

## Nutritional quality of seeds and leaf metabolites of Chia (*Salvia hispanica L.*) from Southern Italy

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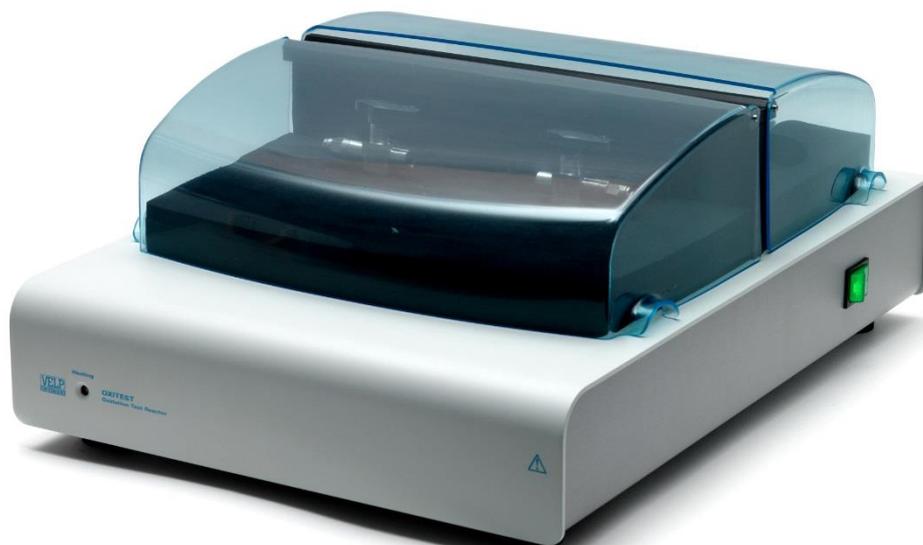
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### ABSTRACT

Chia (*Salvia hispanica L.*) is an expanding functional food crop from Central America, but little is known about effects of new growing environments and agronomical treatments on seed quality. The quality of seeds produced in Europe has never been reported and there is a lack of information on secondary metabolites of leaves, an emerging product of Chia. In this work, the nutritional quality and oxidative stability of Chia seeds produced in Southern Italy (Basilicata region) have been evaluated, taking into account also different nitrogen fertilization strategies. The quality of seeds produced in Basilicata has been also compared with that of commercially available seeds from traditional and new production areas. Oil extracted from Italian Chia seeds was not quantitatively significantly different, but more rich in chlorophyll, carotenoids and  $\alpha$ -linolenic acid than in commercial seeds. Oxidative stability, polyphenols and antioxidant activity were also influenced by seed source. Fertilization system affected free acidity, chlorophyll and carotenoids, whereas it reduced p-Anisidine value, phenols and oxidative stability. Moreover, the metabolic profile of Chia leaves has been reported for the first time; in particular, several flavonoids and hydroxycinnamic acids, and the two uncommon flavonoids acetyl vitexin and acetyl orientin were found.



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