**Can the combination of two Apulian Traditional Agri-food Products generate a superfood? The case of functional taralli with *Pleurotus eryngii***

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**Abstract**

Taralli is a popular bakery snack food from the south of Italy that has gained worldwide popularity. It is considered a savoury snack or bread substitute and is part of a niche market of Italian food certified as Apulian Traditional Agri-food Products (PAT) [1]. Taralli are ring-shaped baked goods with a texture similar to breadsticks, made using specific ingredients such as flour, wine, vegetable oil, salt, and sometimes fennel seeds or other herbs/spices [2]. In the last decade, the growing demand for foods with high nutritional value, that promote health encourages the food industry to develop research toward innovative products containing higher concentrations of nutrients with bioactive components [3]. At the same time, there has been growing interest in adding mushroom powders or extracts to commonly used foods because of high nutritional value and unique flavour and aroma [4]. Their functional properties have been demonstrated in several studies, specifically the enrichment of grain-based foods with mushrooms increased the total availability of vitamins, minerals, fibres, beta-glucans, and antioxidants [5]. *Pleurotus eryngii* (DC.) Quél. is a widely cultivated edible mushroom known as food and a natural source of bioactive compounds [6], especially dietary fiber, and is also included among Apulian PATs as “Cardoncello”. In this investigation, we developed functional taralli with improved nutritional properties including *P. eryngii* powdered (PeP). Control samples of taralli were prepared using a mixture of semolina and stone-ground whole meal semolina (1:1), sunflower seed oil, white wine, salt, and baking powder, while fortified taralli were prepared by replacing semolina mixture with PeP respectively 5% and 10% (w/w). Sensory analysis showed, no significant differences between the control and experimental trials for most of the descriptors considered. Preliminary analysis showed that the addition of PeP affected texture and colour parameters. Analyses of nutritional value and bioactive molecules such as beta-glucans and polyphenols are ongoing. Antioxidant activities are being evaluated by in vitro assays for the DPPH (2,2-Diphenyl-1-picrylhydrazyl), ABTS (2,2′-Azinobis-(3-Ethylbenzthiazolin-6-Sulfonic Acid)) radicals scavenging and FRAP (Ferric Reducing Antioxidant Power Assay).

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