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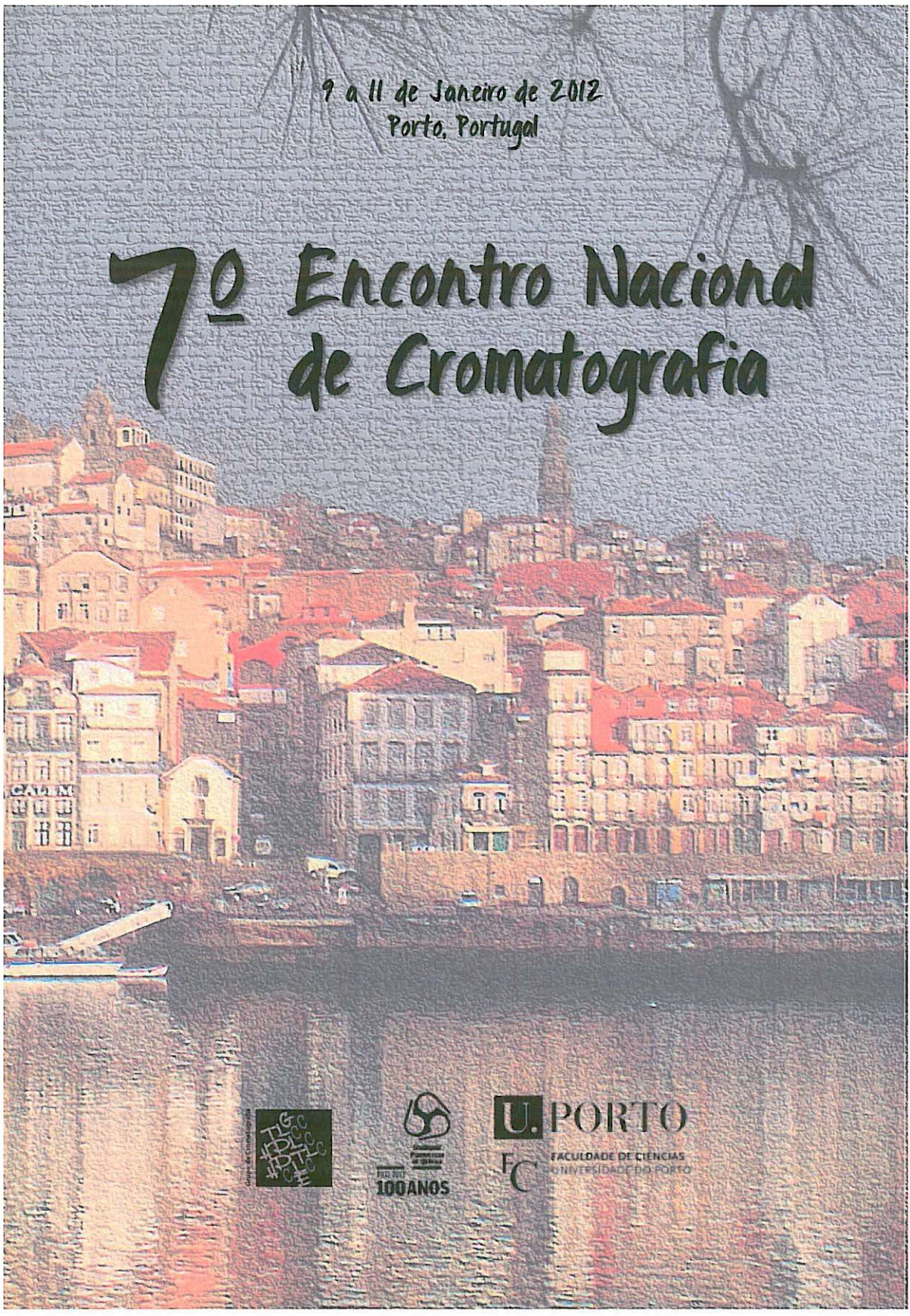

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P93. Chromatographic analyses of biomolecules in tomato (*Lycopersicon esculentum* L.) farmer' varieties from Northeastern Portugal homegardens

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Tomato (*Lycopersicon esculentum* L.) is one of the most widely consumed vegetables, being the second most important vegetable crop worldwide. It is a key component in the so-called "Mediterranean diet", which is strongly associated with a reduced risk of chronic degenerative diseases. Local populations from Trás-os-Montes (Portugal) still prefer to consume traditional vegetables (e.g. different farmer' varieties of tomato) which they find very tasty and healthy, as they are grown using extensive farming techniques. These farmer' varieties of tomato are thus being cultivated, but their nutritional composition has remained unreported until now. The main purpose of this study was to analyse biomolecules with nutritional and antioxidant properties in four non-analyzed tomato farmer 'varieties from Trás-os-Montes, widely cultivated in homegardens. The analysed components included macronutrients, individual profiles of sugars and fatty acids by chromatographic techniques, hydrophilic antioxidants such as vitamin C, phenolics, flavonols and anthocyanins, and lipophilic antioxidants such as tocopherols, β-carotene and lycopene. Furthermore, the antioxidant activity was evaluated through DPPH scavenging activity, reducing power, β-carotene bleaching inhibition and TBARS formation inhibition. One of the four varieties, which is locally known as round tomato or potato tomato, proved to be the most powerful in antioxidant activity (EC_{50} values ≤ 1.63 mg/ml) and phenolic compounds (phenolics 31.23 mg ClAE/g extract, flavonols 6.36 mg QE/g extract and anthocyanins 3.45 mg ME/g extract) and carotenoids (β-carotene 0.51 mg/100 g and lycopene 9.49 mg/100 g), while the so-called yellow tomato variety revealed interesting nutritional composition, including higher fructose (3.42 g/100 g), glucose (3.18 g/100 g), α-linolenic acid (15.53%) and total tocopherols (1.44 mg/100 g) levels. Overall, these farmer' varieties of garden tomato cultivated in the northeastern Portuguese region could contribute as sources of important antioxidants related to the prevention of chronic diseases associated to oxidative stress, such as cancer and coronary artery disease. The results validate and confirm the importance of local uses.

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