

REDUCING PRIMARY INOCULUM SOURCES OF GRAPEVINE POWDERY MILDEW BY THE HYPERPARASITE *AMPELOMYCES QUISQUALIS*

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Grapevine powdery mildew, caused by the obligate biotrophic fungus *Erysiphe necator* (Schw.) Burr., is one of the most important grapevine diseases in Italy, because of the presence of pathogen inoculum and favorable environmental conditions for its development. In northern Italy, *Erysiphe necator* overwinters almost exclusively as chasmothecia which represents the main source of primary inoculum. In the spring, ascosporic infections originating from chasmothecia commonly appear randomly in the vineyard. Fungi of the genus *Ampelomyces* are the major antagonist of powdery mildew. The mycoparasite attack various developmental stages of powdery mildews. The present study addresses the occurrence of artificial parasitism of grapevine powdery mildew chasmothecia by *A. quisqualis*. Two-years field experiments performed in five different vineyards focused on the ability of *A. quisqualis* in reducing the powdery mildew primary infections by the reduction of chasmothecia. Spores of the hyperparasite were rarely detected in mature chasmothecia with fully developed appendages. In contrast, the large number of fully developed chasmothecia without asci and ascospores were considered to be parasitized by the mycoparasite. However, in our study a low effectiveness of this hyperparasite in terms of reduction of overwintering chasmothecia in its natural environment was found. *A. quisqualis* may only colonize young, immature chasmothecia of powdery mildew, transforming them into its own reproductive structures. Infested chasmothecia do not reach the stage of maturity, do not form appendages nor ascospores, which is linked with the reduction of the source of primary infections. We think the low survivability of *A. quisqualis* could be due to the immature wall of chasmothecia which at this developmental stage are not capable of surviving low temperatures. Therefore, the stage of colonizing mature chasmothecia by the hyperparasite seems to be understandable. Probably, it provides suitable conditions for the hyperparasite for a better overwintering and transmission in its environment.