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### Low volume application possibilities against *Curculio nucum* L. (Coleoptera: Curculionidae)

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In this study, it is used cold fogging machine as a part of chemical protection against *Curculio nucum* L. (Coleoptera: Curculionidae) which is main pest in hazelnut (*Corylus avellana* L.) orchards in Samsun. Low volume techniques and low dose rates have been conducted with this machine. Food coloring tartrazine is used as a tracer at the applications. Biological efficiency applications have been made with insecticide named Altın Amiral 25 EC. All applications have been completed in Terme and Atakum town of Samsun in 2008 and 2009. Trials have been conducted in an orchard consists of chubby and poult varieties. Spacing and an average height of hazelnut center varies between 4x4.5 m and 4.5-5 m respectively. Distribution uniformity, penetration, residue and losses determined by separated regions in horizontal (bottom, middle, top) and vertical (outer, middle, center) positions in hazelnut center. It has been identified varieties in residual values and volume rates in different parts of the hazelnut center. As a result of tracer applications maximum residue amounts were collected at the bottom of the hazelnut center. When volume rates were taken into account the total amount of loss was 21.2% at the hazelnut center applications. Trials of biological effectiveness were carried out as cage and parcel applications. After spraying in the cage countings were done on 1, 3 and 7 days. It were determined the number of dead, live and paralysed insects for adult hazelnut worm. ½ acre parcels created for each character during parcel trials. Hazelnut worm counting were done a week later after applications. Insecticide was sprayed at full dose, ¾ dose, ¼ dose with a volume rate of 10 l da<sup>-1</sup> biological effectiveness is 97.34% for full dose and 95.99% for ¾ dose. JMP statistical analysis program was used to analysis. According to the results of biological effectiveness trials it can be used full and ¾ doses of suggested Insecticide with a volume rate of 10 l da<sup>-1</sup> for chemical sprayings against *C. nucum*.

**Keywords:** Spraying, Low volume application, *Curculio nucum* L. (Coleoptera: Curculionidae)

