

## Controlling Downy Mildew (*Plasmopara viticola*) in Field-grown Grapevine with $\beta$ -Aminobutyric Acid (BABA)

Moshe Reuveni,<sup>1</sup> Tirtza Zahavi<sup>2</sup> and Yigal Cohen<sup>3</sup>

Two foliar sprays of BABA (DL-3-amino-*n*-butanoic acid, DL- $\beta$ -aminobutyric acid), or a mixture of BABA and different fungicides at reduced rates, effectively controlled (>90%) downy mildew, caused by *Plasmopara viticola*, in the foliage of field-grown grapevines. In five field trials BABA sprays resulted in a significant reduction of infectious leaf area and fungal sporulation, and of necrosis of oilspots. The level of disease control for BABA in four trials was similar to that achieved by metalaxyl-Cu or 'Acrobat Plus' (dimethomorph + mancozeb). Two-way tank-mixtures of BABA + fosetyl-Al, BABA + folpet, or BABA + Bion (benzothiadiazole), each at half the recommended rate, provided an additive effect against *P. viticola*, performing as well as the full rate of each fungicide alone. BABA was not phytotoxic and did not affect pH, total titratable acids, or °Brix of the juice, as determined by commercial fungicidal standards. The results indicate that foliar applications of BABA can efficiently be integrated into a downy mildew control program in vineyards.

KEY WORDS: Induced resistance; integrated disease control; systemic fungicides; *Vitis vinifera*.

---

Received July 5, 2000; received in final form Sept. 20, 2000; <http://www.phytoparasitica.org> posting Jan. 23, 2001.

<sup>1</sup>Golan Research Institute, Univ. of Haifa, Qazrin 12900, Israel [Fax: +972-6-6961930; e-mail: mreuveni@research.haifa.ac.il].

<sup>2</sup>Extension Service, Ministry of Agriculture, Zefat 13100, Israel

<sup>3</sup>Faculty of Life Sciences, Bar-Ilan University, Ramat Gan 52900, Israel.