

Yield efficiency and mechanical harvesting with trunk shaker of some international olive cultivars

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Abstract

The cultivar choice is fundamental for oil production as the cultural techniques such as mechanical harvest as well as environmental adaptability. In the period 2004-2007, in central Italy, in the region of Umbria, a trial was carried out to evaluate how some cultivars, such as 'Arbequina', 'Kalamata', 'Leccino', 'Manzanilla de Sevilla', 'Picholine', 'Picholine Marocaine' and 'Sorani', adapt to environmental conditions and respond to mechanical harvesting by trunk shaker. The years 2006 and 2007 were characterised by very low rainfall during the ripening period and the 2005 year was off because a late frost damaged the inflorescences. The most productive cultivar resulted to be 'Leccino' (19 kg olive/tree), followed by 'Kalamata', 'Picholine' and 'Manzanilla de Sevilla'. Besides, during the year, the cultivars 'Leccino', 'Kalamata' and 'Picholine' showed a steady productive behaviour. On the contrary 'Picholine Marocaine' and 'Sorani' showed a limited yield. The most vigorous cultivars, measured as crown volume, were 'Leccino' and 'Kalamata' (26 m³ in average) followed by 'Picholine' and 'Sorani' (19 m³ in average). The highest yield efficiencies were observed in 'Manzanilla de Sevilla' and 'Arbequina' (1 kg of olive/m³ of crown) and the lowest in 'Sorani' (0.26 kg of olive/m³ of crown). The mechanical harvesting percentage was very high, over 91%, in 'Kalamata', 'Sorani', 'Picholine' and 'Leccino'; it was good (over 83%) in 'Picholine Marocaine' and 'Manzanilla de Sevilla'. 'Kalamata', 'Picholine Marocaine', 'Picholine' and 'Manzanilla de Sevilla' showed fruits with weight over 3 g and 'Leccino' and 'Arbequina' of 1.72 and 1.14 g respectively. All the oils were respondent to commercial standard with a variable content of polyphenols. The cultivars 'Leccino', 'Kalamata' and 'Picholine' for their good agronomic characteristics deserve, more than the others, to be tested on large scale for new plantations.