



Effect Of The Heat Treatment Time On The Whey Cheese Yield

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Cheese produced by thermal denaturation, followed by aggregation and precipitation of the whey proteins is known as whey cheese. Lactic acid bacteria are not included in the production, therefore, whey cheese does not require a ripening period. The whey cheese shelf-life is notably shorter compared to other cheese types due to the higher moisture quantity and high water activity value. Urda is Macedonian whey cheese with a long tradition usually obtained from whey that is a byproduct of the production of semi-hard yellow cheese such as Kashkaval or „Beaten“ cheese from sheep and cow milk.¹

The study aimed to investigate the impact of the duration of thermal treatment of the whey on the Urda yield. Whey was obtained as a byproduct of the standardized industrial production process of white brined cheese and Kashkaval from cow's milk. The yield was calculated as Urda quantity obtained from 1L whey.²

The formation of the first whey cheese aggregates was observed after reaching a temperature of 70°C. The dependence of yield from the thermal treatment time had a sigmoid shape. In the period from 50 to 130 min, maximal values for whey cheese yield were achieved at 100 min or after holding for 20 min at 90°C temperature. The yields of whey cheese decreased linearly in the period between 100 and 130 min, which is related to the losses as a result of the whey foaming during the process and also, an increase of whey cheese dry matter with prolonged thermal treatment.

Keywords: Whey, thermal treatment time, whey cheese, yield.

References:

1. Chadikovski A., Klopchevska J., Velickova E. and Rafajlovska V. (2022). The effect of whey type on the yield and quality characteristics of Urda. *Mljekarstvo*, 72(3), 151–160.
2. AOAC (2006): Official Methods of Analysis. 18th ed. Association of Official Analytical Chemists International, Gaithersburg, Maryland, USA.