Gowan and future developments with Zoxamide in Potato

John Edmonds, Technical Manager, Zoxamide
EuroBlight 5th May 2010
Agenda

- Gowan Company – some information
- Zoxamide mode of action (a reminder)
- Positioning of Zoxamide products for 2010 in PLB strategies
- Future new Zoxamide products for Potato
- Other areas of Zoxamide research in 2010 / 2011
• Gowan Company is a family owned US seeds, fertiliser and pesticide company, founded in 1963 in Yuma, Arizona

• Gowan acquire proprietary molecules and registrations (and support the products with their own dossiers)

• Gowan uses a strategy based on molecule acquisition combined with worldwide defence and re-development

• Gowan purchased the global rights and data for Zoxamide and all products containing Zoxamide (e.g. Electis / Aderio / Unikat Pro and Unikat) from Dow AgroSciences in Summer 2008.
Gowan in the World

> €350 millions (sales)
> 600 employees
Gowan: Historical Sales

USD 000s

Retail Group  Gowan Milling & Desert Depot  Marketing Group  Sariaf-Gowan  Mexico

Zoxamide – mode of action (a reminder)

• Zoxamide acts within the nucleus to stop cell division by irreversibly binding to \textit{beta}-tubulin
  – Zoxamide disrupts the formation of the microtubules and inhibits nuclear division
  – Zoxamide acts where mitosis occurs

• Zoxamide inhibits germ tube elongation and zoospore development within sporangia

• Zoxamide has no activity on fully developed zoospores
Zoxamide – mode of action

untreated

Zoxamide treated
Zoxamide – mode of action

Control

Zoxamide
Zoxamide Developments in 2009 - 2011

- Position Zoxamide (Electis/Aderio/Unikat Pro) towards the end of mid season sprays
  - Zoxamide stops zoospore development in sporangia
  - Zoxamide has no activity on released zoospores

- Alternaria – currently registered in France and Poland
  - Plan to use historical Dow / Rohm & Haas data plus new trials in 2010 to add Alternaria registration to product labels in The Netherlands, Germany, UK plus Nordic/Baltic countries (where zonal registration will allow!)

- Zoxamide – Pink Rot control in Potato at planting
  - 2009 trial in The Netherlands showed very encouraging data and control of pink rot from a single application in furrow at planting
  - Repeat in 2010 and evaluate potential for registration trials in 2011
Zoxamide Developments in 2009 to 2011

• Zoxamide development with two new potato blight products

  – GWN-9963
    • Non mancozeb product
    • Use rate likely to be 1 litre/ha
    • Protectant / translaminar product
    • Potentially on market in 2013

  – GWN-9964
    • Non mancozeb product
    • Potentially on market in 2012
    • Possibility it will be tank-mixed with protectant fungicide
      (e.g. mancozeb, fluazinam or cyazofamid etc.)
Zoxamide Developments

• Electis new registration in Onion
  – Trials in 2010 / 2011 to add registration in Onion for Downy Mildew / *Peronospora* disease control

• Electis – Tomato
  – To generate data in 2010 / 2011 to support registrations for early/late blight control in S EU zone countries where Electis is not currently registered in Tomato
Downy Mildew – Onion, NL
Downy Mildew – Onion, NL

Percentage of green foliage over time for different treatments:
- Unt
- Acrobat M 2 kg
- Electis 1.8 kg
- Electis 2.5 kg

Dates:
- 05/08/2009
- 11/08/2009
Downy Mildew – Onions, UK

- **Total Yield T/Ha**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield (T/Ha)</th>
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<tbody>
<tr>
<td>Unt</td>
<td>34.5</td>
</tr>
<tr>
<td>Acrobat M 2 kg</td>
<td>37.3</td>
</tr>
<tr>
<td>Electis 1.8 kg</td>
<td>43.8</td>
</tr>
<tr>
<td>Electis 2.5 kg</td>
<td>45.6</td>
</tr>
</tbody>
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Thank you for your attention