

TITLE: ANTIBACTERIAL ACTION OF *IN NATURA* MUSHROOMS

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ABSTRACT:

The mushrooms belong to the Kingdom Fungi, are macrofungi and represent the fruiting of groups belonging to the Ascomycetes and Basidiomycetes divisions. Considered as valuable food, they have the following characteristics: low in calories, fats and essential fatty acids; and rich in proteins, vitamins and minerals. There are also reports of other properties, such as antimicrobial, anti-tumor, immunomodulatory activities, and ability to inhibit platelet aggregation, reduce blood cholesterol concentrations, prevent or alleviate heart disease and reduce blood glucose levels. The objective of this study was to evaluate the antimicrobial activity of three varieties of *in natura* mushrooms belonging to the species *Lentinula edodes* (shiitake), *Pleurotus djamour* (pink oyster mushroom) and *Pleurotus ostreatus* (white shimeji). Aqueous and alcoholic extracts of the three varieties were used to evaluate the possible antimicrobial activity of the mushrooms. The extracts were impregnated into 6 mm diameter filter paper disks for antibiogram and the disks were placed in Petri dishes with appropriate culture media pre-inoculated with the following microorganisms: *Bacillus cereus*, *Bacillus subtilis*, *Escherichia coli*, *Salmonella* Enteritidis, *Salmonella* Typhimurium and *Staphylococcus aureus*. The plates were subsequently incubated at 35 °C / 24-48 hours. Inhibition halos equal to or greater than 10 mm were considered to have an effective antimicrobial action. The highest inhibitory activities were verified for the alcoholic extracts of white shimeji against *E. coli* and pink oyster mushroom against *S. Typhimurium* (25 mm halos). *S. Enteritidis* was effectively inhibited by the largest number of extracts (three). The alcoholic extract of white shimeji was more efficient, resulting in a larger spectrum of action; since it effectively inhibited all microorganisms.

Keywords: antimicrobial activity, white shimeji, *Escherichia coli*, *Salmonella* Enteritidis.