



## AP-15: Carob tree (*Ceratonia siliqua* L.) bioactive compounds characterization

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**Subject description:** The carob tree (*Ceratonia siliqua* L.) is an evergreen agro- forestry-pastoral species typical to the Mediterranean basin with significant socio-economic interests, mainly exploited for its fruit (pod) that has long served as a source for human and animal nutrition. Nowadays carob pulp which is a constituent of the fruit knows many applications in food industry including as a Cocoa substitute in various products and preparations.

**Objectives:** In this context and in the aim to highlight some of the biochemical compounds of carob pulp that might be at the origin of its nutritional value, we were interested in a quantitative and qualitative phytochemical characterization of carob pulp extract.

**Methods:** Carob pods are dried and decorticated of their seeds in order to obtain the pulp, and then ground into fine powder. Spectrophotometric assays to determine the Total flavonoids content according to the colorimetric methods using Aluminum trichloride and HPLC analysis for Quercetin quantification, were carried out on a methanolic extract of carob pulp powder prepared by maceration.

**Results and discussion:** The content of total flavonoids was found to be (11,26 U<sub>g</sub> QE/Mg DE), and the HPLC analysis identified the presence of Quercetin in the pulp powder extract with (0.35 mg/ml) concentration. These bioactive compounds based on many advanced researches have proven to be of a great nutritional and biological importance as antioxidant, antiproliferative ...etc. agents.

**Conclusion:** Given the results of this current study we may justify the significant value of the carob tree by its variability in term of natural bioactive constituents and we may encourage its exploitation and application in food and different industries.

**Keywords:** Carob, pulp powder, HPLC, Spectrophotometry, Total flavonoids, Quercetin.