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Production of spaghetti enriched with high protein sicilian lentils: First results

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Statement of the Problem: Sicily has a rich biodiversity of lentil (*Lens culinaris*) populations well adapted to small microclimate of the insula. A large work of chemical characterization has been conducted and some population resulted characterized by a good amount of fiber and protein vs. commercial varieties. An alternative way to valorize this germplasm and encourage people to consume grain legumes could be enriching pastas with Sicilian lentils.

Methodology & Theoretical Orientation: Spaghetti enriched with lentil cultivated in Ragusa (proteins equal to 28%), compared with pastas enriched with commercial lentil (proteins equal to 24%) were produced, using commercial durum wheat with: (1) 40% (w/w) commercial lentil; (2) 40% (w/w) lentils Ragusa, (3) 40% (w/w) commercial lentils + 2% carboxymethyl cellulose (CMC) and (4) 40% (w/w) of lentils Ragusa + 2% of CMC. Commercial durum wheat was used as control. On the raw and cooked dried pasta sensory analysis were conducted through a panel group and the color indices L*, a*, b* were evaluated by Minolta colorimeter, CR 400.

Findings: The addition of 2 types of lentils has resulted in a decrease of the quality of dried pasta "1" and "2", due to the high adhesiveness. The use of CMC has improved all sensory parameters, interacting with lentils used: pasta "4" was more acceptable than pasta "3", because it is less adhesive and less fibrous. The grain of the "Ragusa" lentil presented indices L* which was higher and so also pastas "2" and "3" vs. pastas "1" and "3".

Conclusions & Significance: Pastas enriched with Sicilian lentils can potentially satisfy consumers. Thanks to the high protein content and acceptability. Further studies are ongoing to improve rheological, sensory and chemical features of pastas.

Biography

Antonella Pagliaro is a PhD student in Health Food Innovation and Management of Foggia University. She works at CNR-ISAFOM in Catania. She has a graduation degree in Biological Science (2012) and a Master's degree in Health Biology (2014). Now she is working on new types pasta that have the potentiality to decrease cholesterol and fight obesity, using different cultivars of durum wheat, added with biomolecules extracted from typical Sicilian germplasm and using mixture of other cereals, rich in β -glucans. The project wants to solve technological problems to obtain the new types of pasta, evaluating the effect of the addition on the rheological properties of the dough, the organoleptic properties of fresh and dry pasta obtained and the nutraceutical properties of the final products.

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