

Investigating the antifungal effect of Iranian chestnut flour on *Penicillium expansum* and *Aspergillus niger*

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ABSTRACT:

Numerous studies have demonstrated the antimicrobial properties of the Iranian chestnut. This fruit can be used as a natural preservative to increase the shelf life of food. *Penicillium expansum* and *Aspergillus niger* are considered as important molds in food spoilage, including bread, fruit and vegetables. The purpose of this study is to evaluate the anti-fungal effects of Iranian chestnut flour on *Penicillium expansum* and *Aspergillus niger*. For this purpose, Sabouraud dextrose agar was used by adding 0.5 and 1 % of the chestnut flour and wheat flour along with a control (without flour). Then, the fungal suspension containing the spores of *P. expansum* and *A. niger* was cultured and the results were recorded. The results showed that *A. niger* was extremely sensitive to the chestnut flour as there was no evidence of growth in the presence of 0.5% chestnut flour. However, the growth of *P. expansum* was well in 0.5% chestnut flour, but its growth was greatly reduced by increasing the chestnut flour in the medium to 1%. The results show that Iranian chestnut flour contains strong amounts of anti-fungal compounds and so it was able to control the growth of *P. expansum* and *A. niger*. Thus, it could be suggested as a natural preservative to control food spoilage and bakery products.

Keywords:

Chestnut, *Penicillium expansum*, *Aspergillus niger*, antifungal compound