

Aerial Spraying of *Bacillus thuringiensis* var. *kurstaki* for the Control of *Thaumetopoea processionea* in Turkey Oak Woods

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Thaumetopoea processionea L. is an important oak defoliator whose outbreaks have become increasingly frequent in Europe and thus have received a great deal of attention from foresters. Field trials were carried out in central Italy (Tuscany) to test the efficacy of aerial spraying of *Bacillus thuringiensis* var. *kurstaki* [*Btk*] in early spring for the control of processionary infestations in *Quercus cerris* L. woods. The experimental sites were located in a hilly area of 1640 ha with a maximum altitude of 593 m a.s.l. and a yearly mean temperature of 10°C. Turkey oak woods were divided into three areas to be treated with 31.75 BIU ha⁻¹ (2.5 l ha⁻¹) on 578 ha, 44.45 BIU ha⁻¹ (3.5 l ha⁻¹) on 306 ha and 57.15 BIU ha⁻¹ (4.5 l ha⁻¹) on 756 ha, respectively. Five days after treatment, larval mortality was less than 40% in the control plot, but over 60% in the treated areas. Thirteen days after treatment, larval mortality varied from 75.05% to 96.42% in the three treated areas. Surveys conducted 2 months after the treatment showed a strong decline in the number of oak processionary nests in all the treated plots. It was possible to control the pest effectively in turkey oak woods using *Btk* at 31.75 BIU ha⁻¹ distributed at ultra-low volume at the time of bud opening when non-urticating larvae were present.

KEY WORDS: Forest protection; microbial insecticide; *Quercus cerris*; urticating larvae.

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