24 years of mating disruption application on grape for *L. botrana* and *E. ambiguella* control

MEZZACORONA GROUP EXPERIENCE

Feeding Europe with fewer pesticides
European Parliament – Brussels - 4 November 2014

Mauro Varner
Luisa Mattedi

Mezzacorona S.C.A.
Fondazione E. Mach
The winery of Mezzocorona was founded on 1904
MEZZACORONA GROUP IN ITALY

3000 ha in Trentino
2.500 ha grape – 500 ha apple

300 ha in South Tyrol

1000 ha in Sicily
700 ha grape
**MEZZACORONA: 2.800 ha – 1.600 associated farmers**

Average surface/farm = 1,7 ha

<table>
<thead>
<tr>
<th>Grape Surface</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 2 ha</td>
<td>77,8 %</td>
</tr>
<tr>
<td>from 2 to 5 ha</td>
<td>17 %</td>
</tr>
<tr>
<td>from 5 to 10 ha</td>
<td>4,2 %</td>
</tr>
<tr>
<td>more than 10 ha</td>
<td>1 %</td>
</tr>
</tbody>
</table>
FROM 1991 TO 2014
MATING DISRUPTION ON GRAPE
in Trentino there are 10,000 hectares of grape

from 2003, MD is applied on ALL the hectares (9,700 hectares)

... now a little bit of history of mating disruption application in Mezzacorona vineyards...
• 1991 from field trials to practical application
  • small surface (13,7 ha)
• 55 growers were involved, Mezzacorona Winery, ESAT technician of the area and Istituto Agrario di S. Michele all’Adige
• without cooperatives involvement, the small size of the farms would had been an obstacle for the practical application of mating disruption
MATING DISRUPTION – WIDE AREA EFFECT
MEZZOCORONA AREA

% clusters with larvae

mating disruption hectares
MATING DISRUPTION & PEST POPULATION clusters with larvae (%) – First generation damage assessment
FROM 2001 Eupoeclia ambiguella APPEARANCE
MATING DISRUPTION on GRAPE - YEARS 1991-2014
DISPENSER TYPES – ROTALIANA PLAIN
% MATING DISRUPTION SURFACE WITH or WITHOUT INSECTICIDE SPRAY - MEZZOCORONA

% untreated surface | % treated surface

Year | % untreated surface | % treated surface
--- | --- | ---
1991 | 100 | 0.2
1992 | 100 | 0.5
1993 | 100 | 0.5
1994 | 100 | 0.2
1995 | 100 | 0.5
1996 | 100 | 0.5
1997 | 100 | 0.2
1998 | 100 | 0.5
1999 | 100 | 0.5
2000 | 100 | 0.2
2001 | 100 | 0.5
2002 | 100 | 0.5
2003 | 100 | 0.2
2004 | 100 | 0.5
2005 | 100 | 0.5
2006 | 100 | 0.2
2007 | 100 | 0.5
2008 | 100 | 0.5
2009 | 100 | 0.2
2010 | 100 | 0.5
2011 | 100 | 0.5
2012 | 100 | 0.2
2013 | 100 | 0.5
2014 | 100 | 0.5

Note: The chart shows the percentage of mating disruption surface with or without insecticide spray for each year from 1991 to 2014.
A. Ijungiana AVERAGE DAMAGE ON CLUSTER MEZZOCORONA AREA

Graph showing the average damage and maximum damage for each year from 2007 to 2013.
MATING DISRUPTION ON A. Ijungiana

- **MD - AVERAGE DAMAGE**
- **NO MD - AVERAGE DAMAGE**

<table>
<thead>
<tr>
<th>Year</th>
<th>MD</th>
<th>NO MD</th>
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</thead>
<tbody>
<tr>
<td>2008</td>
<td>0.03</td>
<td>0.30</td>
</tr>
<tr>
<td>2009</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>2010</td>
<td>0.21</td>
<td>1.10</td>
</tr>
<tr>
<td>2011</td>
<td>0.89</td>
<td>2.53</td>
</tr>
<tr>
<td>2012</td>
<td>0.71</td>
<td>1.74</td>
</tr>
<tr>
<td>2013</td>
<td>0.05</td>
<td>0.00</td>
</tr>
<tr>
<td>2014</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>
FROM 2013 - TRIPLE PURPOSE PRODUCT

Lobesia + Eupoecilia + Argyrotaenia
“POSITIVE EFFECTs”
OF MATING DISRUPTION
3,000 ha – Trentino (grape & apple)
300 ha – South Tyrol
700 ha - Sicily
25 ha - Sicily for *Planococcus ficus* (trial)
INSECTICIDE USE (kg/ha/year)
MEZZACORONA VINEYARDS

mating disruption wide area project
“NEW POSSIBLE PROBLEMS” THAT MAY LEAD TO AN INCREASE OF INSECTICIDES APPLICATION
VECTOR OF Flavescence dorée
(Scaphoideus titanus)
VECTOR OF BOIS NOIR

(*Hyalesthes obsoletus*)
VINE MEALY BUG
(Planococcus ficus)
VINE MEALY BUG (*Planococcus ficus*)

HARVEST DAMAGE ASSESSMENT – 28/8/2014

**Grado attacco su grappolo**

<table>
<thead>
<tr>
<th></th>
<th>Mating disruption</th>
<th>Mating disruption + insecticides</th>
<th>Farm standard</th>
<th>TEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confusione 45g</td>
<td>1,4</td>
<td>1,3</td>
<td>8,3</td>
<td>14,9</td>
</tr>
<tr>
<td>Confusione 90g</td>
<td>1,2</td>
<td></td>
<td>1,2</td>
<td></td>
</tr>
<tr>
<td>Confusione 45g + difesa</td>
<td>1,3</td>
<td></td>
<td>13,4</td>
<td></td>
</tr>
<tr>
<td>Confusione 90g + difesa</td>
<td>0,9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H2 aziendale</td>
<td></td>
<td></td>
<td>9,8</td>
<td>13,4</td>
</tr>
<tr>
<td>I3 aziendale</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I6 aziendale</td>
<td></td>
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</tr>
<tr>
<td>I6 TEST</td>
<td></td>
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</tr>
</tbody>
</table>

VINE MEALY BUG (*Planococcus ficus*)

HARVEST DAMAGE ASSESSMENT – 28/8/2014
SPECIAL THANKS TO:

• ALL the people that helped, in various forms, for 24 years the application of mating disruption

• TO Marino Gobber, Roberto Lucin, Massimo Frioli, Ronny Dalponte, Alberto Gelmetti, Marco Beozzo, Michele Bonetti, Martino Andreoli, Martino Adami, Flavia Forno for their great help

• TO all the growers that allowed the use of their farms and followed up properly all our indications

• Mezzacorona Group managers for their continuous support on environmental friendly activities

• TO Rizzoli Fabio (Mezzacorona Group CEO) for his precious stimulus on both day-to-day work and long term views
... thank you for your the attention...