Project update
(summer 2021)

Project title	Wheat fungicide margin challenge (ADAS/AHDB)		
Project number	1021743		
Start date	1 February 2021	End date	30 November 2021

Project aim and objectives

The ADAS/AHDB wheat fungicide margin challenge connects farmers across a network of regional sites to develop crop management strategies that focus on margin maximisation, rather than headline yields.

The challenge provides a fair comparison between farmers' regional fungicide strategies in winter wheat plots (with a locally popular variety) on a single site. All of the plots are taken through to harvest. The aim is to achieve the highest net margin.

In 2019, the approach was tested at a single site (Herefordshire). In 2020, the challenge covered three regions (West, East and South). In 2021, the challenge was widened to include six regions.

This project update provides an overview of the fungicide programmes used by each competitor (T0, T1, T2 and T3). It also provides the results from summer disease assessments.

Information on the rules and latest results is available via:
ahdb.org.uk/wheat-fungicide-margin-challenge-adas-ahdb

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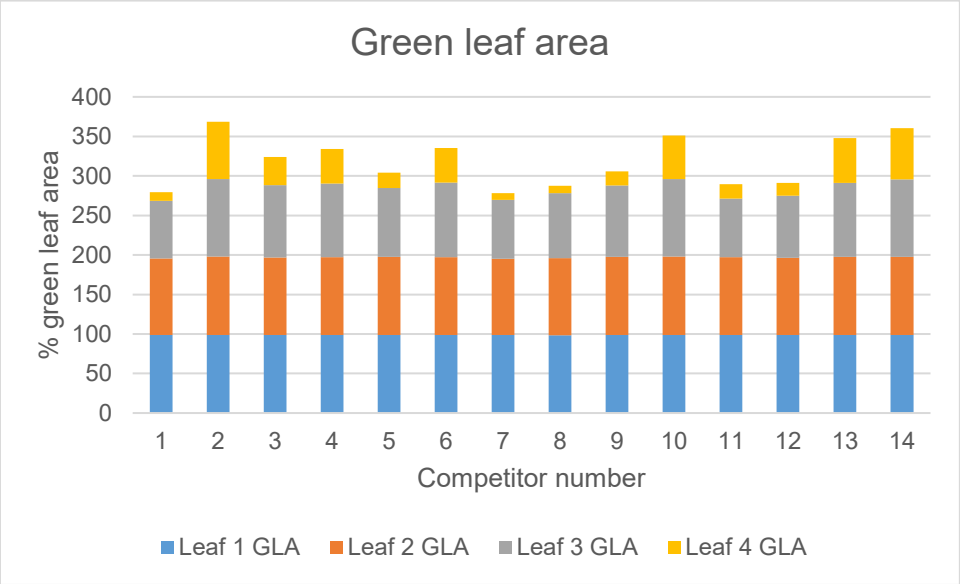
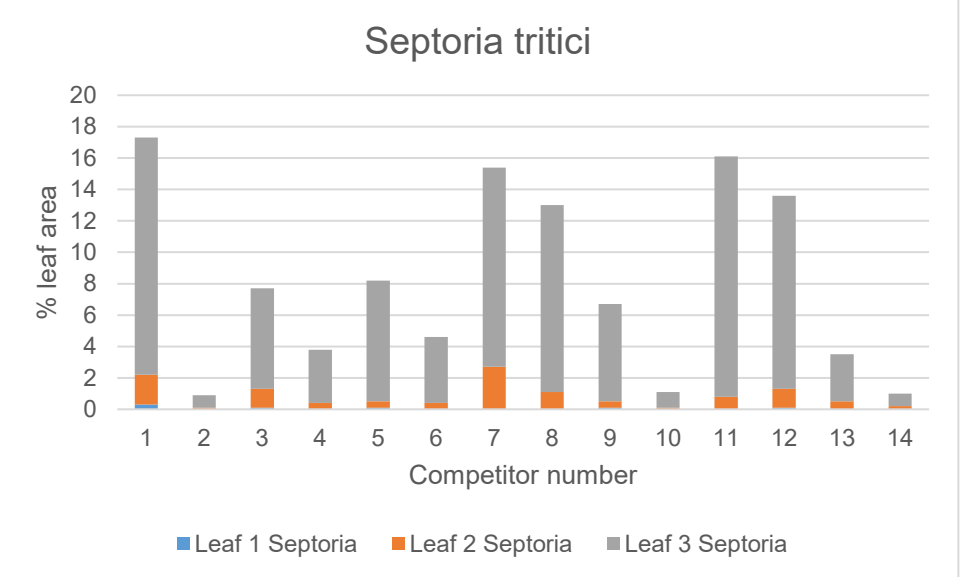
South West

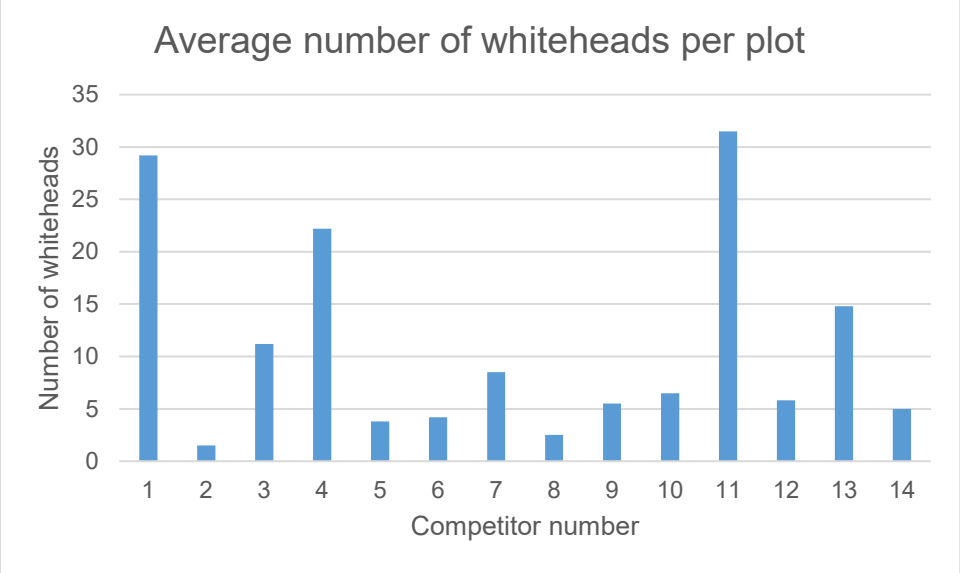
A full disease assessment was completed on 25 June 2021. There are significant differences ($p < 0.05$, in the percentage leaf area affected by septoria tritici and the number of whiteheads (due to eyespot) per plot between the competitor treatments. Unfortunately, barley yellow dwarf virus (BYDV) is present in the trial with plots showing between 10.5 and 15.8 % BYDV.

Competitor	T0 (GS30)	T1 (GS32)	T2 (GS39)	T3
1*	Untreated	Untreated	Untreated	Untreated
2*	Cyflamid 0.35 + Sunorg pro 0.5 + Comet 200 0.6	Revystar XE 1.25 + Elatus Era 0.6 + Arizona 1.5	Revystar XE 1.5 + Arizona 1.5	Prosaro 1.0 + Comet 200 0.6
3	Untreated	Arizona 1.0 + Legend 0.3	Revystar XE 0.7 + Arizona 1.0	Legend 0.5 + Unizeb Gold 1.0
4	Phoenix 0.5	Arizona 0.5	Revystar XE 1.0 + Arizona 0.5	Proline 275 0.4 + Legend 1.0
5	Untreated	Ascra Xpro 0.8	Revystar XE 1.0	Untreated
6	Untreated	Ascra Xpro 1.0	Revystar XE 1.25	Legend 0.52 + Proline 275 0.4
7	Untreated	Aviator 1.0	Ascra Xpro 0.6	Untreated
8	Untreated	Amistar 0.8 + Legend 0.3	Revystar XE 0.8	Proline 275 0.5
9	Untreated	Ascra Xpro 1.0	Revystar XE 0.8	Proline 275 0.4 + Legend 0.52
10	Soleil 1.0	Revystar 0.75 + Arizona 1.0	Univoq 1.2 + Arizona 1.0	Comet 200 0.33 + Proline 275 0.4
11	Untreated	Untreated	Revystar XE 0.8	Legend 0.5
12	Untreated	Proline 0.45	Elatus Era 0.75	Aviator Xpro 0.75
13	Legend 0.75	Revystar XE 0.8 + Arizona 1.0	Revystar XE 1.0 + Arizona 1.5	Proline 275 0.4 + Legend 0.4
14	Untreated	Ascra Xpro 1.0 + Arizona 1.0	Univoq 1.25	Proline 275 0.25 + Legend 0.75

*Plots are managed by the ADAS team as an untreated control and a blockbuster programme


Green leaf area
% green leaf area
400
350
300
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14
Competitor number
Leaf 1 GLA
Leaf 2 GLA
Leaf 3 GLA
Leaf 4 GLA

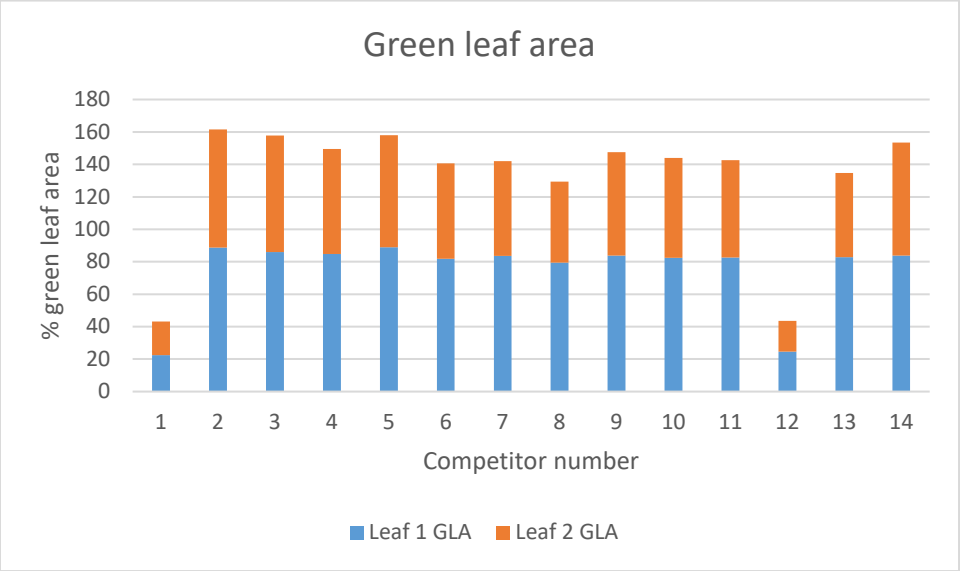

Septoria tritici
% leaf area
20
18
16
14
12
10
8
6
4
2
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14
Competitor number
Leaf 1 Septoria
Leaf 2 Septoria
Leaf 3 Septoria

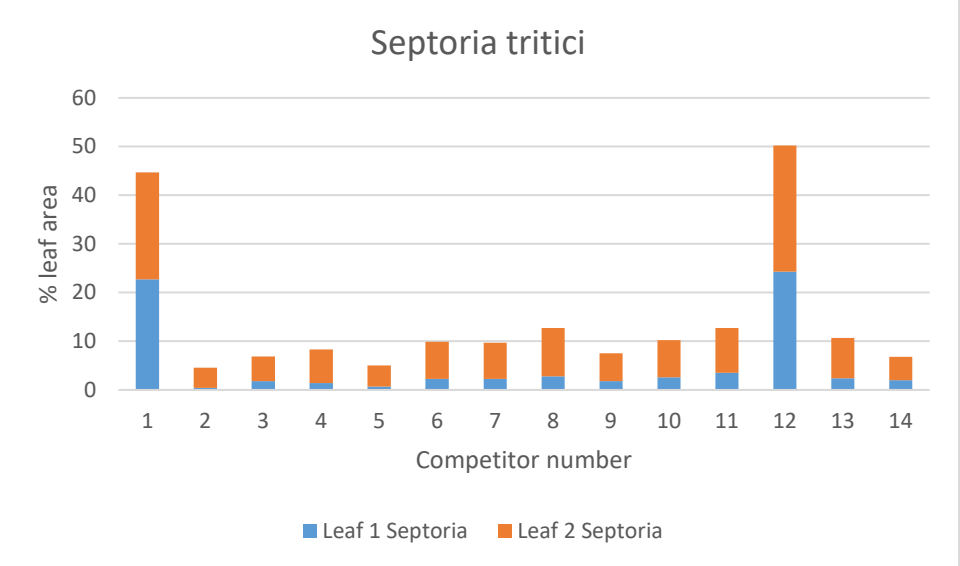

Average number of whiteheads per plot
Number of whiteheads
35
30
25
20
15
10
5
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14
Competitor number

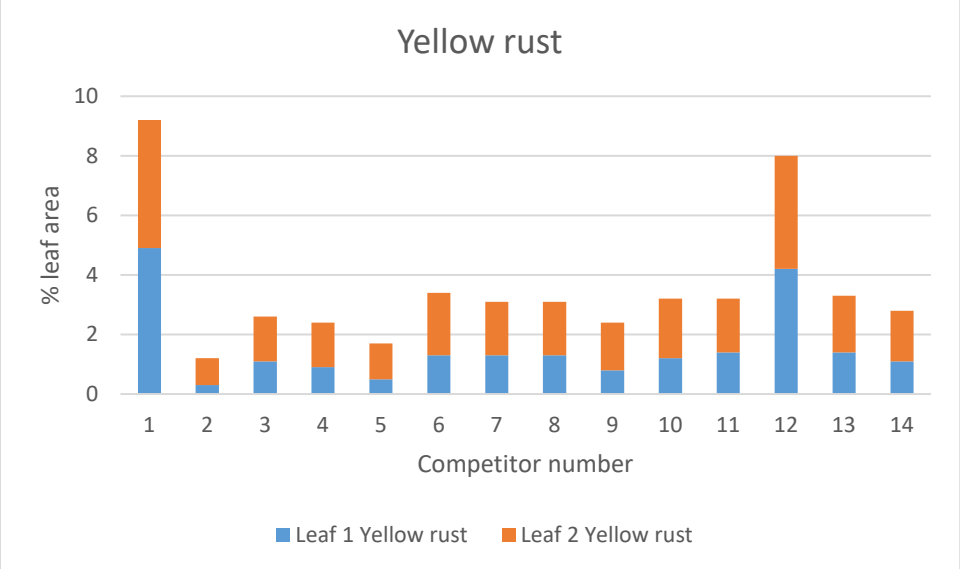
North East

Competitor	T0 (GS30)	T1 (GS32)	T2 (GS39)	T3 (GS65)
1*	Untreated	Untreated	Untreated	Untreated
2*	Cyflamid 0.35 + Sunorg pro 0.5 + Comet 200 0.6	Revystar XE 1.25 + Elatus Era 0.6 + Arizona 1.5	Revystar XE 1.5 + Arizona 1.5	Prosaro 1.0 + Comet 200 0.6
3	Untreated	Revystar XE 0.4 + Phoenix 1.0	Univoq 1.25 + Arizona 1.0	Legend 0.5 + Unizeb Gold 1.0
4	Arizona 1.0	Proline 275 0.55 + Legend 0.5 + Phoenix 1.0	Revystar XE 0.9 + Comet 200 0.4	Legend 0.75
5	Soleil 0.75 + Arizona 1.0	Velogy Plus 0.6 + Plexeo 1.2 + Cyflamid 0.125 + Phoenix 1.0	Revystar XE 1.25 + Comet 200 0.625 + Arizona 1.0	Proline 275 0.36 + Comet 200 0.5
6	Untreated	Untreated	Univoq 1.25 + Arizona 1.0	Legend 0.5 + Unizeb Gold 1.0
7	Legend 0.5	Myresa 0.7 + Priaxor 0.7	Myresa 0.8 + Priaxor 0.8	Prosaro 0.7
8	Untreated	Legend 0.6 + Imtrex 1.0	Ascra Xpro 1.0	Legend 0.8
9	Proline 275 0.32	Aviator 0.75 + Phoenix 0.75	Revystar XE 0.85 + Arizona 0.75	Legend 1.0
10	Untreated	Phoenix 0.75 + Legend 0.5	Arizona 0.75 + Revystar XE 0.75 + Talius 0.15	Proline 275 0.3 + Legend 0.3
11	Orius P 0.75	Ascra Xpro 1.0 + Phoenix 1.0 + Talius 0.15	Revystar XE 1.0 + Comet 200 0.4	Prosaro 0.45
12	P K Extra 3.0	Biology + Molasses 3.0 + CA 3 kg/ha	Biology 1.0 l/ha + CA 2 l/ha	Bacillus 3 l/ha + CA 3 kg/ha
13	Untreated	Aviator 1.0	Univoq 1.25	Proline 275 0.72
14	Untreated	Ascra Xpro 1.0 + Phoenix 1.0	Univoq 1.5	Prosaro 0.5 + Legend 0.5

*Plots are managed by the ADAS team as an untreated control and a blockbuster programme


Green leaf area
% green leaf area
180
160
140
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14
Competitor number
Leaf 1 GLA
Leaf 2 GLA


Septoria tritici
% leaf area
60
50
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14
Competitor number
Leaf 1 Septoria
Leaf 2 Septoria


Yellow rust
% leaf area
10
8
6
4
2
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14
Competitor number
Leaf 1 Yellow rust
Leaf 2 Yellow rust

North West and Northern Ireland

Competitor	T0 (GS30)	T1 (GS32)	T2 (GS39)	T3 (GS59-63)
1*	Untreated	Untreated	Untreated	Untreated
2*	Cyflamid 0.35 + Sunorg pro 0.5 + Comet 200 0.6	Revystar XE 1.25 + Elatus Era 0.6 + Arizona 1.5	Revystar XE 1.5 + Arizona 1.5	Prosaro 1.0 + Comet 200 0.6
3	Untreated	Legend 0.4 + Arizona 1.0	Revystar XE 1.5 + Arizona 1.0	Legend 0.5 + Unizeb Gold 1.0
4	Proline 275 0.2	Aviator 1.0	Ascra Xpro 1.0	Legend 0.5
5	Untreated	Elatus Era 0.5 + Comet 200 0.3	Univoq 1.25	Legend 0.72
6	Untreated	Aviator 1.0	Ascra Xpro 1.0	Proline 275 0.27 + Comet 200 0.2
7	Untreated	Comet 200 0.5 + Proline 275 0.3	Revystar XE 1.0	Proline 275 0.3 + Legen 0.5
8	Untreated	Proline 275 0.3 + Legend 0.16 + Imtrex 0.75	Elatus Era 0.75 + Legend 0.15	Prosaro 0.5
9	Untreated	Ascra Xpro 0.6	Ascra Xpro 0.7 + Arizona 1.0	Prosaro 0.6
10	Untreated	Revystar XE 0.9 + Arizona 0.6	Univoq 1.0 + Arizona 0.6	Legend 0.6 + Unizeb Gold 0.8
11	Untreated	Ascra 1.0	Univoq 1.0	Untreated
12	Untreated	Aviator 0.6	Revystar XE 0.5	Untreated
13	Untreated	Aviator 0.7	Revystar XE 1.1	Untreated
14	Untreated	Ascra Xpro 1.0 + Arizona 1.0	Univoq 1.25	Proline 275 0.25 + Legend 0.75

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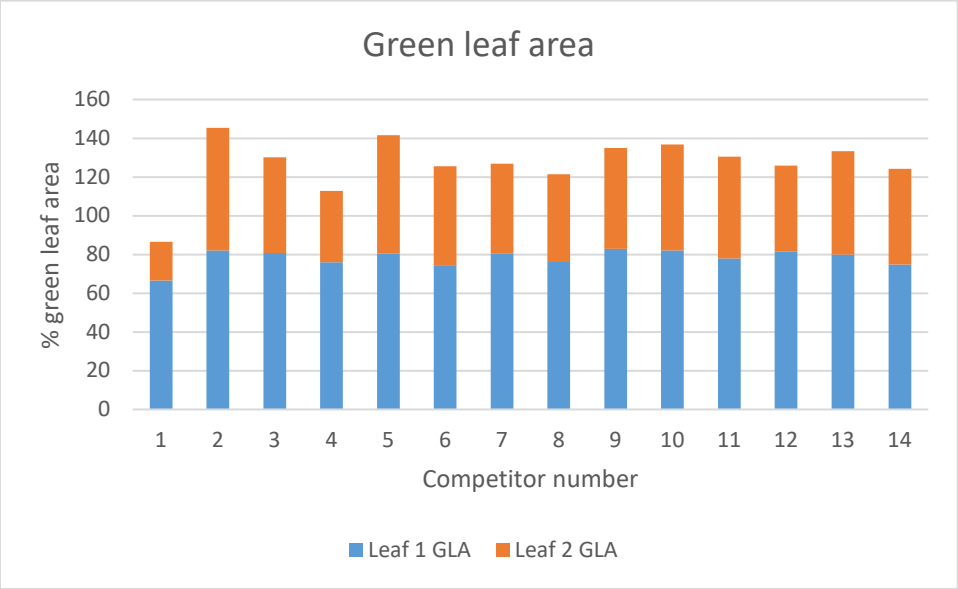
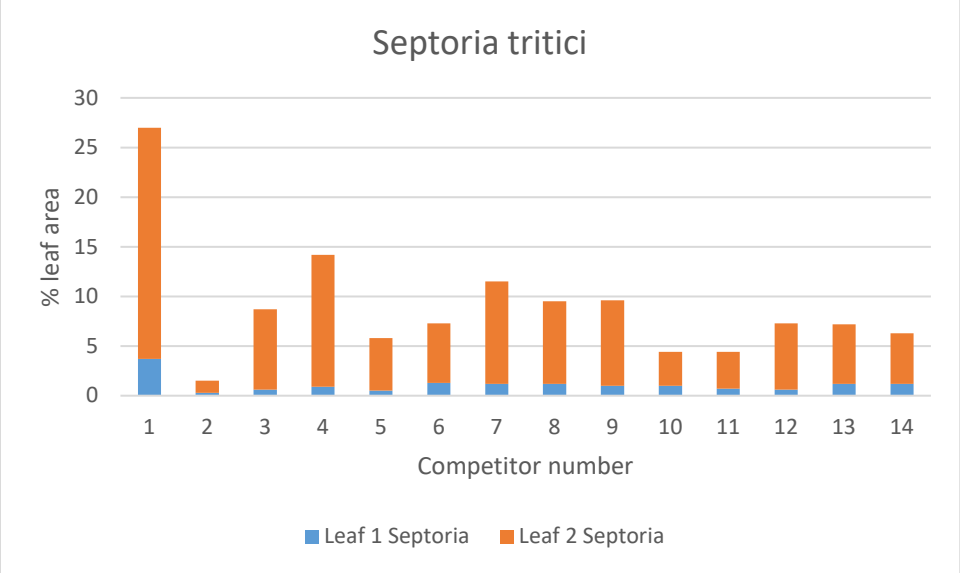

Green leaf area
% green leaf area
160
140
120
100
80
60
40
20
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Competitor number
Leaf 1 GLA
Leaf 2 GLA


Septoria tritici
% leaf area
30
25
20
15
10
5
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Competitor number
Leaf 1 Septoria
Leaf 2 Septoria

East Midlands

Competitor	T0 (GS30)	T1 (GS32)	T2 (GS39)	T3 (GS61)
1*	[1]Cyflamid 0.35 + Sunorg pro 0.5 + Comet 200 0.6	Untreated	Untreated	Untreated
2*	[1]Untreated	Revystar XE 1.25 + Elatus Era 0.6 + Arizona 1.5	Revystar XE 1.5 + Arizona 1.5	Prosaro 1.0 + Comet 200 0.6
3	Legend 0.4	Legend 0.4 + Arizona 1.0	Univoq 1.0 + Arizona 1.0	Prosaro 0.5 + Dithane 0.67
4	Untreated	Comet 200 0.4	Elatus Era 0.9	Untreated
5	Legend 0.5 + Arizona 1.0	Elatus Era 0.53 + Arizona 0.8	Revystar XE 1.0 + Comet 200 0.75	Proline 275 0.45 + Folicur 0.5
6	Legend 0.5 + Arizona 0.5	Adexar 0.8 + Arizona 1.0	Ascra Xpro 1.2	Folicur 0.7
7	Legend 0.5	Legend 0.5	Ascra 1.0	Prosaro 0.5
8	Legend 0.5	Aviator 0.8	Revystar XE 1.0	Folicur 0.75
9	Legend 0.5	Ascra Xpro 0.8	Elatus Era 0.8	Sunorg Pro 0.8
10	Untreated	Comet 200 1.0	Revystar XE 1.0	Folicur 0.5
11	Legend 0.5 + Arizona 1.0	Aviator 0.75 + Arizona 0.75	Aviator 1.0	Folicur 0.5
12	Untreated	Legend 0.4 + Imtrex 0.6	Ascra Xpro 0.8	Folicur 0.4
13	Legend 0.5	Aviator 0.75 + Arizona 1.0	Aviator 0.9	Proline 275 0.7
14	Legend 0.3	Ascra Xpro 1.0 + Arizona 1.0	Univoq 1.25	Proline 275 0.25 + Folicur 0.75

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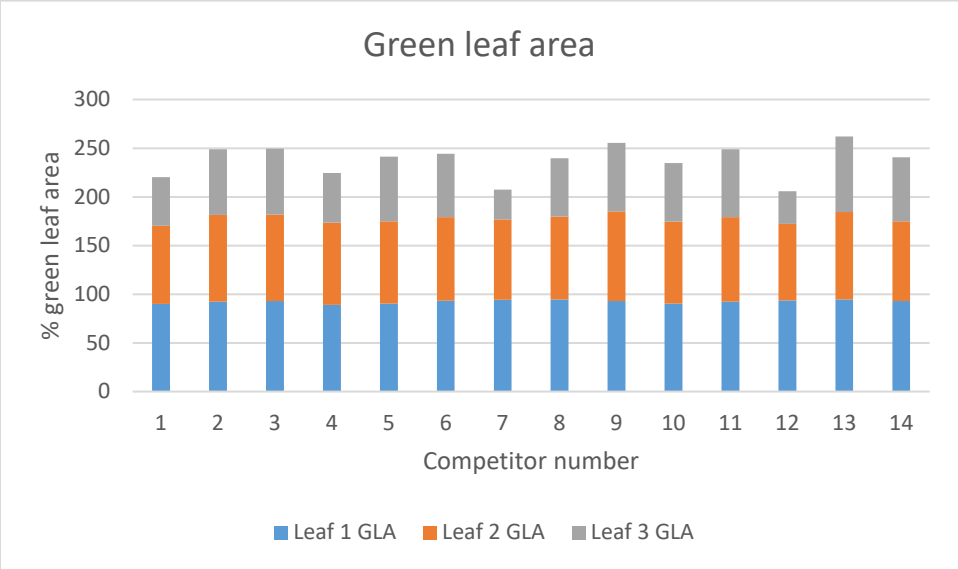
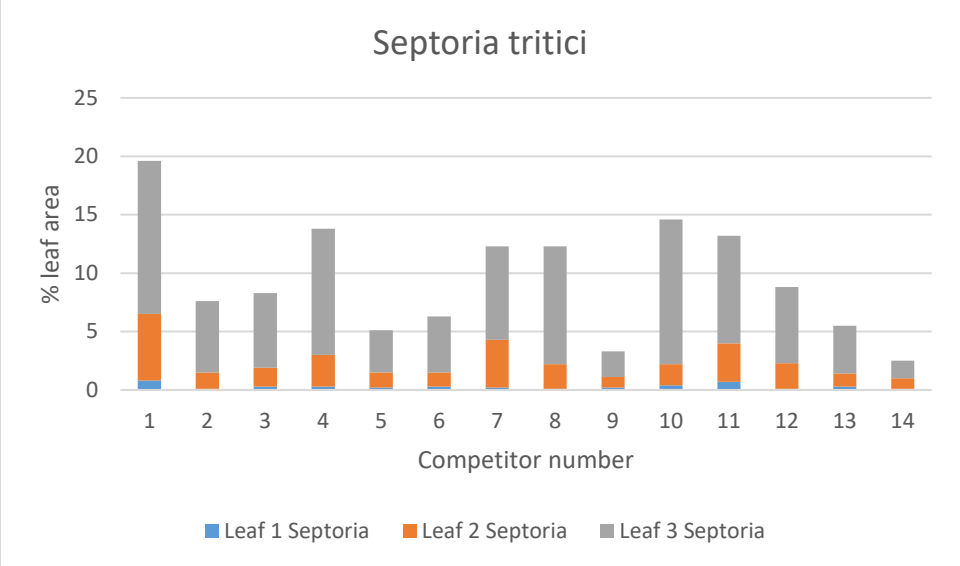
[1]Spray error in trial


Green leaf area
% green leaf area
300
250
200
150
100
50
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Competitor number
Leaf 1 GLA
Leaf 2 GLA
Leaf 3 GLA


Septoria tritici
% leaf area
25
20
15
10
5
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Competitor number
Leaf 1 Septoria
Leaf 2 Septoria
Leaf 3 Septoria

Wales and West

Competitor	T0 (GS30)	T1 (GS32)	T2 (GS39)	T3 (GS65)
1*	Untreated	Untreated	Untreated	Untreated
2*	Cyflamid 0.35 + Sunorg pro 0.5 + Comet 200 0.6	Revystar XE 1.25 + Elatus Era 0.6 + Arizona 1.5	Revystar XE 1.5 + Arizona 1.5	Prosar 1.0 + Comet 200 0.6
3	Legend 0.4	Legend 0.4 + Arizona 1.0	Revystar XE 0.8 + Arizona 1.0	Prosaro 0.5 + Unizeb Gold 1.0
4	Untreated	Ascra Xpro 0.75 + Legend 0.5	Univoq 0.75	Legend 0.5
5	Iodus 0.75	Ascra Xpro 0.75 + Arizona 0.75	Univoq 1.0	Firefly 155 0.7
6	Untreated	Ascra Xpro 0.75 + Arizona 0.75	Aviator 1.0 + Arizona 0.5	Proline 275 0.25
7	Untreated	Revystar XE 0.3 + Arizona 0.5	Univoq 1.0	Consortium 0.3 + Transformer 0.3
8	Untreated	Ascra Xpro 0.8 + Arizona 0.75	Revystar XE 1.0	Legend 0.7 + Comet 200 0.3
9	Untreated	Ascra Xpro 1.0	Revystar XE 1.0	Proline 275 0.4 + Comet 200 0.25
10	Untreated	Ascra Xpro 1.0 + Arizona 0.75	Revystar XE 1.0 + Comet 200 0.3	Proline 275 0.3 + Comet 200 0.3
11	Untreated	Ascra Xpro 0.8 + Arizona 0.75	Revystar XE 0.75 + Arizona 0.75	Proline 275 0.55 + Legend 0.5
12	Legend 0.4	Prosaro 0.75	Ascra 1.2	Prosaro 0.5
13	Untreated	Prosaro 0.8	Velogy Plus 0.65 + Arizona 0.8	Legend 0.86
14	Legend 0.4	Ascra Xpro 1.0	Univoq 0.8	Legend 0.3
15	Legend 0.3	Ascra Xpro 1.0 + Arizona 1.0	Univoq 1.25	Prosaro 0.5 + Legend 0.5
16	Untreated	Legend 0.75 + Penncozeb 1.0	Revystar XE 0.8 + Penncozeb 1.0	Amistar 0.5 + Legend 0.6

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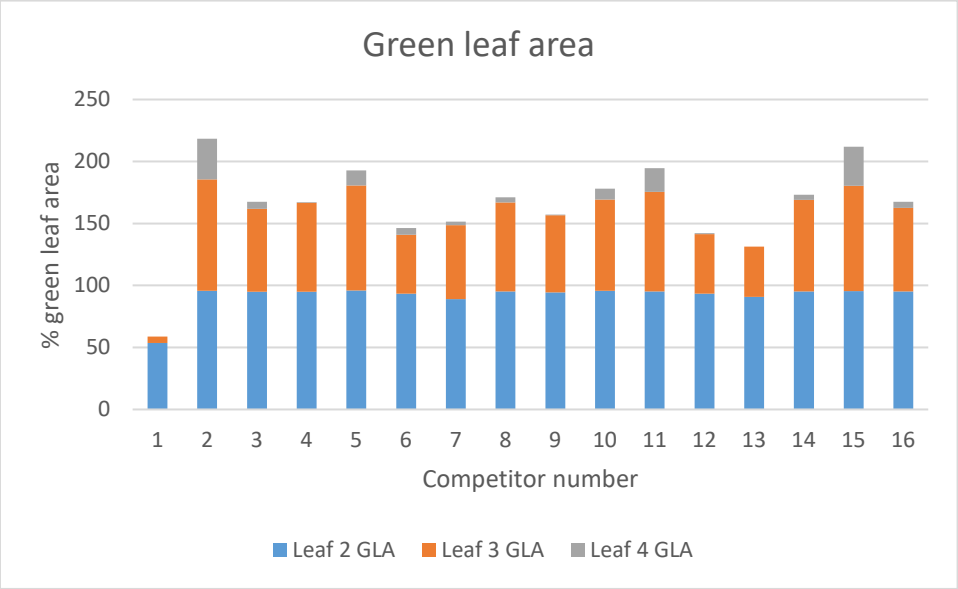
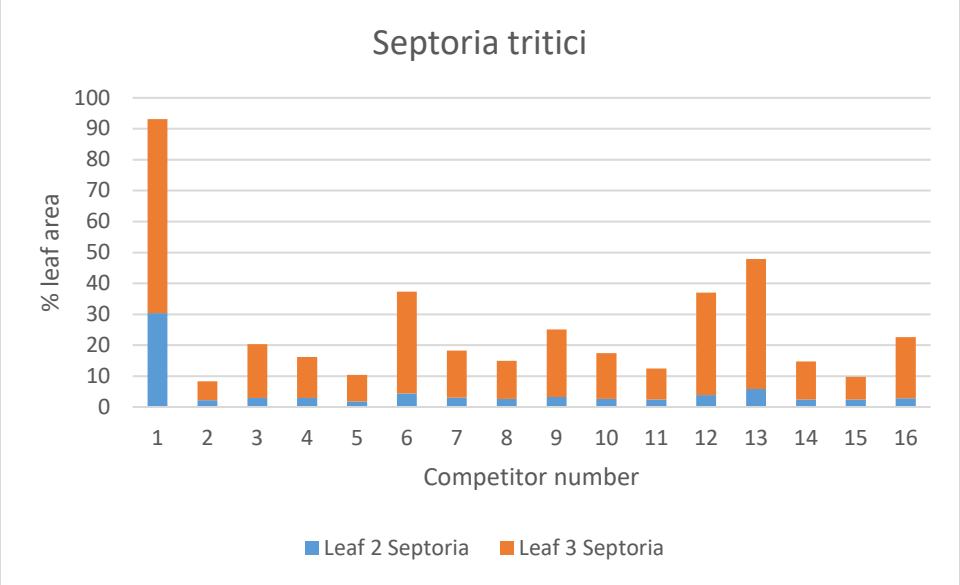

Green leaf area
% green leaf area
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Competitor number
Leaf 2 GLA
Leaf 3 GLA
Leaf 4 GLA


Septoria tritici
% leaf area
100
90
80
70
60
50
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Competitor number
Leaf 2 Septoria
Leaf 3 Septoria

East Anglia

Disease assessment 15 June. Overall the programmes are performing well, with a significant reduction in yellow rust and septoria compared to the untreated. The differences between fungicide programmes are small. The biggest differences are on leaf 3, septoria. Treatments 2, 11 and 15 all reduced disease severity below 5%.

Competitor	T0 (GS30)	T1 (GS32)	T2 (GS39)	T3 (GS59)
1*	Untreated	Untreated	Untreated	Untreated
2*	Cyflamid 0.35 + Sunorg pro 0.5 + Comet 200 0.6	Revystar XE 1.25 + Elatus Era 0.6 + Arizona 1.5	Revystar XE 1.5 + Arizona 1.5	Prosaro 1.0 + Comet 200 0.6
3	Legend 0.5	Aviator 0.625 + Arizona 1.0	Revystar XE 0.75	Legend 0.5
4	Untreated	Ascra Xpro 0.6	Revystar XE 0.375	Legend 0.35
5	Legend 0.4	Ascra Xpro 0.8	Revystar XE 0.75	Proline 275 0.4 + Comet 200 0.3
6	Legend 0.25	Aviator 0.6	Revystar XE 0.5	Legend 0.8
7	Legend 0.5	Ascra Xpro 1.0 + Legend 0.5	Revystar XE 1.0 +Arizona 1.0	Prosaro 0.7
8	Untreated	Ascra Xpro 0.8 + Legend 0.5	Revystar XE 0.5	Legend 0.75
9	Legend 0.5	Legend 0.75	Univoq 1.25 + Comet 200 0.3	Prosaro 0.75
10	Legend 0.5	Aviator 0.8	Revystar XE 1.0	Legend 0.5 + Proline 275 0.3
11	Legend 0.8	Sunorg Pro 0.75 + Amistar 0.5 + Arizona 1.0	Elatus Era 0.6 + Arizona 1.2	Legend 0.4 + Amistar 0.4
12	Untreated	Ascra Xpro 0.8	Revystar XE 0.75	Amistar 1.0 + Legend 0.5
13	Legend 0.75	Elatus Era 0.7	Revystar XE 0.9 + Legen 0.43	Legend 0.77
14	Untreated	Legend 0.75 + Amistar 0.5	Revystar XE 0.5 + Arizona 1.0 + Amistar 0.5	Legend 0.5
15	Legend 0.3	Ascra Xpro 1.0 + Arizona 1.0	Univoq 1.25	Proline 275 0.25 + Legend 0.75

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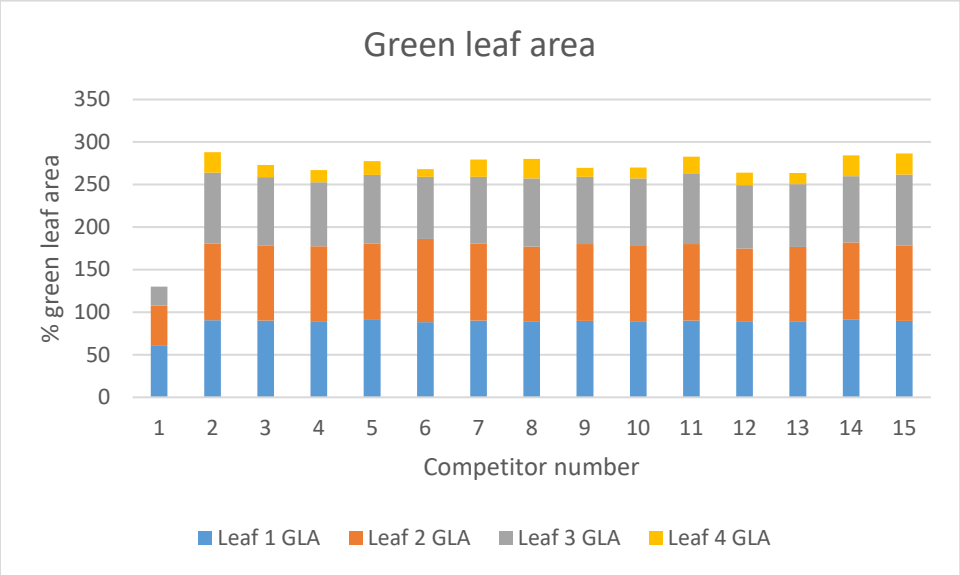
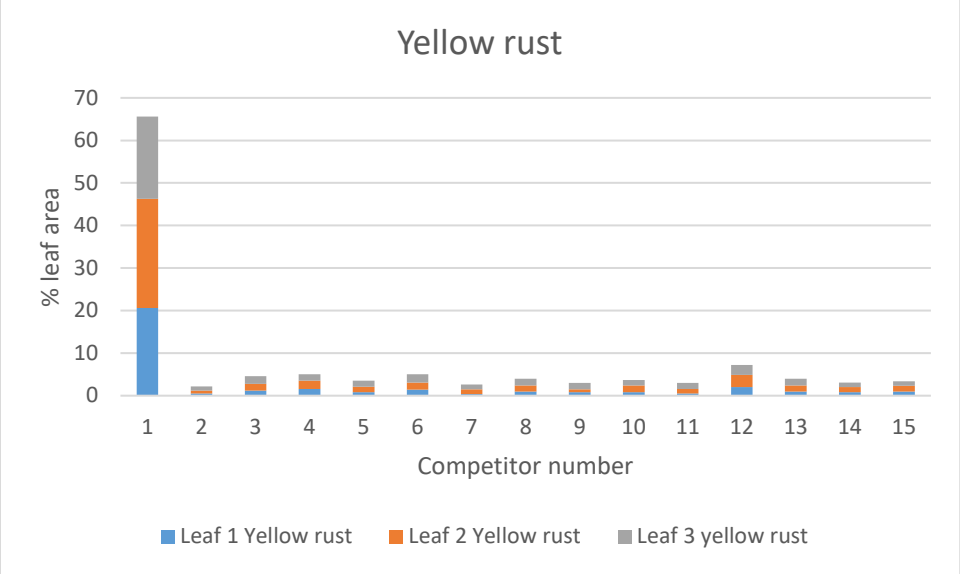
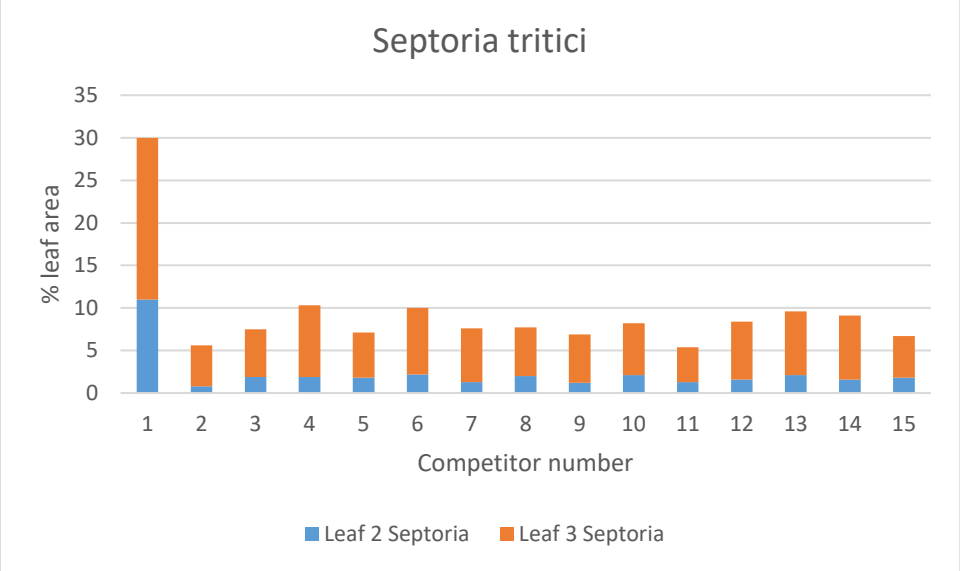

Green leaf area
% green leaf area
350
300
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Competitor number
Leaf 1 GLA
Leaf 2 GLA
Leaf 3 GLA
Leaf 4 GLA


Yellow rust
% leaf area
70
60
50
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Competitor number
Leaf 1 Yellow rust
Leaf 2 Yellow rust
Leaf 3 yellow rust


Septoria tritici
% leaf area
35
30
25
20
15
10
5
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Competitor number
Leaf 2 Septoria
Leaf 3 Septoria