

Identification of the appropriate harvest time for 'Arbequina' olive (*Olea europaea* L.) in Argentina

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Abstract

'Arbequina' occupies the largest area implanted with olive in Argentina, mainly in warm areas. In order to plan the logistics of collection, it is important to identify the appropriate harvest time. Therefore, it is necessary to determine the fruit development stage with the highest fat content and commercial oil quality within the genuineness rules of IOC. The objective of this study was to determine the appropriate harvest time for 'Arbequina' fruits to obtain Extra Virgin olive oil in different productive areas of Argentina. Maturity Index (MI) was used as an indicator of development. Fruit samples were taken on 8 different dates in 2007, every 20 days from pit hardening, at 6 sites located at 28°17' to 32°35'S, and 68°15' to 64°41' W, corresponding to Cruz del Eje (Córdoba), Valle Central and Pomán (Catamarca), Valle de Tulum (San Juan), Aimogasta (La Rioja), and Lavalle (Mendoza) at 300-900 m a.s.l. with different climate. MI, total fat content on dry matter, acidity, peroxide index, composition of fatty acids, oxidative stability and total polyphenols were analyzed. The appropriate harvest times for Lavalle, Valle de Tulum, Aimogasta, Cruz del Eje, and Pomán were: on 2 May (MI 2.87); 16 April (MI 3.17); 27 February (MI 1.90); 1 March (MI 1.43), 28 February (MI 2.06); respectively. In the first two sites, those moments coincided with the highest fat contents (41.69±1.12% and 43.5±0.87%) and oil stability. In the last three, the appropriate harvest times did not match with the highest fat contents (47.8±3.13%, 54.21±1.1% and 44.56±1.58%) which were attained later when parameters of genuineness departed from IOC rules. In Valle Central, the percentage of oleic, linolenic, palmitic and palmitoleic acids did not comply with IOC rules, the highest fat content (38.99±2.76%) was on 28 March with MI 3.61. There was a correlation of 0.92 between MI and fat yield, and a correlation higher than 0.88 between MI and percentages of fatty acids.