

# Oil quality analyses of four autochthon



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Key words: Oil quality, fatty acid composition, phenolic compounds, pigment content, mountain, Akers. Abstract Akers is a mountainous region characterized by an important olive biodiversity with high oil quality but little is known about this olive germless. The aim of this work is to analyze the oil quality of the most predominant varieties 'Chitout', 'El horn 'Grades' and 'Soulless' cultivated in this region.

The most of the quality indices and fatty acid composition showed significant variations among the studied olive cultivators. Olive oil content is high for the four cultivators, especially for the variety 'Grades' with approximately 67%. The cultivators 'El Horn' and 'Grades' had the highest values of ILEC acid (72.8% and 74.8%, respectively). While the varieties 'Osculates' present the highest content of chlorophyll and carotene compounds.

The cultivar 'Grades' was also noteworthy for its higher content of phenolic compounds (720 MG/kg). In conclusion, the oil quality of the different studied cultivators is classified as extra-virgin oils with high ILEC acids and low palmists and lenience acids. These findings were of interest to protect the specimens studied cultivators, which can be used from the agronomic point of view to substantially improve the production of olive oil in the mountain of Akers. \* Corresponding Shame et al.

Author: Manias Raman' Shame 0[[email protected](#)]FRR page 124 Introduction Akers which is localized in the North West of Tunisia. Mountain people, who are among the world's poorest Several analyses were performed to characterize the and hungriest, are key to maintaining mountain different olive oils: free acidity, peroxide value, fatty ecosystems and their role in

providing environmental acid composition, pigments content and phenolic services to downstream communities. Mountain compounds by HAPLY-MS.

This is a preliminary study communities need to be empowered and their with the aim of finding any variable able to livelihoods improved, to enable them to take discriminate among the environmental extra-virginresponsibility natural olive oils and evaluate the oil quality of these resources and to fulfill their role as mountain varieties. Especially that, the olive cultivation could stewards (Walter 1986, Garcia-Uric and Lasagna- have an important role in the sustainable mountain Martinez development. 990, the preservation Blonde and of Aaron's 1999, MacDonald et al. , 2001, Roomer-Caldera and Perry 2004). Materials and methods Fruit samples In Tunisia, the mountains are characterized by an Healthy olive fruit samples of the varieties 'Chitout', important olive biodiversity with high oil quality but 'El Horn' 'Israeli' and 'Osculates' were picked at little is known about this germless (Manias et al. , industrial optimum ripening stage. The maturity 2013).

This resource could be used from the index of all the olives was of 3 and was based on the agronomic point of view to substantially improve the degree of skin and pulp pigmentation according to the production of olive in the mountainous orchards, method developed by the Agronomic Station of Jagn pacifically, that olive is one of the few trees that can (Aced and Hermosa; 1998). This experiment was still produce fruits even on rock and unproductive conducted during the crop season of 2012-2013 in the land (Norman-Sabbatical et al. 2007). Mountainous olive orchard of Akers localized in North West Tunisia. The average annual On the other hand, <https://assignbuster.com/oil-quality-analyses-of-four-autochthon/>

virgin olive oil has a delicate and precipitation was 539 mm with the majority in unique flavor that distinguishes it from other edible October, December, and January. Average annual vegetable oils (Bosky. , 1996). Quantity and quality of temperature of the experimental orchard site is absences existing in the virgin olive oil such as fatty 13. C; the altitude is 1078 m, 35048' N of latitude acids, phenols, chlorophyll and carotids are and 9021' E of longitude. Affected by various factors including the type of the olive cultivar (Bacchius et al. , AAA; Certain et al. , Oil Content 2006 and Gomez-Rich. , 2008), climatic conditions For oil content determination, 40 g of olive fruits was (Agiler et al. , 2005), ripening stage (Salvadoran et dried in an oven at ICC to constant weight. The al. , 2001), irrigation management (Vivian et al. 2005) dried olives were crushed and extracted with hexane ND the extraction methods (Randall et al. , 2000). Using a Sloses apparatus (Batch et al. , 1996). The Among these factors, cultivar is undoubtedly one of results were expressed as percentage of dry matter the most important. However, it is often ignored, either through lack of varietals information, or because the olive oil is a mixture of various varieties or even Analytical indices because emphasis has been laid only on its place of Determination of free acidity, peroxide value and origin (Lantern et al. 2002). Specific ultraviolet absorbency were carried out following the analytical methods described in the SEC The present work was carried out on the extra-virgin Regulation (1995). Olive oils of the four main olive varieties (Checkout, El Horn, Grades and Soulless) grown in the mountain of Fatty acids, peroxide value, and IV page 125 Spectrophotometer's indices (KICK, KICK) Fruits, destined and immediately frozen in liquid The quality indices of fatty acids, peroxide value, and nitrogen, were iterated in a blender.

Approximately specific extinction coefficient KICK and KICK and 5 g of the powder obtained were homogeneity four AK were calculated from absorption at 232 and 270 times in 30 ml of methanol/water solution (80: 20, spectrophotometer : v), containing 0. 5% sodium metabolites, and ANYWAY - 6405 IV Visible spectrophotometer, centrifuged at 5000 RPM at 3 co for 20 min. An England) according to the European Commission ethanol solution of resorcinol (0. 5 VI) was added as Regulation SEC/2565/91. Internal standard.

The combined supernatant were respectively, by IV concentrated under reduced pressure and washed Determination chlorophyll carotene compounds Pigments with hexane. The remaining aqueous solution, partitioned four times with ethyl acetate in a water to were phase ratio of 1 was filtered on sodium sulfate determined by a spectrophotometer according to anhydrous) and evaporated to dryness at 30 co (Minimize-Mosque's et al. , 1991): 1 Goff olive oil was under vacuum. The dry residue was converted into dissolved in 10 ml of ISO-octane.

The absorbency of trio-methyl's derivatives with a isolation mixture the solution was measured at 670 and 470 NM for made up of pyridine, hexane-idealizations and chlorophyll and carotene, respectively. Trimester-chlorinated for 1 h at room temperature. The silenced extracts were dried, Fatty Acid analyses dissolved in associate and further analyzed by GO and The fatty acid composition of oil samples was GO-MS. An HP model AAA, equipped with an on- determined as methyl esters by capillary gas column injection system, and coupled with a mass chromatography analysis after alkaline treatment. Elective detector model HP BIBB, was employed. The gas chromatograph (VARIAN CAP-3800 Gas Phonetic compounds extracted by <https://assignbuster.com/oil-quality-analyses-of-four-autochthon/>

ethyl acetate were Chromatograph) was equipped with an outsmarted identified by comparing both their retention times (CAP-8400), a capillary column HP Minnows (Agilent and mass spectra with those of authentic compounds Technologies, m x 0. 53 mm, 1 pm), a split- or reference standards. Spiritless injector and a flame unionization detector FIDE). Alkaline treatment was carried out by mixing Statistical analysis 0. Goff oil dissolved in 3 ml of n-hexane with 0. 5 ml The results reported in this study are the averages of of 0. 2 N methanol potassium hydroxide solution at least three repetitions (n = 3), unless otherwise according to the method of Erg SEC 2568/91. Stated. Chemical data were analyses by the SLAT (version 2010. 4. 01). The significance of differences at Determination of total phenols a 5% level between averages was determined by one- Phonetic compounds were isolated by a 3-time way NOVA using Tutees and Dunce's multiple