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## **The influence of the exploitation period of the orchard sprayer on the technical correctness of the measuring regulatory system**

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### **Abstract**

The effective implementation of chemical protection in fruit and grapevine production is possible with use of technically correct orchard sprayer. The paper presents the results obtained during the control testing of 41 different models of orchard sprayers, with different period of exploitation in agricultural holdings across Serbia that are used in intensive fruit and viticultural production. During the control testing, a large number of parameters were monitored, using standardized methods and test procedures. What is specifically analyzed in this paper is the technical correctness of the manometer as a corrective device of the *Measuring regulatory system* of the orchard sprayer. Checking the correctness of the manometer ensures the appropriate working pressure of the liquid in the designed range, which significantly improves the quality of chemical protection and extends the life of the nozzle. Out of the total number of investigated orchard sprayers, 31% are in exploitation for less than three years, while the largest number of orchard sprayers ie. 44% is in exploitation for seven years or more. The technical correctness of the manometer group 1 is at a high level ( $C_{ta} = 0.80$ ) compared to other groups of tested orchard sprayers. Group 2 and group 3 have an identical coefficient of technical accuracy of the manometer ( $C_{ta} = 0.66 - 0.68$ ). Low coefficient of technical accuracy of the orchard sprayers manometer ( $C_{ta} = 0.38$ ) occurs in group 4, which shows the direct dependence of the technical correctness of the manometer on the period of exploitation of the orchard sprayer.

*Key words:* coefficient of technical accuracy, control testing, chemical protection, period of exploitation of the orchard sprayer