Technical information

**Target pest**
Cydia pomonella, common name: codling moth
Grapholita molesta, syn. Cydia molesta, Laspeyresia molesta; common name: Oriental fruit moth

**Crops**
Stone fruit, pome fruit and walnut

**Formulation**
Suspension concentrate containing $> 3 \times 10^{13}$ OB (occlusion bodies) of Cydia pomonella granulovirus per liter.

**Standard dosage**
100 ml/ha

**Timing**
At hatching of first larvae. Acts by ingestion.

**Water volume**
200 – 1600 l/ha. This should be adjusted according to leaf area index and spraying equipment.

**Standard interval between sprays**
Repeat after 8 days of full sunshine. This can be modified depending on the specific pest control strategy.

**Pre-harvest and re-entry interval (PHI, REI)**
Leaves no residues. PHI and REI are defined according to national registration regulations.

**Toxicity profile**
No maximum residue levels (MRLs) are defined. Contains no chemical ingredients and leaves no residues on the crop. Complies with organic farming. No side effects on non-target organisms.

**Compatibility**
Compatible with most insecticides, fungicides and fertilizers. A pH level between 5 and 8.5 in the tank mix has to be respected.

**Storage**
Storage stability: > 2 years at −18 °C, 2 years at 5 °C, 3 months at 20 °C. Avoid temperatures above 40 °C.

**Rainfastness**
Good rain resistance 3 to 4 hours after spraying.
Field trials from 2010 – 2012
In accordance to EPPO guidelines and GEP standard

![Map with red, blue, and green dots indicating areas covered by trials](image)

Average efficacy level

<table>
<thead>
<tr>
<th>MADEX® TWIN on</th>
<th>OfM in peach/nectarine</th>
<th>OfM + CM in apple/pear</th>
<th>CM in apple/pear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoot strike reduction</td>
<td>62%¹</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Total fruit damage reduction</td>
<td>67%¹</td>
<td>69%²</td>
<td>68%³</td>
</tr>
<tr>
<td>Deep damage reduction</td>
<td>81%⁴</td>
<td>97%⁵</td>
<td>85%⁶</td>
</tr>
</tbody>
</table>

CM = Codling moth
OFM = Oriental fruit moth

Example: Control of Cydia pomonella in apple, Italy 2011

![Chart showing efficacy](image)

### Example: Control of Cydia pomonella in apple, Italy 2011

- **MADEX®**
  - Deep + superficial damage: 0.5 A
  - Deep damage: 0.25 a
  - Efficacy on total damage: 94.2%

- **MADEX® TWIN**
  - Deep + superficial damage: 0.6 A
  - Deep damage: 0.25 a
  - Efficacy on total damage: 91.3%

- **Rynaxypyr (Coragen)**
  - Deep + superficial damage: 0.4 A
  - Deep damage: 0.17 a
  - Efficacy on total damage: 95.3%

- **Untreated control**
  - Deep + superficial damage: 8.7 C
  - Deep damage: 7.17 b

<table>
<thead>
<tr>
<th>Interval (days)</th>
<th>Nr. of appl.</th>
<th>Timing</th>
<th>Variety</th>
<th>GEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>MADEX® 100 ml</td>
<td>8</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MADEX® TWIN 100 ml</td>
<td>8</td>
<td>4</td>
<td>G1</td>
<td>yes</td>
</tr>
<tr>
<td>Rynaxypyr (Coragen)</td>
<td>15</td>
<td>2</td>
<td>Fuji</td>
<td></td>
</tr>
</tbody>
</table>

¹ Trials with up to 50% damage in untreated control (UTC) ² Trials with up to 15% damage in UTC ³ Trials with up to 30% damage in UTC ⁴ Trials with up to 100% damage in UTC ⁵ Trials with 11% damage in UTC
Example: Control of Grapholita molesta in peach, Slovakia 2010

<table>
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<tr>
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<th>Nr. of appl.</th>
<th>Timing</th>
<th>Variety</th>
<th>GEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>MADEX® TWIN 100 ml</td>
<td>9 – 18</td>
<td>G1 to harvest</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Calypso 480 SC</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Untreated control</td>
<td></td>
<td></td>
<td></td>
<td>5.5 A</td>
</tr>
</tbody>
</table>

Damage of fruits before harvest [%] 0 1 2 3 4 5 6

Stopped damage [%] 1.3 a 1.3 B 1.4 B 1.5 a 5.5 A
Active damage [%] 77.3% 75%
Efficacy on active damage [%] 1.3 a 1.3 B 1.4 B 1.5 a 5.5 A

MADEX® TWIN Swiss quality

Madex® Twin is produced by Andermatt Biocontrol in Switzerland. The company Andermatt Biocontrol is certified according to ISO 9001:2008.

Andermatt Biocontrol is committed to highest quality of its products. Every produced batch of Madex® Twin undergoes a systematic bioassay process. The virulence of each batch is tested on the target pests towards the standard reference batch within Andermatt Biocontrol laboratories. Only batches that fulfill the high quality standard criteria will be released into the market.

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