

## PORTUGUESE ENDEMIC WILD BLACKBERRIES AS AN ALTERNATIVE SOURCE OF POLYPHENOLS AND ANTIOXIDANT ACTIVITY

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*Wild blackberries, Rubus sp., polyphenols, antioxidant activity, HPLC-MS*

Blackberries are a well known source of polyphenols with high antioxidant activity that may provide human health benefits. *Rubus* is a genera with high diversity and globally distributed (Deighton et al., 2000). In the Northeast of Portugal it has some endemic species of *Rubus* (wild blackberries) that could have an interesting antioxidant activity and could constitute a good source of fruits with high polyphenolic content. The aim of this study was to determine the potential of Portuguese *Rubus* endemic species as a source of phenolic compounds as a way to preserve these species.

For three *Rubus* species fruits (*R. brigitinus*, *R. genevieri* and *R. vigo*) and a commercial blackberry cv. Apache (*Rubus rubus*) it was determined the polyphenol content (Singleton and Rossi, 1965), anthocyanin content (Deighton et al., 2000) and antioxidant activity (Cao et al., 1993, Michalska et al., 2007). It was determined the HPLC-DAD-ESI-MS profile for each species in order to identify the differences between them.

Although two endemic species (*R. brigitinus* and *R. vigo*) have higher amount of total polyphenols than commercial blackberry cultivar, their antioxidant activity and anthocyanin content are similar to the commercial species. The total polyphenols, antioxidant activity and anthocyanins content in *R. genevieri* are lower than in the commercial blackberry. Comparing the HPLC profiles, the endemic species contain a higher amount of sanguin H6, lambertianin C. Some *in vitro* studies mention the ellagitannins possessing anti-proliferative activity (Ross et al., 2007, Mertens-Talcott et al., 2003, Rao et al., 1991) and vasodilatory properties (Mullen et al., 2002). In the case of *R. vigo* it has also a higher amount of quercetin derivatives that are described in bibliography as presenting some important properties such as anti-inflammatory (Read, 1995, Orsolic et al., 2004), anti-fibrotic (Lee et al., 2003), anti-coagulative (Bucki et al., 2003), anti-proliferative (Orsolic et al., 2004), anti-bacterial (Cushnie and Lamb, 2005), anti-atherogenic (Perez-Vizcaino et al., 2006) and anti-hypertensive (Perez-Vizcaino et al., 2006, Duarte et al., 2001). The use of species with higher contents in ellagitanins and quercetin derivatives such as *R. brigitinus* and *R. vigo* could be promising in the achievement of healthier fruits for direct consumption or for addition in nutraceuticals.

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