BANJO FORTE: A Unique Solution for Potato Late Blight

Olaf Van Campen, Yair Jackson & Daphna Blachinsky

Jerusalem, Israel. 17-21 November, 2013
MAI: On our Way to Innovation

2011 Agrochemical Sales, $ Billion

Large Scale RBC

Off patent

Source: MAI Analysis
Opportunity: A Broad Product Portfolio

What can be achieved with a broad product portfolio?

RBC's Active Ingredient: By Phillips McDougal
What is Banjo Forte?

Fluazinam 200

FRAC Group: C5, uncoupler of oxidative phosphorylation contact

Dimethomorph 200

FRAC Group: H5, cellulose synthase inhibition, Local systemic / Translaminar
Banjo Forte has good activity on blight zoospores to prevent tuber infection.

Banjo Forte Activity on zoospores

Banjo Forte Prevents zoospores penetrating the leaf
Why Banjo Forte?

Perfectly Complementary Actives

- Local systemic + very effective contact
- Fit Resistance Management
- Fit perfectly the middle application timing

Prevents …

- Leaf late blight
- Tuber blight control
- Sclerotinia sclerotiorum
- Powdery scab
Registrations Since 2012

Biggest potato growing countries
Evolution: Banjo Forte & Potato Market

- **2007**: Idea for mixture
- **2008-2011**: Formulation development & registration
- **2012**: First Banjo Forte Launch in Germany
- **2013 - 2015**: Banjo Forte European Launch

New products continue to be introduced in the market.
Fluazinam Use in Potatoes

Green33
a genotype, resistant to Fluazinam

2009
Founded in the Netherlands

2010
Population increased

2011
Stabilized and spread

Fluazinam Volume in Potatoes, West Europe

Since 2007 Fluazinam sales in Europe dropped dramatically

*Data obtained from Sigma 2012
Netherlands: 120M €
Europe: 900M €
Green 33: Key Facts

How did it happen?
- Use of Fluazinam straight
- Reduced rates
- Block spraying strategy

Who is Green 33?
- Extremely violent
- Quick cycle (3-4 days)

But…
- Low fitness to environmental conditions
- Very sensitive to CAA fungicides
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**Until 2007**
- Fluazinam a leading product
- Sales growth

**2009**
- Green 33 detected & spreading

**Since 2008**
- Fluazinam use drops dramatically

New products continue to be introduced in the market.
Banjo Forte: Effect on LB isolates 2013*

- Banjo Forte controls well all major genotypes
- Banjo Forte is very effective against genotype Green 33

*Pot Trial, Huub Schepers, PPO
Sclerotinia raising in potatoes

Fluazinam
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**Until 2007**
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- **Since 2010**
  - Fluazinam use drops dramatically
  - Sclerotinia in potatoes rising

New products continue to be introduced in the market
Banjo Forte Effect on S. sclerotiorum in Potato, 2013

**Sclerotinia severity**

<table>
<thead>
<tr>
<th>Severity (%)</th>
<th>Untreated</th>
<th>Flupicolid + Propamocarb</th>
<th>Fluazinam</th>
<th>Banjo Forte</th>
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<tbody>
<tr>
<td></td>
<td>c</td>
<td>b</td>
<td>ab</td>
<td>a</td>
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**Fungicide**

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>Sclerotinia Severity</th>
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<tbody>
<tr>
<td>Untreated</td>
<td>69.6</td>
</tr>
<tr>
<td>Flupicolid + Propamocarb</td>
<td>49.7</td>
</tr>
<tr>
<td>Fluazinam</td>
<td>42.0</td>
</tr>
<tr>
<td>BANJO FORTE</td>
<td>34.6</td>
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*Pot Trial, Huub Schepers, PPO*
Powdery Scab: MA-Israel, 2013

Synergy value = 1.6

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<th>DMM</th>
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Banjo Forte Summary

- Excellent late blight prevention
- Very good tuber blight control

Fits Resistance Management strategy

- Reduces *Sclerotinia* and powdery scab damage
Banjo Forte: The Future

More Countries, Crops & Disease Prevention
MAI: On our Way to Innovation

INNOVATION = RESPONSE TO THE MARKET!
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