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

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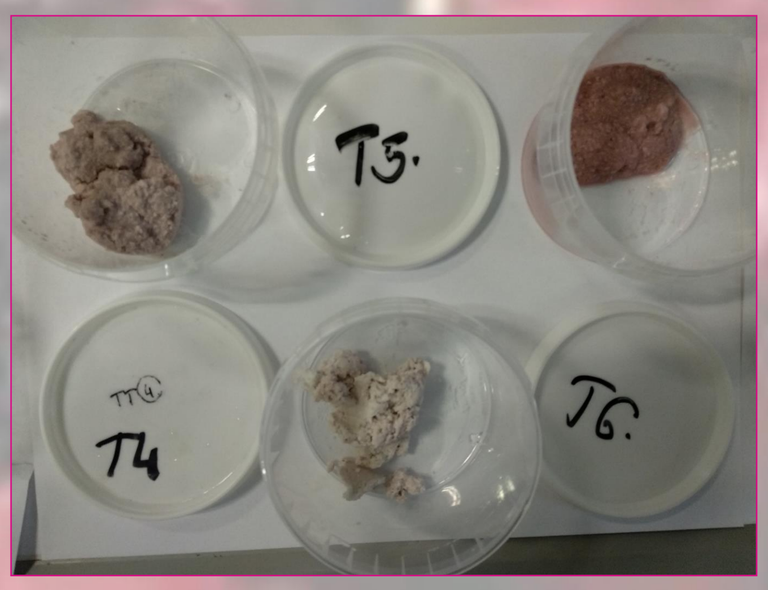
Whey protein allergy and lactose intolerance cause the most common nutritional problems for the European population. This work goals the development an egg white based cottage cheese substitute.

An egg white product was flavored with sweetener (erythritol, 15m/m%) and redberries pulp (3.1-36.8m/m%) and heat treatments was used with different parameters (34.7–75°C, 1.63-8.36 hours). The parameters were determined by a central composite design (CCD).

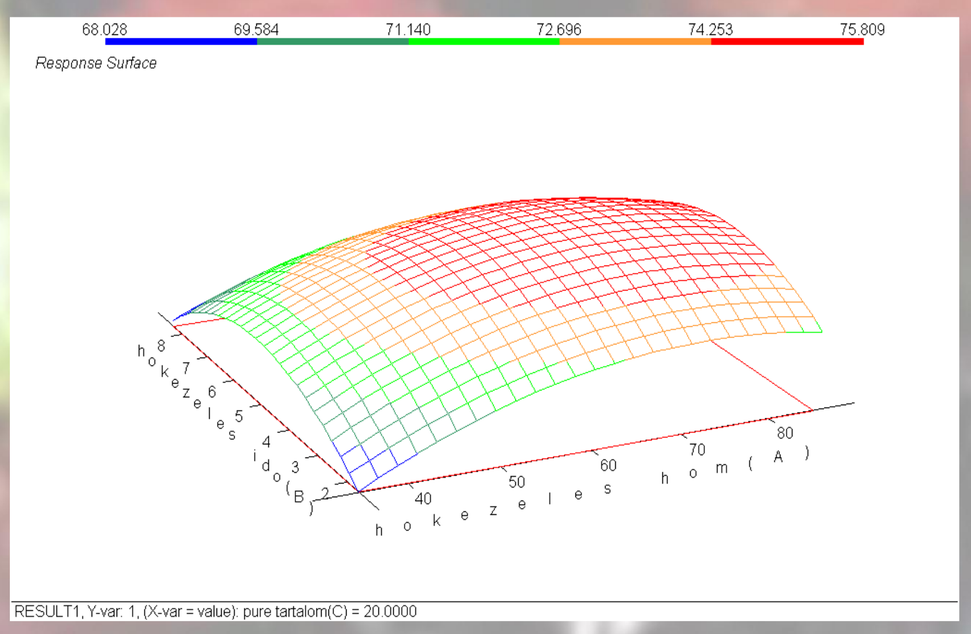
	Temperature of heat treatment (°C)	Time of heat treatment (h)	concentration of fruit pure (m/m%)
***L:A-a**	34,77	5	20
***H:A-a**	85,23	5	20
***L:B-a**	60	1,64	20
***H:B-a**	60	8,36	20
***L:C-a**	60	5	3,18
***H:C-a**	60	5	36,81
Cube001a	45	3	10
Cube002a	75	3	10
Cube003a	45	7	10
Cube004a	75	7	10
Cube005a	45	3	30
Cube006a	75	3	30
Cube007a	45	7	30
Cube008a	75	7	30
Cent-a	60	5	20
Cent-b	60	5	20
Cent-c	60	5	20

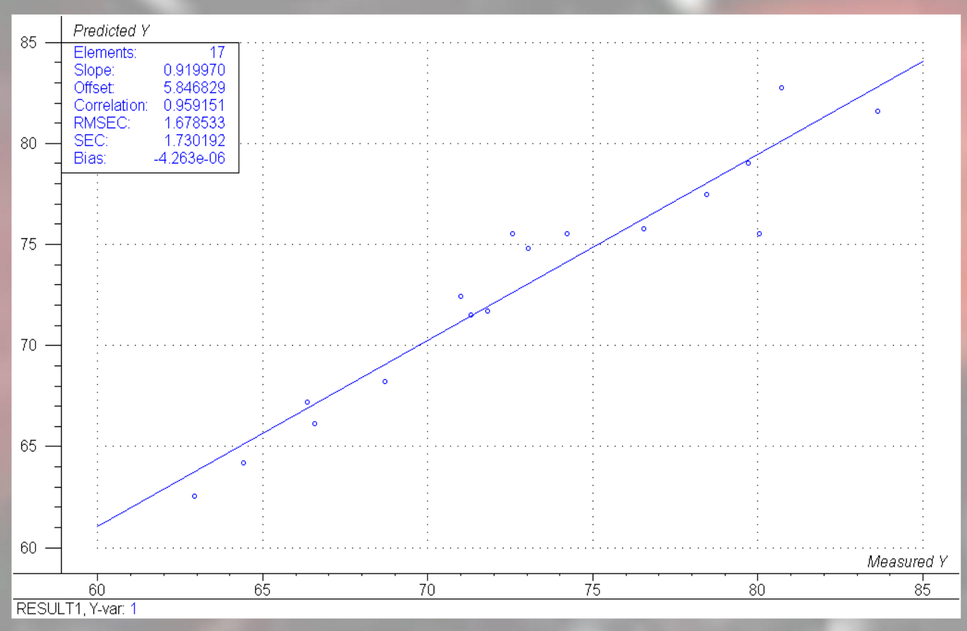
The pH, color, sensorial attributes and microbiological changes (total mesophyll aerobe cell count, Enterobacteriaceae, Salmonella spp. and Listeria spp.) were investigated on the days: 0, 7 and 14.

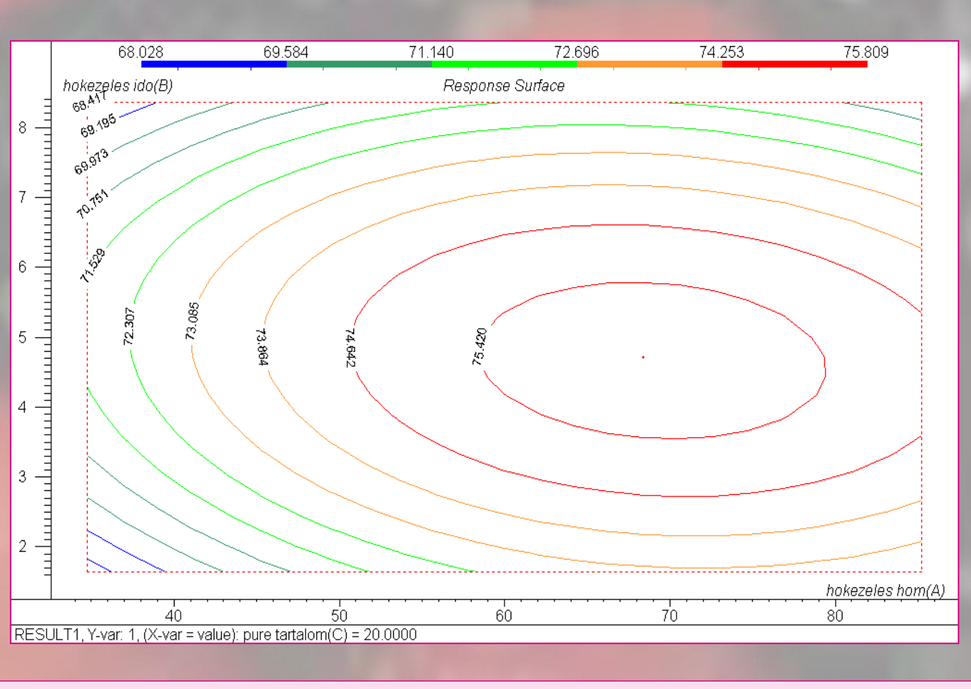


Color of samples was influenced by fruit concentration and heat treatment temperature but not by the storage time, as long pH and microbiological counts were most significantly increased during storage.

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.







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