POTATO / CONTROL OF LATE BLIGHT
EVALUATION OF THE FUNGICIDE PROGRAMS WITH RIDOMIL GOLD AND REVUS


Trial ID                Variety    Location     Experimental starting and completion
F-06-307-05            Bintje     Jokioinen    May 22nd and October 31st 2005

Purpose of trials: Studying the biological efficacy of the fungicides Ridomil Gold and Revus against potato late blight (Phytophthora infestans) as foliar applications.

SUMMARY

The efficacy of the fungicides Ridomil Gold (mancozeb 64 g/kg and metalaxyl-M 4 g/kg) and Revus (mandipropamid 250 g/l) against potato late blight was evaluated in one field trial at MTT Agrifood Research Finland in 2006. Both fungicides were tested in a program with Shirlan (fluatzinam 500 g/l). The application interval was 7 days in the evaluated fungicide programs as well as in the standard program with Shirlan.

The growing season 2006 was exceptionally warm and dry in whole Finland and also in Jokioinen. No late blight was observed in the trial field in the normal time of the late blight epidemics in July or in August. The last week of August was relatively rainy and leaf blight started to spread in the untreated plots. The fungicide trial was situated on a field with relatively good crop rotation and first blight symptoms appeared into the untreated infection rows after 5th of September, when experimental plots already had been treated with Reglone. There was almost 30 % tuber blight in the untreated plots, while the fungicide treatments reduced the tuber blight to 12-19% (see figure 2). The lowest tuber blight percentage was in the plots with Revus and Ridomil Gold programs.

Total tuber yield was highest in the Ridomil Gold program, 38.7 t/ha. The marketable yield (healthy tubers in size 35-70 mm) was significantly increased with Ridomil Gold program compared to the untreated plots (figure 1).

Figure 1. The fungicide programs increased the marketable potato yield.

Figure 2. The fungicide programs decreased the amount of tuber blight in yield.
### EVALUATION OF FUNGICIDE PROGRAMS AGAINST POTATO LATE BLIGHT

Trial ID: F-06-307-05  
Location: Jokioinen  
Study Director: Asko Hannukkala  
Investigator: Peppi Laine

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Replications: 4, Untreated treatments: 1, Conduct under GLP/GEP: Yes (GEP with audit trail), Design: Randomized Complete Block, Treatment units: Treated plot size, Dry Form. Unit: g/kg, Treated plot size Width: 2.4 meters, Treated plot size Length: 8 meters, Application volume: 300 l/ha, Mix size: 5 liters, Format definitions: G-All7.DEF, G-All7.FRM
MTT Agrifood Research Finland

EVALUATION OF FUNGICIDE PROGRAMS AGAINST POTATO LATE BLIGHT

Trial ID: F-06-307-05          Study Director: Asko Hannukkala
Location: Jokioinen          Investigator: Peppi Laine

General Trial Information
Study Director: Asko Hannukkala           Title: Research Scientist
Affiliation: MTT Agrifood Research Finland
Postal Code: FI-31600          E-mail: asko.hannukkala@mtt.fi
Investigator: Peppi Laine           Title: Research Scientist
E-mail: peppi.laine@mtt.fi

Trial Location
City: Jokioinen         Trial Status: ONE-YEAR/FINAL
Postal Code: FI-31600

Planned Completion Date: 15/12/2006
E-Longitude of LL Corner °: 23.460860 N-Latitude of LL Corner °: 60.853630
Directions:

Conducted Under GEP: X

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<td>2. PP 1/152(2)</td>
<td>Design and analysis of efficacy evaluation trials</td>
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<td>3. PP 1/181(2)</td>
<td>Conduct and reporting of efficacy evaluation trials</td>
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Objectives:
Studying the biological efficacy of different fungicide programs against potato late blight

Conclusions:

Cooperator/Landowner
Cooperator: MTT
Address 1: 31600 Jokioinen

Crop Description
Crop 1: SOLTU Solanum tuberosum Potato
 Variety: Bintje          Description: 0986-538084
BBCH Scale: BPOT Planting Date: 22/05/2006
Planting Method: transplanted-machine
Depth, Unit: 5 cm
Row Spacing, Unit: 80 cm Spacing Within Row, Unit: 26 cm
Seed Bed: fine
Soil Moisture: damp

Pest Description
Pest 1 Type: D Code: PHYTIN Phytophthora infestans
Common Name: Late blight of potato

Site and Design
Plot Width, Unit: 2.4 M Site Type: field
Plot Length, Unit: 8 M Tillage Type: rotary-tillage
Replications: 4 Study Design: Randomized Complete Block

Trial Initiation Comments:
## MTT Agrifood Research Finland

### Site Description

#### Maintenance

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**Field Prep./Maintenance:**
Ploughed in autumn 2005.

**Soil Description**
- **Texture:** sand
- **pH:** 5.97

**Moisture Conditions**
- **Closest Weather Station:** Jokioinen
- **Distance:** 4.88 km

#### Application Description

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**F**

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### Pest Stage At Each Application

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### Application Equipment

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### EVALUATION OF FUNGICIDE PROGRAMS AGAINST POTATO LATE BLIGHT

**Trial ID:** F-06-307-05  
**Study Director:** Asko Hannukkala  
**Location:** Jokioinen  
**Investigator:** Peppi Laine

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**Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)**

**Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.**

**Column 1 Footnote:** Havainnot tehty myös 17.7.-30.8. välisenä aikana 2-3 kertaa viikossa, mutta ruttoa ei ole löytynyt

**Column 4:** TY6 = 520.8333*[C10]

**Column 5:** T7 = [C7]/[@SUM([C7],[C9])]*100

**Column 6:** T8 = [C8]/[@SUM([C7],[C9])]*100

**Column 7:** T9 = [C9]/[@SUM([C7],[C9])]*100

**Column 8:** T4 = [C21]/[@SUM([C7],[C9])]*100

**Column 9:** T13 = [C22]/[@SUM([C7],[C9])]*100

**LSD (P=.05)**

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</tbody>
</table>

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)