



GOOD PRACTICE DESCRIPTION FORM

Title	Mating disruption
Proposing subject	Autonomous Province of Trento (PAT)
Country, region, contacts	Italy, Trentino, Unit for organic productions – PAT; federico.bigaran@provincia.tn.it ; arianna.dallaporta@provincia.tn.it ;
Short description of the practice	<p>This practice is adopted in agriculture to manage harmful insects. It is based on use of pheromones. Pheromones are substances produced by insects and used for communication between individuals of the same species. They have several functions: sexual lure, aggregation, alarm, etc... Pheromones are reproduced artificially in the laboratory for monitoring and control of Lepidoptera. In viticulture they are used for the monitoring and for the disorientation of the vines moths (<i>Lobesia botrana</i>, <i>Eupoecilia ambiguella</i> Hb).</p> <p>This technique consists of the spread in the environment of pheromones that prevent the detection of the female by the male.</p> <p>The diffusion of the sexual pheromone takes place thanks to special dispensers and puffers that are installed on the plants simply by anchoring them to the branches. In the last years in Trentino PAT promoted the diffusion of mating disruption that in 2005 was applied on 10,000 ha, almost the whole vineyard surface in Trentino. PAT financed a five year financial aids programme for farms approved by EU.</p>
Aim of the best practice	<p>To contain harmful insects in the vineyard and in the environment, by minimizing the use of pesticides</p> <p>Advantages: Reducing the use of insecticides, respecting the environment, protecting human health, reducing the risk of insect resistance to chemicals, qualifying farmers' activities</p>
Suggestion for implementation	For the control of the population of the phytophagous is necessary to intervene promptly, without having to deal with conditions that are no longer manageable. The first level of control is represented by the use of monitoring traps. These must be located in the center of the treated area and in areas deemed particularly at risk, such as the edges or in the upper parts of the slopes where it is more difficult to maintain the right level of pheromone concentration.
Expected Results	Lack of mating will result in a much diminished population of larvae and consequently less damage to the fruits.
Improvable or critical aspects	The application of dispensers in the field must be carried out before the start of the flight of male insects of the wintering generation of the target species. Dispensers must be distributed as evenly as possible over the entire surface subject to confusion, except in particular conditions such as, for example, in the presence of a non-flat area or in the presence of large plants, as seen previously. A reinforcement must always be provided on the first edge rows and on the first plants of the heads in order to compensate for the greater pheromone losses that occur in these areas.
Innovation	An innovative approach using the vibrational mating disruption method against leafhoppers (<i>Scaphoideus titanus</i> ; <i>Empoasca vitis</i>) is currently under test in open-field

	trials at FEM.
Bibliographic indications	<p>Experience with mating disruption technique to control grape berry moth, <i>Lobesia botrana</i>, in Trentino. M. Varner, R. Lucin, L. Mattedi, F. Forno IOBC wprs Bulletin Vol. 24(2) 2001 pp. 81-88</p> <p>Varner, M.; Mattedi, L.; Lucin, R. (2001). Mating disruption in Trentino viticulture : 10 years experience in Cantine Mezzacorona. IOBC/WPRS BULLETIN, 24 (7): 143-150. handle: http://hdl.handle.net/10449/18425</p> <p>Nieri, R.; Mazzoni, V. (2017). Open-field vibrational mating disruption: the effect on leafhopper pests and the vineyard ecosystem. In: Future IPM 3.0 towards a sustainable agriculture IOBC-WPRS general assembly Meeting of the WGs Integrated protection in viticulture, Induced resistance in plants against insects and diseases and Multitrophic interactions in soil, Riva del Garda, TN, Italy, 15-20 October 2017: IOBC/WPRS: 235-236. url: http://www.futureipm3.eu/ handle: http://hdl.handle.net/10449/44200</p>
References	Autonomous Province of Trento, Cantine Mezzacorona, Consorzio tutela vini del trentino, FEM-CAT
Pictures (3/3)	