HGCA Fungicide Performance in wheat 2008 - 2009
Up to 2007, sprays were applied to leaf 2.

2008 - Leaf 3 (T1) and Leaf 1 (T2).

Each leaf categorised as eradicant, protectant or mixed.
<table>
<thead>
<tr>
<th></th>
<th>Active Ingredient</th>
<th>Brand Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>epoxiconazole</td>
<td>Opus</td>
</tr>
<tr>
<td>2</td>
<td>chlorothalonil</td>
<td>Bravo</td>
</tr>
<tr>
<td>3</td>
<td>prothioconazole</td>
<td>Proline</td>
</tr>
<tr>
<td>4</td>
<td>HGCA01</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>HGCA02</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>HGCA03</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>epoxiconazole + prochloraz</td>
<td>Ennobe</td>
</tr>
<tr>
<td>8</td>
<td>epoxiconazole + metconazole</td>
<td>Brutus</td>
</tr>
</tbody>
</table>
New Product: Ennobe prochloraz + epoxiconazole

New mixture

• Full rate (1.8l/ha) gives:
  • 405g/ai of prochloraz (= 0.9l/ha Poraz)
  • 112.5g/ai of epoxiconazole (=0.9l/ha Opus)

1.9 units of azole in a full dose of Ennobe
(1.0 of Poraz, + 0.9 Opus)

Claimed anti-resistance / formulation benefits
(Prochloraz selects for V136A, and against A379G/I381V)
New Product: Brutus
metconazole + epoxiconazole

New mixture

• Full rate (3.0l/ha) gives:
  • 82.5 g/ai of metconazole (= 1.38l/ha Caramba)
  • 112.5g/ai of epoxiconazole (=0.9l/ha Opus)

1.82 units of azole in a full dose of Brutus
(0.92 of Caramba, + 0.9 Opus)
S. tritici - 2008
Protectant (all sites and timings)
S. tritici - Eradicant 2008 (All sites and timings)
S. tritici 2008 - Matched for units of azole
Protectant

% S. tritici

units of azole applied

0.45 l/ha
Ennobe
S. tritici - 2008 - Matched for units of azole Eradicant

% S. tritici

units of azole applied
Yield and disease - *S. tritici* sites
Half rates T1 and T2

<table>
<thead>
<tr>
<th></th>
<th>Flag</th>
<th>Leaf 2</th>
<th>Leaf 3</th>
<th>Yield t/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opus</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bravo</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>Ennobe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brutus</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>untreated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

% Septoria triatic
$S. \text{ tritici}$ (2006-08 mean)

**Protectant**
- Opus
- Bravo
- Proline

**Eradicant**
- Opus
- Bravo
- Proline

The graph shows the percentage of $S. \text{ tritici}$ over different dose levels (proportion of label rate) for each of the protectant and eradicant treatments. The x-axis represents the dose (proportion of label rate), and the y-axis represents the percentage of $S. \text{ tritici}$. The graph includes data points and lines for each treatment, illustrating the effectiveness of each product at different dose levels.
S. tritici 2004-07

eradicant

Protectant

Proline
Folicur
Prosaro

Dose (proportion of label rate)

% S. tritici
S. tritici 2004-07 – Balanced azole loading
(Prosaro 135% azole)

eradicant protectant

Proline
Folicur
Prosaro

Proline
Folicur
Prosaro

Units of triazole

Units of triazole
Key Messages for *S. tritici*

Product efficacy similar at T1 and T2 timings. Proline and Opus still providing good levels of eradicant and protectant activity.

Ennobe and Brutus had the highest level of control, - appears to be not just due to a.i. loading. Bravo – still very effective as a *S. tritici* protectant.
<table>
<thead>
<tr>
<th>Disease</th>
<th>Location</th>
<th>Variety</th>
<th>Fungicide Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown Rust</td>
<td>TAG Bedfordshire</td>
<td>Alchemy</td>
<td>Dose response at T2 (flag leaf emerged, GS37-39)</td>
</tr>
<tr>
<td>Yellow Rust</td>
<td>ADAS Norfolk</td>
<td>Robigus</td>
<td>Half dose at T1 (leaf 3, GS32)</td>
</tr>
<tr>
<td>Mildew</td>
<td>SAC Fife</td>
<td>Claire</td>
<td>Half dose T1 – T2 sequence</td>
</tr>
</tbody>
</table>
Fungicides included in brown or yellow rust trials

<table>
<thead>
<tr>
<th></th>
<th>Fungicide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brutus</td>
<td>epoxiconazole + metconazole</td>
</tr>
<tr>
<td>Comet200</td>
<td>pyraclostrobin</td>
</tr>
<tr>
<td>Firefly</td>
<td>prothioconazole + fluoxastrobib</td>
</tr>
<tr>
<td>Opus</td>
<td>epoxiconazole</td>
</tr>
<tr>
<td>Proline</td>
<td>prothioconazole</td>
</tr>
<tr>
<td>Tracker</td>
<td>epoxiconazole + boscalid</td>
</tr>
</tbody>
</table>

**Previous Years**

<table>
<thead>
<tr>
<th></th>
<th>Fungicide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amistar</td>
<td>azoxystrobin</td>
</tr>
<tr>
<td>Fandango</td>
<td>prothioconazole + fluoxastrobib</td>
</tr>
<tr>
<td>Folicur</td>
<td>tebuconazole</td>
</tr>
</tbody>
</table>
Brown rust 2008

Mean of leaves 2 & 3, on 1 July

Dose (proportion of label rate)

% Brown rust

Opus
Proline
Brutus
FireFly
Tracker

Mean of leaves 2 & 3, on 1 July
Brown rust 2004-2006

Dose (proportion of label rate)

% Brown rust

Opus
Proline
Tracker
Amistar
Fandango
Comet
Yellow rust 2004-2008

% Yellow rust

Dose (proportion of label rate)

Yellow rust 2004-

Dose (proportion of label rate)

Opus

Proline

Tracker

Amistar

Comet

Fandango
Yellow rust 2007

% Yellow rust

Dose (proportion of label rate)

Dose (proportion of label rate)
### Fungicides included in mildew trials

<table>
<thead>
<tr>
<th></th>
<th>Fungicide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyflamid</td>
<td>cyflufenamid</td>
</tr>
<tr>
<td>Flexity</td>
<td>metrafenone</td>
</tr>
<tr>
<td>Proline</td>
<td>prothioconazole</td>
</tr>
<tr>
<td>Talius</td>
<td>proquinazid</td>
</tr>
<tr>
<td>Tern</td>
<td>fenpropidin</td>
</tr>
<tr>
<td><strong>Previous Years</strong></td>
<td></td>
</tr>
<tr>
<td>Fortress</td>
<td>quinoxyfen</td>
</tr>
<tr>
<td>Opus</td>
<td>epoxiconazole</td>
</tr>
<tr>
<td>Torch Extra</td>
<td>spiroxamine</td>
</tr>
<tr>
<td>Unix</td>
<td>cyprodinil</td>
</tr>
</tbody>
</table>
Powdery mildew 2004-2008

% Mildew

Dose

Dose

Dose

Dose
Key messages for rusts & mildew

Opus giving better brown rust control than Proline, but mixture with fluoxastrobin (as Firefly or Fandango) highly effective

Yellow rust protection often similar for both triazoles, but control differences can be significant where the disease is very active

Boscalid (in Tracker) and fluoxastrobin (in Fandango or Firefly) improving yellow rust control compared to the triazole alone

Flexity, Talius and Cyflamid more reliable and effective than Fortress now for wheat mildew

Proline still showing useful mildew activity (Opus less effective)
Acknowledgements