

## Preliminary Trials in Organic Vineyard with Mater-Bi® Mulch Films

Guerrini, S.<sup>1</sup>, Martellucci, R.<sup>2</sup>, Nardi, G.<sup>3</sup>, Ranghino, F.<sup>1</sup>, & Bonanzinga, M.<sup>4</sup>

Keywords: biodegradable mulch film, weed control

### Abstract

*Weed control in organic vineyards requires several manual operations, mainly in the first two years after transplanting, and it represents an important cost for the grower. Therefore, mulching can be an interesting practice in order to reduce work on weed control on the rows, increase vine growth, and protect soil from erosion. In this study, biodegradable films were used. The films are made of Mater-Bi®, Mater-Bi, a certified biodegradable and compostable plastic that contains vegetable raw materials such as GMO-free cornstarch modified with biodegradable polyesters. Thanks to their biodegradation, mulch films do not need to be removed from the soil as do traditional plastics.*

*In the last couple of years some experiences in different vineyards in Tuscany have been carried on by ARSIA using black Mater-Bi films with different thicknesses and different formulations. The preliminary quantitative results were collected from the experimental trial in the organic vineyard "Il Poderaccio" near Siena. Biodegradable mulch films were laid by hand on one row after vine transplanting in spring and the behavior of mulched and not mulched vines (an adjacent row) was compared.*

*Recurring monitoring has shown that some biodegradable mulch films were able to reduce the growth of weeds for a period of 12 months. Film thickness and formulation play an important role in the efficiency of long-lasting biodegradable mulch films.*

*Already at the budding stage and until the end of the vegetative cycle, the development of mulched vines has been higher compared to vines without mulching. Causes of this greater growth can be a result of a faster soil warming in spring (due to the black color of the films), a higher water retention, and a reduction in weed competition.*

*The studies performed in Tuscany demonstrated that mulching vineyards using biodegradable films can reduce the need for labor to control weeds during the first growing period. However, further investigation will be required in order to obtain more data to confirm this initial result.*

---

<sup>1</sup> Novamont via Fauser 8, 28100 Novara. e-mail: sara.guerrini@novamont.com, Floriana.ranghino@novamont.com, Internet: [www.novamont.com](http://www.novamont.com)

<sup>2</sup> ARSIA via Pietrapiana 30, 50121 Florence, e-mail: roberto.martellucci@arsia.toscana.it, Internet: [www.arsia.toscana.it](http://www.arsia.toscana.it)

<sup>3</sup> ARSIA collaborator, e-mail: giacomonard@yahoo.it

<sup>4</sup> ARSIA via Pietrapiana 30, 50121 Florence, e-mail: maurizio.bonanzinga@arsia.toscana.it, Internet: [www.arsia.toscana.it](http://www.arsia.toscana.it)