PROLONGATION OF LIQUID WHOLE EGGS' SHELF LIFE WITH DIFFERENT METHODS

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The aim of our study was to examine the effect of preservatives used in general practice on the shelf life and calorimetric properties of salted, pasteurized liquid whole egg. The added preservatives included sodium benzoate, potassium sorbate and their mixture in 1:1 ratio. First, 15 samples were made with different concentrations in the range of 250-5000 mg/L of each preservatives, and an expert sensory panel determined the concentrations that did not greatly affect the sensory properties of scrambled eggs made from the samples. Samples of these concentrations were subjected to a 4-week storage experiment in which their microbiological status was investigated. We defined total plate count and the number of Enterobacteriaceae of the different samples with plate counting method ones a week. Samples were considered appropriate if their total number of bacteria did not reach 105 CFU/g and the number of Enterobacteriaceae was less than 102 CFU/g according to Hungarian regulations. Calorimetric properties were examined with MicroDSC III instrument on the first day. Liquid egg samples were heated up from 20°C to 95°C with a heating rate of 1.5°C/min. We used distilled water as reference solution. The device of evaluation was Callisto Processing software. Statistical analysis was performed by IMB SPSS Statistics 22.0 software. In our studies, we found that 2250 mg/l of potassium sorbate, 1000 mg/l of sodium benzoate and 2000 mg/l of the mixture did not change the sensory characteristics. By adding potassium sorbate, the 10-day long shelf life can be increased for about 4 weeks. In addition, it was found, that preservatives in the added concentrations did not significantly affect the calorimetric properties of the product.