Fungicide Performance in Wheat 2013

Printed material

Note that printed material contains data only up to a full label dose rate. Curves therefore appear slightly different to platform presentation slides but show the same results.
## The Sites 2013

<table>
<thead>
<tr>
<th></th>
<th>Site</th>
<th>Disease Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ADAS (Rosemaund)</td>
<td>Septoria tritici (5 spray timings)</td>
</tr>
<tr>
<td>2</td>
<td>NIABTAG (Andover)</td>
<td>Septoria tritici (double trial)</td>
</tr>
<tr>
<td>3</td>
<td>SRUC (Fife)</td>
<td>Septoria tritici (double trial)</td>
</tr>
<tr>
<td>4</td>
<td>ADAS (Terrington)</td>
<td>Yellow rust</td>
</tr>
<tr>
<td>5</td>
<td>NIABTAG (Cambridge)</td>
<td>Brown rust</td>
</tr>
<tr>
<td>6</td>
<td>SRUC (Fife)</td>
<td>Mildew</td>
</tr>
<tr>
<td>7</td>
<td>Teagasc (Carlow)</td>
<td>Septoria tritici</td>
</tr>
</tbody>
</table>

## Treatment list 2013 – Septoria tritici sites

<table>
<thead>
<tr>
<th>Product</th>
<th>Hereford</th>
<th>Fife</th>
<th>Andover</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bravo</td>
<td>Timings only</td>
<td>0.5 only</td>
<td>0.5 only</td>
<td>0.5 only</td>
</tr>
<tr>
<td>Ignite/Opus Max</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Proline</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Phoenix</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Imatrex</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Vertisan</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Aviator</td>
<td>✓ 235</td>
<td>✓ 235</td>
<td>✓ 235</td>
<td>✓ 225</td>
</tr>
<tr>
<td>Adexar</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Vertisan + Ignite</td>
<td>Rates only</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Penthiopyrad + Ignite

HGCA 08 - 2012
Full rate tested = 1.25 l/ha penthiopyrad (Vertisan) + 1.25 l/ha Ignite

HGCA 10 - 2013
Full rate tested = 1.5 l/ha penthiopyrad (Vertisan) + 1.5 l/ha Ignite

Disease data from 2013

<table>
<thead>
<tr>
<th></th>
<th>Target timing</th>
<th>S. tritici Eradicant</th>
<th>S. tritici Protectant</th>
<th>Yellow Rust</th>
<th>Brown Rust</th>
<th>Powdery Mildew</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hereford</td>
<td>GS 37</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Andover T1</td>
<td>GS32</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Andover T2</td>
<td>GS39</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fife T1</td>
<td>GS32</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fife T2</td>
<td>GS39</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>GS32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Kings Lynn</td>
<td>GS 39</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fife (mildew)</td>
<td>GS 32</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cambridge</td>
<td>GS39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Septoria Protectant 2013 (n=8)

Use Imex and vertisan only in mixture with at least one fungicide with an alternative mode of action and that has efficacy against the target pathogen.

Septoria Protectant 2012-13 (n=12)

Use Imex and vertisan only in mixture with at least one fungicide with an alternative mode of action and that has efficacy against the target pathogen.
Rusts 2013

Last season...

Yellow rust
- Yellow rust epidemics delayed by cold March in 2013.
- Still a major issue in Oakley, other susceptible varieties include: Solstice, Gallant, KWS Kielder and Viscount

Brown rust
- No new data from FP trials in 2013 (cold spring).
- Over 50% of RL varieties rated 5 or less for brown rust.
- Winter conditions will determine risk for 2014
Terrington 2013
Yellow rust
(L2 and L3 on 18 June, and L1 and L2 on 9 July)

Use Imtex and Vertisan only in mixture with at least one fungicide with an alternative mode of action and that has efficacy against the target pathogen.

Terrington 2012 / 13
Yellow rust (n=2)

Use Imtex and Vertisan only in mixture with at least one fungicide with an alternative mode of action and that has efficacy against the target pathogen.
Andover 2012
Brown rust

Use Imex and Verisan only in mixture with at least one fungicide with an alternative mode of action and that has efficacy against the target pathogen.

% Septoria tritici control with epoxiconazole
Historical trends (1995-2013): Protectant
% Septoria tritici control with prothioconazole
Historical trends (2001-2013): Protectant

Half label rate

\[ R^2 = 0.6578 \]

Full label rate

\[ R^2 = 0.4112 \]

% Septoria tritici control with epoxiconazole
Historical trends (1995-2013): Eradicant

Half label rate

\[ R^2 = 0.4914 \]

Full label rate

\[ R^2 = 0.6152 \]
% Septoria tritici control with prothioconazole
Historical trends (2001-2012): Eradicant

Opus and Proline Eradicant / curative activity
(same year span)
Key Messages

Septoria tritici
In protectant situations, half rates of the best azoles provided less than 50% control, all SDHI + azole mixes gave 91-99% control.
- Solo SDHI’s very active – but azoles and multisite partners are important to broaden activity and reduce resistance risk.
- Phoenix adds some useful protectant activity.
- CTL very effective in a protectant situation.
- Yields responses in 2013 trials were low (<0.5/ha)

Yellow rust
SDHI’s and strobilurins useful but less active than azoles.

Stewardship of SDHI fungicides

- Maximum of 2 SDHI fungicide-containing sprays. (statutory requirement)

- Always use SDHI fungicides in mixture with at least one fungicide from an alternative mode of action group which has efficacy against the target pathogen(s).

- Tank mixing 2 SDHI fungicides is not an anti-resistance strategy.
Fungicide Performance in Barley 2013

Barley FP trials 2013

<table>
<thead>
<tr>
<th>Target disease</th>
<th>Number of trials</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powdery mildew</td>
<td>1</td>
<td>SRUC</td>
</tr>
<tr>
<td>Rhynchosporium</td>
<td>2</td>
<td>SRUC, ADAS, TEAGASC</td>
</tr>
<tr>
<td>Net blotch</td>
<td>2</td>
<td>ADAS, NIAB TAG</td>
</tr>
<tr>
<td>Brown rust</td>
<td>1</td>
<td>NIAB TAG</td>
</tr>
<tr>
<td>Ramularia</td>
<td>1</td>
<td>SRUC</td>
</tr>
</tbody>
</table>
Trials summary 2013

<table>
<thead>
<tr>
<th>Site</th>
<th>Diseases assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fife</td>
<td>Rhynchosporium</td>
</tr>
<tr>
<td>Cardigan</td>
<td>Rhynchosporium</td>
</tr>
<tr>
<td>Ireland</td>
<td>Rhynchosporium</td>
</tr>
<tr>
<td>Malton N. Yorks</td>
<td>Net blotch</td>
</tr>
<tr>
<td>Fife</td>
<td>Mildew</td>
</tr>
</tbody>
</table>

Rhynchosporium Protection 2013 (n=3)

Use Intex, Zulu and Vertisan only in mixture with at least one fungicide with an alternative mode of action and that has efficacy against the target pathogen.
Rhynchosporium eradication 2013 (n – 1)

Use Imtex, Zulu and Vertisan only in mixture with at least one fungicide with an alternative mode of action and that has efficacy against the target pathogen.

Rhynchosporium over years (2011-2013) protection (n=4)

Use Imtex, Zulu and Vertisan only in mixture with at least one fungicide with an alternative mode of action and that has efficacy against the target pathogen.
Rhynchosporium over years (2011-2013) eradication (n=4)

- Use Imtex, Zulu and Vertisan only in mixture with at least one fungicide with an alternative mode of action and that has efficacy against the target pathogen.

Barley mildew 2013 (n=2)

- Use Zulu and Vertisan only in mixture with at least one fungicide with an alternative mode of action and that has efficacy against the target pathogen.
Net blotch protection 2013 (n=1)

<table>
<thead>
<tr>
<th>% Net blotch</th>
<th>Percentage of full label rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>0.0</td>
</tr>
<tr>
<td>25%</td>
<td>1.5</td>
</tr>
<tr>
<td>50%</td>
<td>3.0</td>
</tr>
<tr>
<td>75%</td>
<td>4.5</td>
</tr>
<tr>
<td>100%</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Use Imtrex, Zulu and Vertisan only in mixture with at least one fungicide with an alternative mode of action and that has efficacy against the target pathogen.

Net blotch over years (2010-2013) protection (n=4)

<table>
<thead>
<tr>
<th>Rhynchospirum %</th>
<th>Percentage of full label rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>0.0</td>
</tr>
<tr>
<td>25%</td>
<td>2.0</td>
</tr>
<tr>
<td>50%</td>
<td>4.0</td>
</tr>
<tr>
<td>75%</td>
<td>6.0</td>
</tr>
<tr>
<td>100%</td>
<td>8.0</td>
</tr>
</tbody>
</table>

Use Imtrex, Zulu and Vertisan only in mixture with at least one fungicide with an alternative mode of action and that has efficacy against the target pathogen.
Barley brown rust (2010 data)

Ramularia overyears (2010-2012) protection (n=3)

Use Imtrex, only in mixture with at least one fungicide with an alternative mode of action and that has efficacy against the target pathogen.
Conclusions

- Siltra Xpro and Adexar showed good broad spectrum activity in 2013, consistent with previous years.
- Proline still a highly effective azole on barley diseases
- Comet (strobilurin) remains effective against net blotch
- Phoenix has some activity on Rhynchosporium
- SDHIs mixes all performing well and quite closely matched
Fungicide performance in oilseed rape 2013

presented at HGCA Agronomy Workshops February / March 2014
Light leaf spot
Light leaf spot incidence, N Yorks. 2013

cv PR46W21
Light leaf spot incidence, Edinburgh 2013

![Graph showing LLS severity and yield for different treatments.](image)

- **LLS severity%**
- **Yield (t/ha)**
- Treatments: Untreated, Orius 20EW, Orius P, Proline, Prosaro, Sanction

**LSD disease = 1.3**  **LSD yield = 0.71**

**cv PR46W21**
Dose response and light leaf spot control
Sclerotinia

Treatment at flowering protects against sclerotinia
Timing is critical – no curative activity
Sclerotinia control Hereford 2012

HGCA Fungicide performance Sclerotinia control Hereford 10 July 2012

Sclerotinia index (0-100)

Untreated

0.5

1

LSD = 15.46
Large yield responses to sclerotinia control: Hereford 2012

Yield (t/ha)

- Amistar
- Compass
- Filan
- Galileo
- Proline
- Prosaro
- Tectura
- Topsis

Untreated
0.5
1
Sclerotinia control and fungicide dose

Yield response (t/ha)

Dose

0.25 0.5 0.75 1

Sclerotinia control – summary

Evaluate risk:
- previous monitoring
- history of cropping
- weather /crop microclimate

Where risk is high consider using:
- up to 75% doses of active products
- more than one application

Spray timing is critical – protectant activity 3 weeks
Thank you