Efficacy of different fungicides on the control of early blight

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early blight - a challenge for potato cultivation?!

- Increasing importance of early blight in Germany and also in other European countries
- Significant yield losses; up to 30% and more
- Application of fungicides most efficient for disease control
- Monitoring documents widespread pathogen occurrence

„The fear of Alternaria!“
Top Agrar 6/2008

„Alternaria – a problem in potatoes?“
Top Agrar 12/2005
Early blight - review 2008

Disease rating: 31 August, 2008

- No disease infestation
- Low disease
- Moderate disease
- High disease

Source: www.krautfaeule.de
early blight - a complex disease

- weather conditions
- environment
- variety
- disease progress
  - fungicide use
  - active ingredient
  - fungicide concentration
  - plant age
  - fertilisation
  - pathogen
Field trials with different active ingredients

potato variety: Kuras
repitation: 2007 and 2008

Coverspray (weekly): Ranman (0,2 +0,15 l/ha)
specific treatments against early blight:
3 times, according to weather conditions and disease progress

Ranman (early blight control)
Mancozeb 1350 g/ha and application
Chlorthalonil 1000 g/ha
Fenamidone 200 g/ha
Pyraclostrobin + Boscalid 16,75 +66,7 g/ha (Signum)
Azoxystrobin 125 g/ha (Ortiva)
Kresoxim-methyl
Trifloxystrobin
Pyraclostrobin 125 g/ha
Does the fungicide treatment influence the occurrence of Alternaria species (*Alternaria solani, Alternaria alternata*)?

- Sampling of infected leaflets
- 20 leaflets/replication
- 2x/season
- Incubation for three days
- Morphological analysis
further investigations on Alternaria species

morphological analysis of infected leaf samples

Early blight control
Mancozeb  Chlorthalonil  Fenamidon  Kresoxim-Methyl  Trifloxystrobin  Pyraclostrobin  Pyraclostrobin methyl  Azoxystrobin  +Boscalid

A. solani ✓

A. alternata ✓
further investigations on Alternaria species

morphological analysis of infected leaf samples

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<thead>
<tr>
<th>Early blight control</th>
<th>Mancozeb</th>
<th>Chlorthalonil</th>
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<th>Kresoxim-Methyl</th>
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</thead>
<tbody>
<tr>
<td>A. solani</td>
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<td>A. alternata</td>
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conclusion

- different efficacy of active ingredients in field trials
- insufficient control results in significant yield losses
- complex of the two pathogens *A. solani* and *A. alternata* in the field
- specific rating of fungicides against *A. solani* and *A. alternata* under controlled conditions (artificial inoculation)
- harmonised protocol useful for fungicide test against early blight in field
Thanks for your attention!