Present situation and prospective of apple scab control in Italy

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Cultivated area and production of apple in Italy

<table>
<thead>
<tr>
<th>Europe 2013 (Tonnes)</th>
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<tbody>
<tr>
<td>Poland</td>
<td>≈ 3,000,000</td>
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<tr>
<td><strong>Italy</strong></td>
<td>≈ 2,000,000</td>
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<tr>
<td>France</td>
<td>≈ 1,500,000</td>
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<tr>
<td>Germany</td>
<td>≈ 1,000,000</td>
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<tr>
<td>Hungary</td>
<td>≈ 500,000</td>
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</tbody>
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Main cultivars
Golden Delicious (50%), Gala (15%), Red Delicious (10%), Fuji (7.5%), Granny Smith (6.5%), Braeburn (4%), Pink Lady, Cripps Pink (3.5%), Imperatore/Morgen Duft (2.5%)
Apple scab control in Italy

**THE MOST IMPORTANT APPLE DISEASE**

- High susceptibility of the main cultivars (as Gala, Golden, Pink Lady)
- Spring weather conditions particularly favourable to primary and secondary infections
- Control based on use of chemical fungicides
- About 15 treatments/year

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Recent evolution of apple scab control in Italy

Improvement of the disease control in the late ‘90 thanks to new fungicides:

- 1996: substitution of the old triazoles (as bitertanol, myclobutanil, penconazole) with difenoconazole (better curative partner for contact fungicides)
- 1996-1997: introduction of pyrimethanil and cyprodinil (good preventative activity also at low temperatures)
- 1997: kresoxim-methyl
- 2002: trifloxystrobin  
  Good preventative and long lasting activity up to ten days
Changing situation since the early 2000s

- Occurrence of control failures with schedules based on strobilurins and anylopirimidines: suspected activity reduction
- Monitoring and confirmation of the presence of resistance:
  - in many areas to strobilurins
  - in few cases to anylopirimidines
- General trend to the reduction of these new products, mainly strobilurins
- Increasing interest for the old contact fungicides

Present situation in apple scab control in Italy

1. Choice of fungicides

- Wide use of most persistent preventative fungicides (mainly dithianon and captan, secondly fluazinam and dithiocarbamates)
- Scarce use of strobilurins
- Reduced use of anylopirimidines
- Wide use of difenoconazole in mixture with contact fungicides for curative applications
- Interest for alternative products:
  - new SDHIs (i.e. fluopyram, penthiopyrad, fluxapyroxad)
  - old natural compounds: copper, lime sulphur, sulphur, K bicarbonate
Present situation in apple scab control in Italy

2. Application timing of fungicides

- Widespread interest for preventative treatments
  - Weather forecasting
  - Disease forecasting models (RIM Pro, A Scab)
- Curative applications not scheduled but only in critical situations (i.e. prolonged wetness, high inoculum amount)
- Interest in some areas for “during infection” sprays with lime sulphur

Aim of Action B1.3
Innovative control strategies against Venturia inaequalis

Verify and/or optimized alternative strategies for control apple scab based on natural substances: copper, sulphur, lime sulphur, K bicarbonate and BCA

To achieve this objective

- Use only inorganic products against primary and secondary infections
- Use synthetic products on primary infections and inorganic compounds or BCA on secondary infections
- Sanitation treatments after leaf fall with urea or BCA or synthetic products