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ABSTRACT BOOK

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Phenolic compounds in *Brassica oleracea* L. var. *costata* DC: effect of fertilization conditions

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Brassica vegetables, including all cabbage-like ones, are consumed in enormous quantities throughout the world and are important in human nutrition. Tronchuda cabbage (*Brassica oleracea* L. var. *costata* DC) plant resembles a thick-stemmed collard with large floppy leaves. Leaves are close together, round, smooth and slightly notched at the margins. Regarding the organoleptic properties, internal and external leaves are considerably different: internal leaves are pale yellow and are tender and sweeter than the dark green external ones, which may influence the consumer's choice. Tronchuda cabbage grown under ten distinct fertilization conditions (application of two different levels of nitrogen, three different levels of boron and of sulfur, an organic fertilizer and grown without any fertilization) and collected at three distinct times was studied regarding the interference of these agronomic factors on its phenolics composition.

The phenolic compounds present in the aqueous lyophilized extracts were analyzed by reversed-phase HPLC, coupled to a diode array detector. Principle Component Analysis (PCA) was applied to the results

External and internal leaves revealed distinct qualitative composition. In the external leaves it were found kaempferol 3-*O*-sophorotrioside-7-*O*-glucoside, kaempferol 3-*O*-(methoxycaffeoyl/caffeoyl)-sophoroside-7-*O*-glucoside, kaempferol 3-*O*-sophoroside-7-*O*-glucoside, kaempferol 3-*O*-sophorotrioside-7-*O*-sophoroside, kaempferol 3-*O*-sophoroside-7-*O*-sophoroside, kaempferol 3-*O*-(sinapoyl/caffeoyl)-sophoroside-7-*O*-glucoside, kaempferol 3-*O*-(feruloyl/caffeoyl)-sophoroside-7-*O*-glucoside, kaempferol 3-*O*-sophorotrioside, kaempferol 3-*O*-(sinapoyl)-sophoroside, kaempferol 3-*O*-(feruloyl)-sophorotrioside, kaempferol 3-*O*-(feruloyl)-sophoroside, kaempferol 3-*O*-sophoroside and kaempferol 3-*O*-glucoside.

The internal ones were characterized by the presence of 3-*p*-coumaroylquinic acid, kaempferol 3-*O*-(caffeoyl)-sophoroside-7-*O*-glucoside, sinapoyl glucoside acid, kaempferol 3-*O*-(sinapoyl)-sophoroside-7-*O*-glucoside, kaempferol 3-*O*-(feruloyl)-sophoroside-7-*O*-glucoside, 4-*p*-coumaroylquinic acid, sinapic acid, kaempferol 3-*O*-sophoroside and 1-sinapoyl-2-feruloylgentiobiose.

In a general way, the external leaves contained higher amounts of phenolic compounds. Additionally, samples cultivated without fertilization exhibited the highest phenolics contents.