

Effect of artificial aging using eleven different wood chips on the antioxidant activity, phenolic profile, sensory properties and color of two Greek red wines

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Abstract

Two Greek red wines (Syrah and Cabernet) were artificially aged with eleven different wood chips (white oak, red oak, Turkey oak, chestnut, Bosnian pine, cherry, common juniper, common walnut, white mulberry, black locust and apricot). The influence of each wood species was tested for up to 20 days. The optimum duration for the extraction of polyphenols was 20 days (Syrah) or 10 days (Cabernet) when chips of white oak, chestnut, cherry, white mulberry, black locust and apricot were used. Resveratrol and catechin concentrations ranged within the limits previously reported in literature. A high antioxidant activity was established after 10 days of artificial aging. The sensory evaluation showed that the best results were produced by the apricot chips after 5 days (Syrah) or black locust and apricot after 5 days (Cabernet). Color showed an increase during both time of aging and number of wood chips added.

Keywords: Red wine, wood chips, artificial aging, phenolic profile, sensory evaluation, color parameters.

Submitted in: referred journal [Food Chemistry](#) (2013)