

Determination of Polyphenols, Flavonoids and Antioxidant Capacity in Kabuli and Desi Type Chickpeas (*Cicer Arietinum* L.)

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Abstract In present scenario, scientific interest has considerably increased in natural antioxidants for use in foods and medicines to replace synthetic antioxidants. Antioxidant rich extracts from legumes have been used for prevention & treatment of complex diseases and in food preparations to reduce lipid oxidation as well as to extend shelf life. The present study examined the presence of total phenolic contents, flavonoids and antioxidant capacity of *kabuli* and *desi* type chickpeas grown in Haryana. Methanolic crude extract of seed coat, decoated dal, decoated cooked dal and whole seed were analysed in *kabuli* (var. HK-1) as well as *desi* type (var. HC-1). Four replicates of each treatment were studied. Quantitative analysis of total phenols and flavonoids were carried out by spectrophotometric techniques. Hydrophilic phenols, hydrophobic phenols and ortho-dihydric phenols were also determined. Reducing capacities were assayed as 1,1-diphenyl-2-picryl hydrazyl (DPPH) free radical scavenging efficiencies. In both of the types, seed coat extracts have maximum polyphenolic & flavonoid contents. In case of *desi* type, a highly significant correlation ($p < 0.05$) was observed between polyphenolics and antioxidant capacity which showed a higher synergic effect as compared to *kabuli*. Thus, we concluded that chickpea (*desi*) as a result of high phenolic composition act as a potent control to free radical induced oxidative damage in the cells.