E446

Effects of heat treatment parameters and fruit pulp concentration on pH and colour of an egg white based cottage cheese replacement product

Adrienn Tóth ; Csaba Németh ; István Dalmadi ; Attila Nagy ; László Friedrich
Hungarian University of Agriculture and Life Sciences, Center of Food Technology Capriovus Kft.

Whey protein allergy and lactose intolerance cause the most common nutritional problems for the European population.An opportunity is the development of egg white based substitutes which has a high nutritional value, as long sensorial characteristics are modified. This work goals the development an egg white based cottage cheese substitute. The „plate" egg white product was flavored with sweetener (erythritol, 15m/m%) and redberries pulp (3.1-36.8m/m%) in different ratios and heat treatments was used at different temperatures (34.7 – 75°C) and times (1.63-8.36 hours). The concentrations and hparameters were determined by a central composite design (CCD). After treatment, samples were cooled and stored for 14 days at 2 – 6°C. The pH, color (L*, a* and b*, CIE Lab system), sensorial attributes (color, texture, taste, sweet & fruit flavor and overall impression with 10 expert panellists, 1-10 points) and microbiological changes (total mesophyll aerobe cell count, Enterobacteriaceae, Salmonella spp. and Listeria spp. according to the standard MSZ EN ISO 5534:2004) were investigated on the days: 0, 7 and 14. Color of samples was influenced by fruit concentration and heat treatment temperature but not by the storage time, as long pH and microbiological counts were most significantly increased during storage. Sensorial attributes were found as excellent and good. The higher fruit concentration was used, the higher points were given to samples. During storage just a sightly decrease was found in the points of sensorial tests. According to our results, the different parameters applied, resulted statistically significant changes, e.g., a* (redness) was significantly influenced by the fruit pulp concentration. Due to CCD, response surfaces were fitted to almost all examined parameters. Our research is supported by the project VEKOP-2.1.1-15-2016-00149 and EFOP-3.6.3-VEKOP-16-2017-00005 projects we are very thankful for that.