

## ASSESSMENT OF THE MICROBIOLOGICAL PROFILE OF THE FOODS OF PEDIATRIC AGE

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### Abstract

Baby food comes in different varieties. They are soft and liquid paste and produced for the nutritional needs of infants between six months and two years. Through their healthy use, pediatric ages gain the necessary macronutrients and micronutrients, to strengthen the whole organism and specific organs as inners, teeth, bones, etc. Packaged baby foods are subject to strict control standards established by law, to ensure their microbiological purity, but in many cases are used for a long period of time as opened, or partially packaged, in home conditions or in nursery (children's garden). A cooperation between two Albanian Universities, University of Tirana and University of Medicine of Tirana was realized in order to evaluate the presence of microorganisms in some brands of baby food, known and widely used for pediatric age. The aim of the common experimental work was to construct the microbiological profile of the selected samples, to create a modest work collection and to use it in the observation of the distribution of microorganisms in foods of pediatric age, including the permanent or occasional presence of isolated strains.

The samples analyzed were: cereal based complementary food; powdered milk for use in infants from 0 - 6 months of age; powdered milk for use in infants from 6 - 12 months of age; and fruits and vegetables soft baby food. Determination of total number of microorganisms using the viable count method (spread count method and pour count method), and the isolation of their most widespread species were an integral part of the experimental work. Isolated strains obtained were identified using methods of classifying and identifying microorganisms. Disc-diffusion and broth dilution tests, to minimize the development of microbial pollutants, were applied on selected colonies in order to have safe food and to contribute to a healthy diet for this sensitive category of the population.

A significant difference was observed in the presence of the microbiological load in packed and open samples (in some cases about 10 times more in open samples). Natural functional foods as lemon and blueberries juices were used to reduce the development of some isolated strains as bacilli, micrococci and some microorganisms of *Ascomycetes* (*Aspergillus* species). Very positive results were achieved (in some cases a 30% reduction of the development of contaminant microorganisms).

In conclusion, endemic microorganisms and incidental contaminants were present in baby foods. About thirty species were isolated and identified. 80% of them were very sensitive toward acidic juices of fruits preventing so their microbial growth.

**Key words:** Pediatric age, Microbiological profile, Healthy food, *Ascomycetes*, *Aspergilli* species.