

Sensory characterization of California's olive oils

P.M. Vossen, A.K. Devarenne

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Abstract

California olive oil industry is growing very rapidly with plantings of 1000 to 1500 hectares annually over the last three years. In 2007, there were an estimated 5550 ha with the production of premium quality olive oil predicted to triple by 2011. Very little historical information is available about olive oil production in California. Since premium oils rely primarily on sensory characteristics to determine price and popularity, a long term program was started to evaluate and characterize flavors of some of the world's most popular cultivars grown in different regions of California. In 1996, fifteen cultivars from the same nursery source were planted in five different climatic zones in northern California. Over the last three years, fruit from each cultivar was harvested at approximately the same maturity index and made into oil using the Abencor system. Evaluation of the oils was conducted by trained tasters of the University of California Taste Panel. A 15-point profile sheet and data base were developed and used to rate oils by their specific flavor intensities and characteristics such as bitterness, pungency, aroma, complexity, and balance. Fruitiness undertone flavor characteristics such as nutty, buttery, floral, tropical, grassy, herbaceous, mint, eucalyptus, and spice were also noted in three different intensity levels (slight, moderate, or strong). Another six-seven growing seasons will be needed to sufficiently classify the cultivars with statistical reliability due to extensive variability from yearly climatic changes, alternate bearing, and fruit maturity influences. A general trend, however, has been that oils made from olives grown in cooler climates have higher flavor intensities. This evaluation process for olive oils has the potential to help farmers select cultivars, determine harvest dates, and blend oils to produce specific oil styles and flavors specific to targeted consumer groups.