Phenolic Total Content and LC-MS Identification, Antioxidant Evaluation of Selected Spontaneous Plants from Carnia (Alpi, north east), used in Traditional Gastronomy.

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A number of herbs and plants are traditionally used in cuisine in every areas where human live: some of them are usually cultivated, others are wild and occasionally harvested.

The area of Alps named Carnia, because of its human history as influenced by horography, too, presents a peculiar flora and gastronomic characeristics. Herbs and plants traditionally used for food, however, undergo to a uncontrolled harvesting that can compromise their survival, nevertheless, their harvesting represents an important source of money for population living in that area.

A research project was financed by Friuli Venezia Giulia Region with the aim of check for possibilities of cary out cultivation of these herbs and plants, with the objectives to preserve these species, and in the meantime guarantee an economic gain by their trade.

Plants submitted to experimentation were: Blow Sow Thistle *(Cicerbita alpine),*Corn Salad *(Valerianella olitoria),* Butcher's Broom *(Ruscus aculeatus),* Good King Henry*(Chenopodium bonus-henricus), Asparagus acutifolius,* Lovage, *(Levisticum officinale),* Bladder Campion *(Silene vulgaris), Goat's Beard (Aruncus dioicus).*

Within the frame of the research, chemical characterisation of plants were carried out and phenolic fraction was studies both as total phenolic content and identification of single compounds, antioxidant activity was also evaluated b means of two methods (TEAC and DPPH).

Traditional solvent extraction was compared to Microwave assisted extraction (MAE) and yield of extraction were compared.

Results highlighted a total phenolic (mainly flavonoids) content not so high, but similar to other plants, ranging between 0,2 and 1,4 mg caffeic acid /g plant, fresh weight, while antioxidant activity measured by means of DPPH and TEAC was not correlated to phenolic content.

HPLC-MS of extract lead us to separe and identify a number of phenolics, mainly in their glycosides form:

Luteolin-glycoside, Eriodictyol-glycoside, Luteolin-rhamnoglycoside, litospermic acid, apigenin-rhamnoglycoside, Diosmetin-rhamnoglycoside, Hesperetin-rhamnoglycoside, Eriodictyol-rhamnoglycoside and caffeic acid.

Some of these compounds like luteolin and disosmetin were demonstrated having a biological activity concerning blood circulation, mainly concerning capillary system integrity.