

TOOLS 17	<h2 style="margin: 0;">IPM solutions to reduce pesticides reliance in grapevine</h2>
	<h2 style="margin: 0;">Systems</h2>

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WHAT IS...	<p>The overall objective on grapevine is to provide indications on how to reduce the use chemical pesticides of 10-30 % compared to the current situation by integrating microbial biocontrol agents, low impact substances, agronomic practices and innovative technologies (IPM solutions).</p>
WHY	<p>Grapevine is the number one user of pesticides in terms of tons of active ingredients consumed; it alone accounts for 38% of the total volume. IPM methods have the potential to drastically reduce pesticide use in terms of number of applications, frequency index and environmental impact. Our estimated impact is based on data collected in Northern Italy. Our worst case data show that farmers treat 22 times (with TFI=43) per season against powdery and downy mildews, grey mould, black dead arm, berry moth, <i>Scaphoideus titanus</i>, mites, and thrips. Our best case data yield 18 applications (TFI=29). To these baseline data, we need to add 2 to 3 herbicide applications on the rows. [TFI here only includes chemical compounds].</p>
HOW	<p>IPM solutions to control berry moth and <i>Scaphoideus titanus</i> with pheromone and vibrational mating disruption in combination with microbial control agents, adapted agronomic practices and mechanical weed control will reduce the number of applications down to 6 (TFI=8), reducing emissions by a factor of 3. A recent French study also calculates that IPM solutions could reduce total TFI from above 20 to below 10. Finding alternatives to copper against downy mildew will stop copper accumulation in the soil and will benefit soil micro and macro-fauna and flora.</p> <p>Specific approaches could be provided to complete the IPM solutions portfolio: by the use of downy and powdery mildew resistant/tolerant <i>Vitis</i> hybrids or cultivars and the implementation of cultural techniques against Botrytis (Germany), the combination of new microbial control agents and natural products with different mechanism of action (induced resistance, competition, antibiosis) against downy, powdery mildews, grey mould (Italy, Germany), the combination of mathematical models, monitoring and sanitation methods (Italy), the use of decision support system to reduce fungicidal spraying against downy and powdery mildews (France and Italy), the use of cover cropping as an alternative to herbicides (France).</p>

Sheet T17

SOURCES

► On the ENDURE website:

[Deliverables](#):

DR 1.23 (Pesticide use in viticulture and available data on current practices and innovations, bottlenecks)

► On the [ENDURE Information Centre](#):

Keywords: crop > European grape

► On the PURE website:

<http://www.pure-ipm.eu/taxonomy/term/31>