A WEB-GIS DECISION SUPPORT SYSTEM FOR PARASITE CONTROL IN ALPINE REGIONS: APPLICATIONS TO GRAPEVINE PHENOLOGY AND MODELLING OF EUROPEAN GRAPEVINE MOTH

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Environmental variability in mountain regions like Trentino makes WEB GIS a precious tool for decision support systems (DSS). In the cultivated alpine valleys, where a complex temperature pattern exists, monitoring activities and phytosanitary management can greatly benefit from web-based simulation tools. Furthermore, collecting biological samples is time-consuming and expensive. A phenological model of each growth stage of grapevine cv. Chardonnay was overlapped with the time of flight of each generation of the European grapevine moth (*Lobesia botrana*) to optimize timing of intervention. *L. botrana* is the one of the most important pest in Italian vineyards. Larvae feed on flowers during the first generation, and then on grape berries during the second and third generations. Since 1998, the common control is mating disruption and the viticultural area is treated with pheromones. Overlapping models of flight time and grapevine phenology is the key factor to decide when and where starting controls. Host and pest phenology was reproduced in maps at 200 meters of resolution with daily steps in Trentino. Model outputs were run into a friendly modular WEB GIS called ENVIRO and the impacts of the climate change at regional level was evaluated.