

PN3: Morphological and chemical characterization of almond's fruits of *Ferragnes* and *Ferraduel* cultivars recently introduced in eastern Morocco

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Abstract:

Morocco has a mild Mediterranean climate with agro-ecological zones well adapted to almond cultivation. Thus, the almond tree well adapted to the mild winter and hot and dry summer in eastern Morocco, is the most important nut crop in this region. It's generates 15% of Moroccan production of shelled almonds (1). Almond varieties have different earliness in respect to the flowering. In this region, it has been noted that the production of almonds from local ecotypes and some varieties that bloom early is often limited by their susceptibility to spring frost. For this reason, the program "* PROFAO" supported by *BTC, for the extension of almond plantations, has chosen to introduce in this region two French varieties *Ferragnes*, *Ferraduel* (F/F). This couple of cultivars is characterized by late bloom to avoid the harmful effects of late frost in February, but must absolutely be combined for cross fertilization,

This study has been conducted on young almond F/F orchards and in the five main areas of almond tree growing in eastern morocco. The aim is to define morphological and chemical traits of this almond couple F/F. The inter-varietal comparison of pomological traits have shown that *Ferragnes* cultivar have the best kernels which are characterized by a high values for weight, length, thickness and volume. In addition the F/F association presents a high shelling yield in the 5 studied areas. Chemical analysis of almond flour (F/F deoiled fraction) shows protein richness (35%), 14% sugar and 4.5% ashes. Fatty acids analysis of F/F almond oil fraction shows dominance of two unsaturated fatty acids; oleic acid (68.93%) and linoleic acid (21.84%).

We conclude that shelled almonds of this F/F association present good commercial traits (nut shape, kernel size, kernel appearance) and an interesting chemical composition. All of these traits should translate into good commercial value added.

Keywords: Almond variety, *Ferragnes*, *Ferraduel*, Fruit's morphological characters, chemical analysis

(1): Veille économique-Secteur amandier 2017, Ministère de l'agriculture et de la pêche maritime, <http://www.agriculture.gov.ma/pages/rapports-statistiques/campagne-agricole-2015-2016>

*PROFAO: Projet Filière Amandier dans l'Oriental (2011-2017): "The almond value chain in eastern Morocco"

*BTC: Belgian development agency,