Testing fungicides for effectiveness against leaf blight using harmonised protocol in 2006

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Procedure until 2005

- The ratings were based on the consensus of experience of scientists in countries participating. Data and experiences of different sources were taken into account:
  - Independent trial data
  - Data from agrochemical companies
  - Practical experiences & commercial use

- Inclusion in provisional table is mainly based on data generated by agrochemical companies (pre-registration)

- Transfer from provisional table to Workshop-table is mainly based on independent trial data and practical experiences in farmers fields
<table>
<thead>
<tr>
<th>Product name</th>
<th>Active Ingredient(s)</th>
<th>Effectiveness</th>
<th>Action mode</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>leaf/Point/blight</td>
<td>curative/protectant</td>
</tr>
<tr>
<td>Tattoo C</td>
<td>propamocarb-HCl+chlorothalonil</td>
<td>++(+) (+) + ++</td>
<td>++(+) ++ ++ +++</td>
</tr>
<tr>
<td>Shirlan</td>
<td>Fluazinam</td>
<td>+++ ? + ++(+)</td>
<td>+++ 0 0 ++(+)</td>
</tr>
<tr>
<td>Curzate M</td>
<td>Cymoxanil+Mancozeb</td>
<td>++(+) ? +(+) 0</td>
<td>++ ++ + ++</td>
</tr>
<tr>
<td>Valbon</td>
<td>bentiavalicarb+Mancozeb</td>
<td>+++ ? +(+) +(+)</td>
<td>+++ +(+) + ++</td>
</tr>
<tr>
<td>Dithane</td>
<td>Mancozeb</td>
<td>++ ? + 0</td>
<td>++ 0 0 ++(+)</td>
</tr>
<tr>
<td>Acrobat</td>
<td>Dimethomorph+Mancozeb</td>
<td>++(+) ? +(+) ++</td>
<td>++(+) + ++ ++(+)</td>
</tr>
<tr>
<td>Ridomil</td>
<td>Metalaxyl+Mancozeb</td>
<td>+++ ++ ++ N/A</td>
<td>++(+) ++(+) ++(+) +++</td>
</tr>
<tr>
<td>Ranman</td>
<td>Cyazofamid</td>
<td>+++ ? + +++</td>
<td>+++ 0 0 +++</td>
</tr>
<tr>
<td>Tanos</td>
<td>Farnoxadone+cymoxanil</td>
<td>++ ? +(+) N/A</td>
<td>++ ++ + ++(+)</td>
</tr>
<tr>
<td>Sereno</td>
<td>Fenamidone+mancozeb</td>
<td>++(+) ? +(+) ++</td>
<td>++(+) 0 +(+) ++</td>
</tr>
<tr>
<td>Unikat/Electis</td>
<td>Zoxamide+mancozeb</td>
<td>+++ ? + ++</td>
<td>+++ 0 0 ++(+)</td>
</tr>
<tr>
<td>Copper</td>
<td>Chlorothalonil</td>
<td>++ ? +(+) 0</td>
<td>++ 0 0 ++(+)</td>
</tr>
<tr>
<td>Bravo</td>
<td>Chlorothalonil</td>
<td>++ ? +(+) 0</td>
<td>++ 0 0 ++(+)</td>
</tr>
</tbody>
</table>
Proposed procedure after 2006

- Harmonised protocol for each of characteristics
- Spring 2006 a harmonised protocol for “Effectiveness to leaf blight” was agreed upon
- In 2006 3 field trials were carried out according to this protocol in UK, DK & NL
- Results will be presented and discussed in next Workshop in Bologna (I) in May 2007
Harmonised protocol for leaf blight

- Susceptible local ware variety
- Spreader rows
- Artificial inoculation early in the season
- Spray frequency every 7 days until desiccation
- Highest preventative dose rate in EU
- Assessment of leaf (and stem) blight
- 6 successful trials (2 seasons x 3 trials)
Results NL 2006

Efficacy of fungicides against late blight (Netherlands)

Date

Percentage infected leaf area

4 August 9 August 18 August 24 August 30 August 7 September 14 September

untreated  Shirlan  Exp 1  Dithane NT
Unikat Pro  Acrobat DF  Exp 2  Valbon
Ranman  Tattoo C  Sereno  Exp 3
Exp 4

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Results DK 2006

Efficacy of fungicides against late blight (Danmark)

- untreated
- Tattoo M
- Tattoo C
- Sereno
- Tyfon (Consento)
- Dithane
- Electis (Unikat Pro)
- Infinito
- Ranman
- Shirlan
- Mandipropamid
- Acrobat
- Valbon

Percentage infected leaf area

Date:
- 3 August
- 11 August
- 16 August
- 22 August
- 25 August
- 29 August
- 1 September
- 5 September
- 7 September
- 13 September
- 20 September
- 27 September
Efficacy of fungicides against late blight (United Kingdom)

- untreated
- Merlin (Tattoo C)
- Sonata (Sereno)
- Consento
- Infinito
- Dithane
- Electis (Unikat Pro)
- Ranman
- Shirlan
- Mandipropamid
- Invader (Acrobat)
- Valbon

**Results UK 2006**

Percentage infected leaf area over time from 18 August to 24 September.
Transformation of data

Proposal is to use method developed in Eucablight to estimate 1-9 scale values that indicate resistance

- Calculate rAUDPC from primary disease data
- Fix score values for 6 standard varieties
- Linear or quadratic regression
- Determine value of “unknown” varieties with regression line

Proposal for fungicide ratings

- Same procedure as for varieties
- Fix ratings for “reasonable” and “very good” fungicide
- Determine rating of “unknown” fungicide with regression line
**Figure 3.** Disease progress curves for Eucablilght standards Trial: 2005_DK_05_01
Figure 5. Quadratic regression for Eucabligh standards Trial: 2005_DK_05_01.
Figure 6. Estimated 1-9 scale values for dataset 2005_DK_05_01. Bars = Linear models A and B and Diamonds = quadratic model.
Thank you for your attention