

Valorising Black Chickpea

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The potential of black chickpea to improve human nutrition and the environment

Chickpea is the second major pulse crop used as food (after dry beans). India is the leading producer, with approximately 73.5% of global production (FAOSTAT, 2022). It occurs mainly in two varieties: *Kabuli*, with large, beige-coloured seeds; and *Desi*, with small, rough and black or brown coated seeds.

Black chickpea is currently at risk of genetic erosion. It holds large potential in food innovation, specially due to its high content in antioxidant compounds. Hence it can play an important role in healthy and sustainable diets. Further research and development strategies are lacking but much needed, to encourage European farmers to invest in its cultivation.

Methodology

This work was performed at Universidade Católica Portuguesa (Portugal). Although national chickpea production is increasing, **Portuguese consumers are not familiarized with black chickpeas**, which can be a hindering factor to this value chain. Hence, a double approach for black chickpea valorisation was applied:

Nutritional characterization

The mineral profile, nitrogen and protein content and different phytochemical analyses were performed to raw and cooked chickpea (white and black seeds).

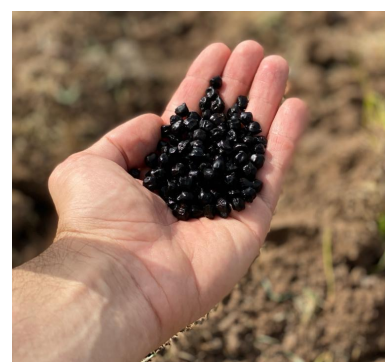
Product development and sensorial analysis

A food product was developed using the black chickpea. Sensorial analysis was performed, comparing this to a counterpart made with white chickpea.



RADIANT

Together with a local farmer – **Luís Batista** – the project is promoting a collaborative work to improve research and innovation and agricultural production of black chickpea. The farmer is multiplying seeds and increasing local production and aims at implementing a **dynamic value chain for this underutilized legume**.





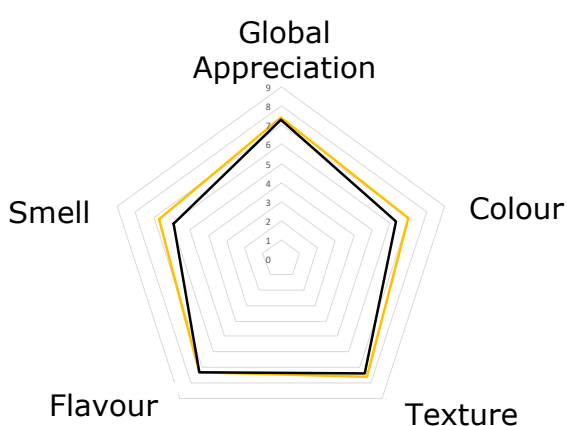
Black chickpea production field at Loures region (Portugal), by farmer Luís Batista.

Nutritional analysis

Significantly **higher protein content**, antioxidant capacity and carotenoids concentration were observed **in raw grains of the black chickpea** when compared to the white cultivar.



— White chickpea
— Black chickpea



Food product development and sensorial analysis

The developed product with black chickpea had a **similar 'global appreciation'** to that of the white chickpea.

Lower scores were attributed to 'smell' and 'colour', both parameters influenced by visual perceptions.