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**The quality of pasta added with cardoon inulin: Evaluation of the part of the plant used for extraction of polymer**

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**Statement of the Problem:** The plants of cardoon (*Cynara cardunculus* L.) accumulate inulin both in the roots and in the receptacles. The yield of inulin in the heads is quite high; lower costs and greater ease of collection than the roots, led to an initial evaluation of this polymer as ingredient to functionalize pastas.

**Methodology & Theoretical Orientation:** Roots and heads were obtained from cardoon plants at the flowering stage. The crop was two years old. The inulin has been extracted, purified and characterized from both sources. Purified inulins were added to durum wheat semolina at 4% (w/w), to produce spaghetti. Pasta without inulin was used as control. The pastas were evaluated for: color (Minolta colorimeter CR, 400), cooking time (minutes), cooking quality, loss of inulin (HPAEC-PAD, Thermofisher) in cooking and sensorial qualities (panel test).

**Findings:** The inulin content of roots and capitula were 780 and 300 g kg<sup>-1</sup> dm respectively. In the pastas with the addition of inulin from heads it has been noticed an increase in the L\* value, and an increase in overall quality (7.0) vs. the control (5.95) and the spaghetti containing roots of inulin (6.76). On the contrary there was a greater cooking loss of the polymer (-31%) than that recorded in the pasta with roots inulin (-27%).

**Conclusion & Significance:** Despite the overall quality (panel analysis) of the pastas obtained with head inulin was good, the highest loss of the polymer during cooking, the lowest content in the receptacle in terms of yields, imply an increase of the concentration at the initial phase, making the use of roots more sustainable for inulin extraction than heads.

**Biography**

Carla Sillitti is a PhD student of the University of Foggia. She is carrying out her PhD work in collaboration with CNR-ISAFOM in Catania. She has completed her Master's in Health Biology. She is developing a project to produce new nutraceutical food, a type of pasta, based on the use of ancient Sicilian whole meal and inulin. Many studies were carried out to define the best type of semolina and inulin to be added. She is interested in nutraceutical food and food quality, as well as nutrition and human health.

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