

Alternative Strategies Using Sulphur, Copper, and Potassium Bicarbonate for Primary Scab Control in Organic Apple Production in Belgium

L. Jamar¹, B. Pahaut¹, & M. Lateur¹

Keywords: Armicarb, scab resistance, stop-spray, tunnel sprayer, *Venturia inaequalis*

Abstract

*The efficacy of inorganic compounds for primary scab control was investigated in field experiments over two growing seasons in Belgium on high and medium scab-susceptible cultivars (cvs. "Pinova" and "Pirouette," respectively) and two Vf scab-resistant cultivars (cvs. "Initial" and "Topaz"). In order to reduce the amount of fungicide applied, two strategies were used: (1) a "stop-spray" timing involving spraying during the infection processes, and (2) a tunnel sprayer machine for treatment applications. Under high disease pressure, during both years, low rates of elemental sulphur ($\leq 38.6 \text{ kg ha}^{-1} \text{ year}^{-1}$) combined with low rates of copper ($\leq 2.1 \text{ kg ha}^{-1} \text{ year}^{-1}$) provided the best scab control and reduced scab severity on the fruits of cv. "Pinova" by $\geq 97\%$ compared with water control. Lime sulphur was much more effective than wettable sulphur. Potassium bicarbonate was as effective as wettable sulphur using the same dosage. In these conditions, no treatment expressed phytotoxicity, nor did they increase fruit russet, and finally, they did not affect the summer density of the beneficial *Typhlodromus pyri*.*

¹ Centre wallon de Recherches agronomiques (CRA-W), B-5030 Gembloux, Belgium, e-mail: jamar@cra.wallonie.be, lateur@cra.wallonie.be, Internet: www.cra.wallonie.be