

Variation of polyphenols profile in globe artichoke capitulum during harvest time

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Abstract

Globe artichoke contains several polyphenols such as phenolic acids and flavonoids, which are highly desirable in diet, because of their beneficial effects on human health. The qualitative and quantitative profile of these compounds is affected by several factors such as genotype, part of plant, postharvest storage, industrial processing and agronomic factors. Amongst the latter, the harvest time, appears to be very important, due to the different weather conditions experienced during the harvest period. In this respect, we observed as the qualitative and quantitative profile of phenolic acids (caffeoylquinic acids) and flavonoids (apigenin and luteolin group) in globe artichoke capitulum was influenced by the harvest time. Our results showed that the qualitative and quantitative of caffeoylquinic acids, apigenin and luteolin group profile was significantly dependent on the harvest time. The highest value of total measured polyphenols was recorded in February (13.7 g kg⁻¹ of DM), followed by April (7.9 g kg⁻¹ of DM). On the contrary, the lowest value was found in November and December. Regardless of harvest time, the main compounds were the caffeoylquinic acids, followed by apigenin group (on average, 3.1 and 2.3 g kg⁻¹ of DM, respectively). Overall, this study, although limited to the polyphenols profile, allowed to establish as the nutritional value of the capitulum varies during crop cycle, to indicate the capitulum as potential natural source of caffeoylquinic acids, apigenin and luteolin group for food and pharmaceutical applications.