

MICROBIOLOGICAL CONDITION OF “EGGSHELL FLOUR” IN THE FOOD INDUSTRY

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Abstract

There is an enormous need for calcium in both animal feed and human food - calcium in the proper quality, quantity and form. To meet this need, an egg producer could have an annex plant that produces “eggshell flour”, a product whose basic component, egg shells, is a virtually boundless material that accumulates as waste. Thus produced, egg shell flour could be dispensed in various quantities to various food producers and feed producers.

The experiments were designed to determine the microbiological condition of egg shells. Following the customary handling, shells were broken into bits and heat treated (drying air temperature was 125 °C). Samples were diluted with cluster decimation and the total viable cell count and *Enterobacteriaceae* count was determined. Also, the samples were tested in 25 g amounts for the presence of *Salmonella* (Examination method: ISO 6579) as well as *Listeria monocytogenes* (Examination method: MSZ EN ISO 11290-1:1998).

According to the results, egg shell flour does not damage certain products' sensory characteristics and usability, and it poses no risks to food safety, either. After heat treatment, the samples displayed no signs of the pathogen *Enterobacteriaceae*, while the viable cell count remained under 10 CFU/g in every case.

This means egg shell flour may be used as a basic ingredient in both the food and feed industries, due in part to its low microbial risk. Naturally, further tests are required to determine shelf life as well as which packaging should be used for storage and merchandising.

Key words: *Egg shell, Calcium, Salmonella.*