	Consider foliar applications of MANGANESE
Molybdenum (ppm)	0.35	0.40	Normal	Adequate level.
Zinc (ppm)	43.8	20.0	Normal	Adequate level.

Spring Barley Trial

Biology Control

Biology	£27.14/ha
Fertiliser	£42.50/ha
Total	£69.64

full fert/fungicide

Biology	£35/ha
Fertiliser	£85/ha
Total	£120



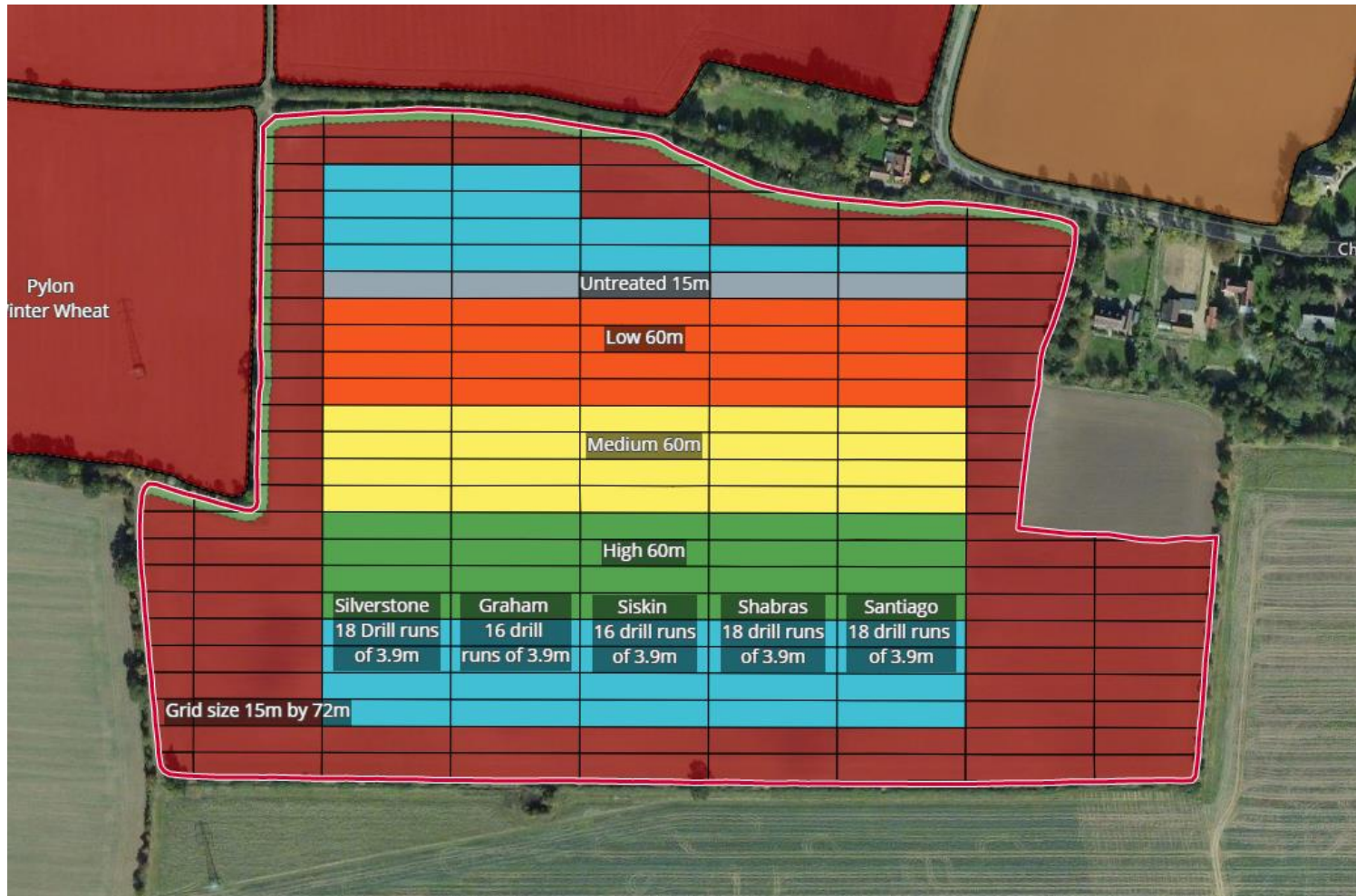
Untreated and Treated



Lowering inputs at Strategic Cereal Farm East

Brian Barker, Strategic Cereal Farm East Host

Strategic Farm East 2019 Demostartion



Notes:

- 5 varieties drilled across the tramlines
- Plots of untreated, low, medium and high investment.
- Fungicide, PGR, Trace Elements, Bio Stimulants varied through plots.
- Fertilisers and herbicides uniform.
- Grid located on uniform soil type.
- Inputs adjusted by Brian to react to field assessments and weather conditions for the season.

Details on this demonstration can be found in Strategic Farm East 2019 handouts.



What did the crops look like?

Four weeks after T3 was applied disease pressure was erupting and visual differences started to appear in green leaf.

Silverstone

5/7/19



GLA% (ave)	Untreated	Low	Medium	High
Leaf 1	2.7	41.0	82.0	87.0
Leaf 2	0.0	26.0	69.0	74.5
Leaf 3	0.0	0.0	11.7	3.8



What did the crops look like?

Four weeks after T3 was applied disease pressure was erupting and visual differences started to appear in green leaf.

Graham

5/7/19



GLA% (ave)	Untreated	Low	Medium	High
Leaf 1	11.5	71.0	81.5	88.3
Leaf 2	6.9	64.5	85.5	87.3
Leaf 3	0.0	3.5	13	26.5



What did the crops look like?

Four weeks after T3 was applied disease pressure was erupting and visual differences started to appear in green leaf.

KWS Siskin

5/7/19



GLA% (ave)	Untreated	Low	Medium	High
Leaf 1	20.5	81.0	90.0	94.4
Leaf 2	10.2	77.0	84.0	91.3
Leaf 3	0.0	12.5	21.0	26.0



What did the crops look like?

Four weeks after T3 was applied disease pressure was erupting and visual differences started to appear in green leaf.

Shabras

5/7/19



GLA% (ave)	Untreated	Low	Medium	High
Leaf 1	15.7	86.8	93.9	86.9
Leaf 2	5.0	70.5	88.8	89.8
Leaf 3	0.0	5.0	10.5	7.0



What did the crops look like?

Four weeks after T3 was applied disease pressure was erupting and visual differences started to appear in green leaf.

Santiago

5/7/19



GLA% (ave)	Untreated	Low	Medium	High
Leaf 1	0.6	31.5	86.5	90.0
Leaf 2	0.1	19.5	62.4	91.1
Leaf 3	0.0	0.0	17.0	23.5



So what happened at harvest?



@the_barker_boys @AHDB_Cereals #strategicfarm



The Yield award....

Yield T/ha Rank by field location (Highest to Lowest)

	Silverstone	Graham	Siskin	Shabras	Santiago
Untreated	9.57	10.16	9.66	8.55	7.35
Low	10.71	11.59	11.45	11.34	9.52
Medium	11.47	11.83	11.62	11.52	11.22
High	11.68	12.13	12.28	11.03	11.03

Yield T/ha Rank by field location (Highest to Lowest)

	Silverstone	Graham	Siskin	Shabras	Santiago
Untreated	17	15	16	19	20
Low	14	6	9	10	18
Medium	8	3	5	7	11
High	4	2	1	12	13

**Envirofield plot combine took multiple cuts through all the plots to give us the final yield.

Field harvested by us then left plots and cleared afterwards. Weighbridge Yield from complete field 17.01ha = 187.28t @11.01t/ha (15% moisture adjusted)



The Gross Margin award....

GM £/ha Rank by field location

	Silvestone	Graham	Siskin	Shabras	Santiago
Untreated	£ 898	£ 974	£ 909	£ 767	£ 611
Low	£ 1,002	£ 1,116	£ 1,097	£ 1,083	£ 849
Medium	£ 1,025	£ 1,071	£ 1,044	£ 1,032	£ 992
High	£ 981	£ 1,039	£ 1,058	£ 898	£ 898

GM £/ha Rank by field location

	Silvestone	Graham	Siskin	Shabras	Santiago
Untreated	16	13	14	19	20
Low	10	1	2	3	18
Medium	9	4	6	8	11
High	12	7	5	15	17

*Price of Wheat used was £129/t Ex Farm Nov

**All variable cost from handbook used including; Seed, Herbicide, Fertiliser that was used on the whole field at a flat rate.

The NET Margin award....

NET Margin CoP £/T Rank by field location (Lowest to Highest)

	Silverstone	Graham	Siskin	Shabras	Santiago
Untreated	£ 61.06	£ 57.52	£ 60.49	£ 68.35	£ 79.54
Low	£ 60.37	£ 55.79	£ 56.47	£ 67.92	£ 67.93
Medium	£ 64.65	£ 62.69	£ 63.82	£ 64.37	£ 66.10
High	£ 69.54	£ 66.96	£ 66.14	£ 73.64	£ 73.64

NET Margin CoP £/T Rank by field location (Lowest to Highest)

	Silverstone	Graham	Siskin	Shabras	Santiago
Untreated	6	3	5	16	20
Low	4	1	2	14	15
Medium	10	7	8	9	11
High	17	13	12	18	18

*Price of Wheat used was £129/t Ex Farm Nov

**All variable cost from handbook used including; Seed, Herbicide, Fertiliser that was used on the whole field at a flat rate.

*** All machinery usage costed into the NET margin using actual running costs calculated by S&P machinery Review 2018

2019/20 Repeat Demonstration



Silverstone was not available so has been replaced by KWS Crispin.

Same field, Same layout, Variety order different, same approach of judging investment for the season and weather in real time.

Field has been drilled but in polar opposite conditions to last year!



My take home message.....

- This is one year, one field, one try, so don't take it as gospel!
- Next spring challenge your mindset and try it on one of your fields or a couple of varieties. How low will you go? Then share your experiences with AHDB Knowledge Exchange Team.
- It's our own personal attitude to risk! Spend less or spend more as insurance?
- Don't farm this year as if it was last year, clean slate with potentially lower potential due to autumn conditions!



Strategic Farm Week – Summer 2020

How to decide when to lower inputs

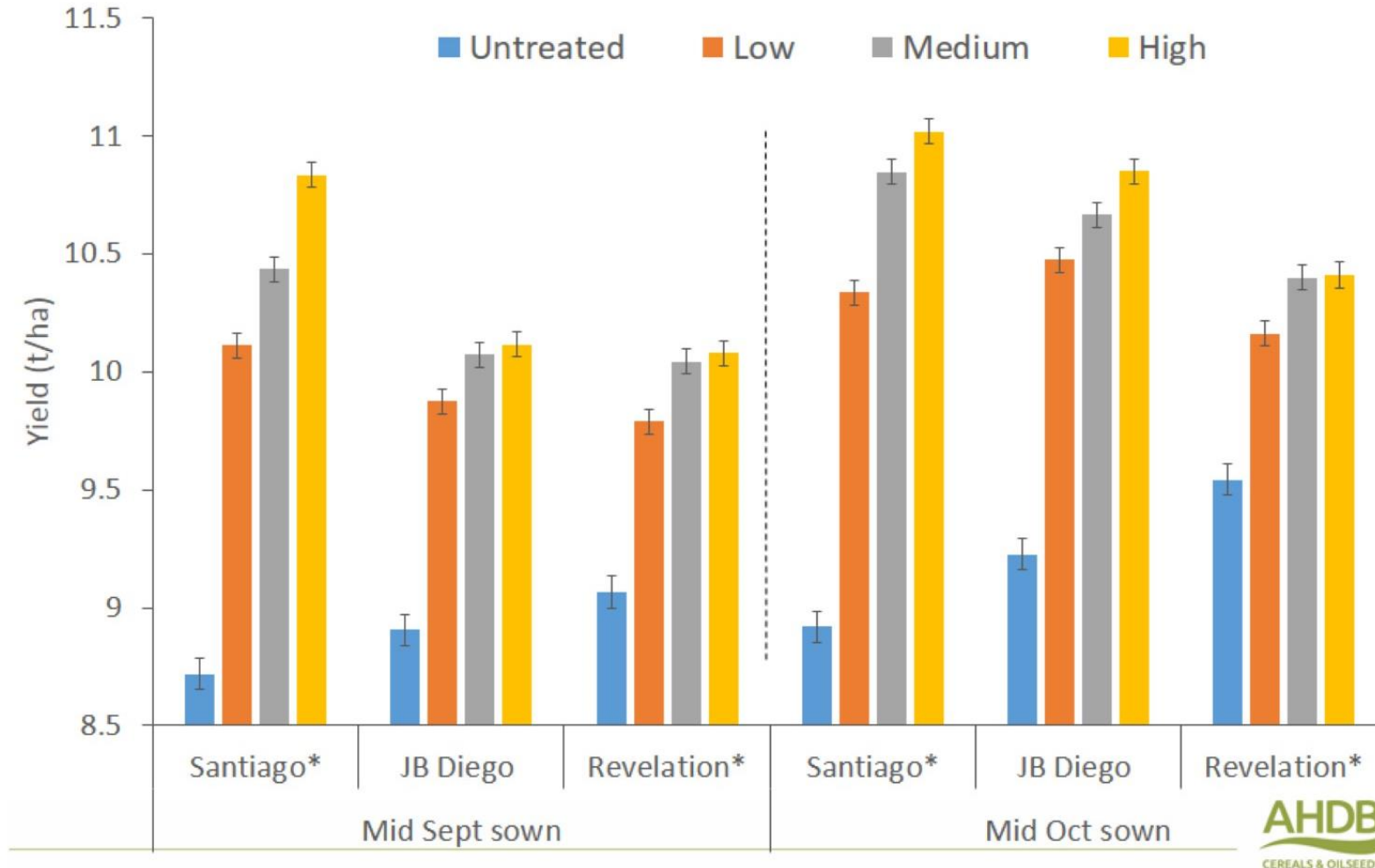
Catherine Harries, AHDB



How to decide when to lower inputs

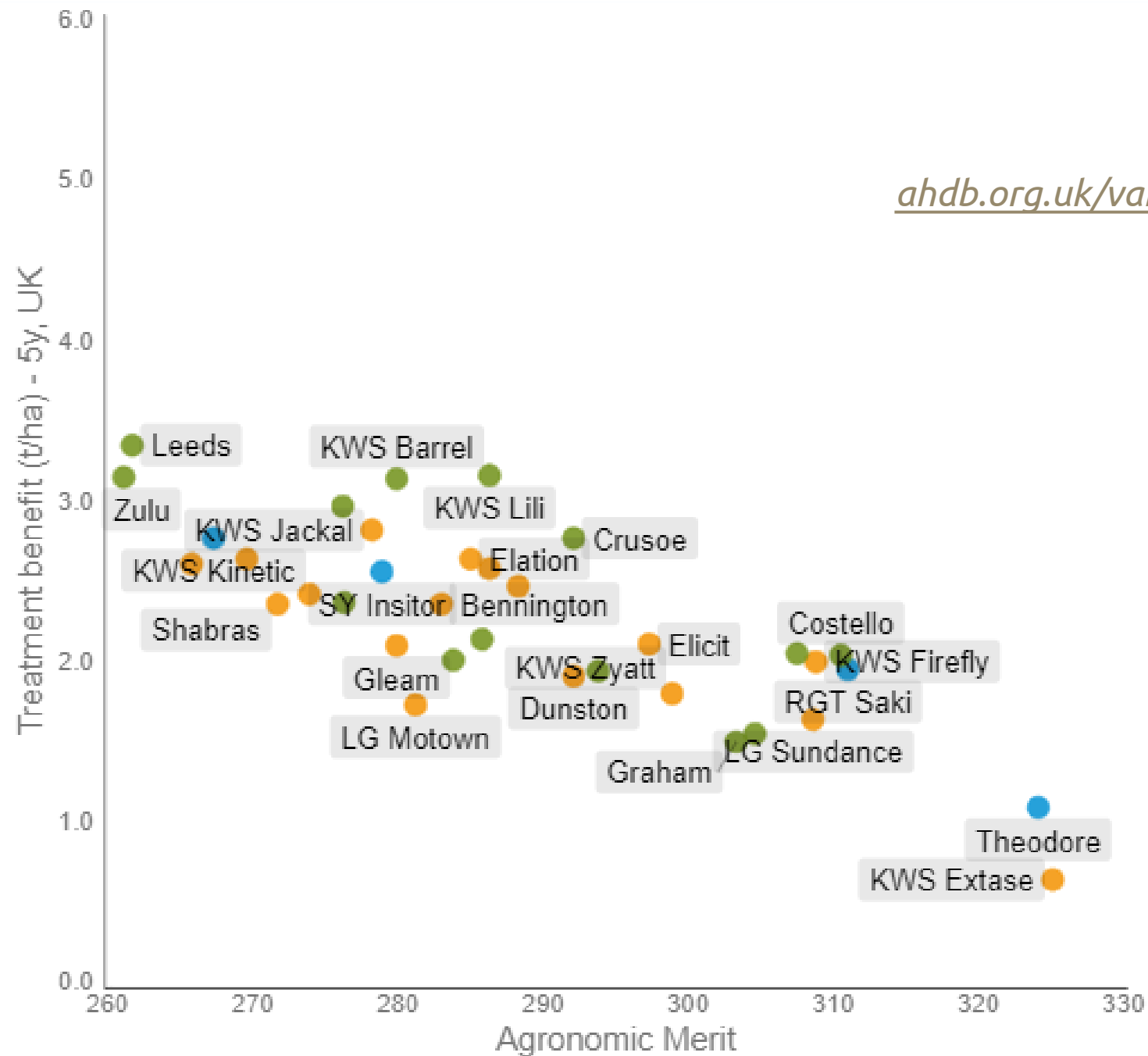
- T0? **T1**, T1.5? **T2**, T3? T4?
- Assess all disease risks:
 - Variety
 - Drilling date
 - Rotation
 - Weather
- Monitor your crops – see webinar 9am 2nd June

Drilling date



Variety

ahdb.org.uk/variety-selection-wheat

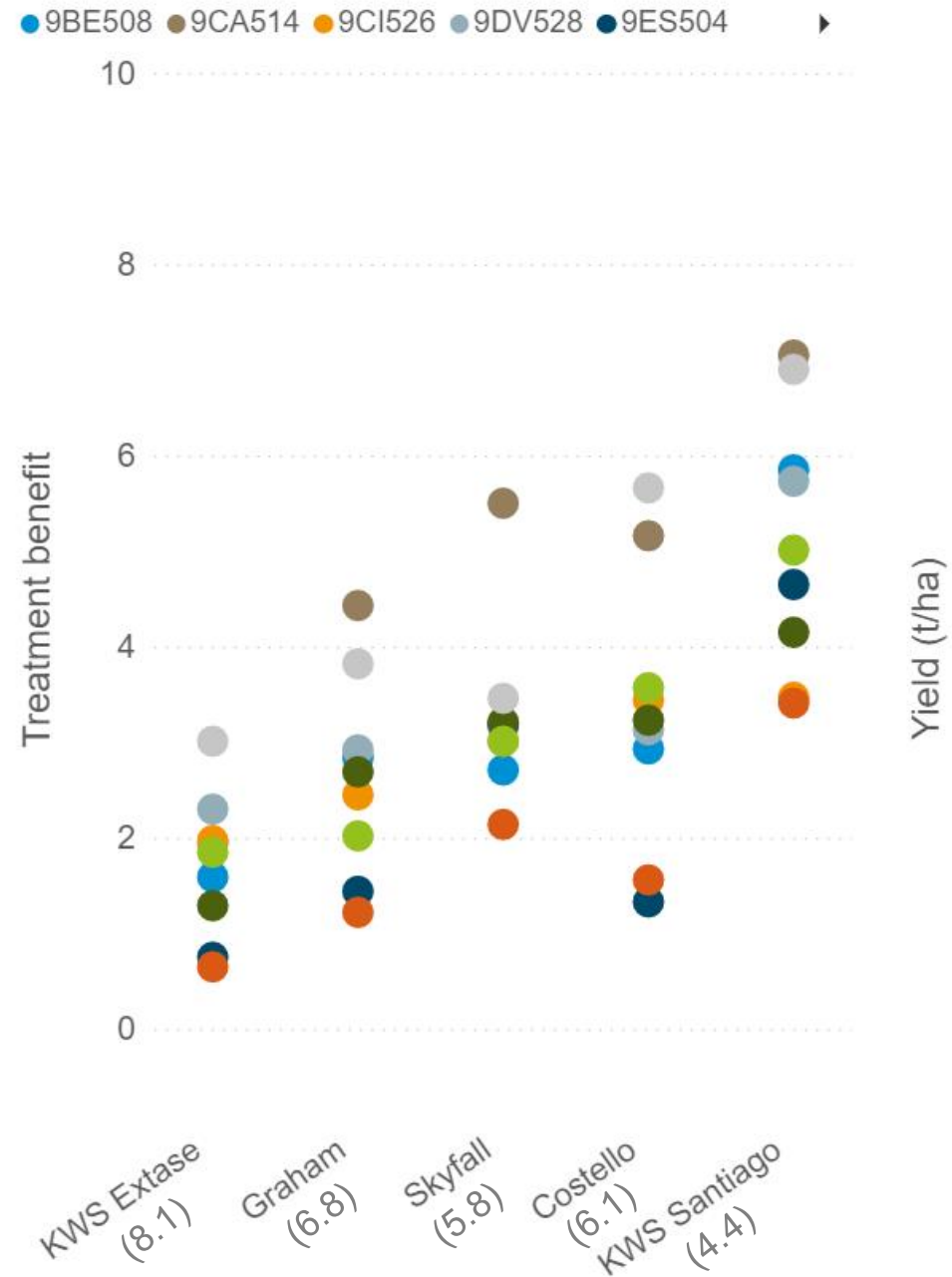


Variety



Variety name

Multiple selections



Thank you

Catherine.harries@ahdb.org.uk

 @CatherineGar4



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Strategic Farm Week 2020



Watch Strategic Farm research videos



Take part in the webinars



Listen to the podcast special



Download the 'how to' resources

All at: ahdb.org.uk/sfweek2020

Still to come in Strategic Week 2020.....

Wednesday 3 June

- Strategic Farm Week podcast
- Strategic Farm resources

All available at ahdb.org.uk/SFweek2020

Thursday 4 June

09:00 – 10:30 Crop establishment **considerations**

12:00 – 13:30 Soil structure assessments **masterclass**

19:00 – 20:30 Mole drainage and soil loosening **masterclass**

Friday 5 June

- Strategic Farm Week closing video with Martin Grantley-Smith
- Strategic Farm resources

Previous Strategic Farm webinars

- How to monitor crop development and disease
- How to monitor for key insect pests and beneficials
- How to decide when to lower inputs

Videos and resources

- Trials and demonstrations for harvest 2020 at Strategic Cereal Farm East
- Trials and demonstrations for harvest 2020 at Strategic Cereal Farm West
- Introduction to Strategic Cereal Farm Scotland

Thank you



REC ●



Chris Leslie
Chris.leslie@ahdb.org.uk