

THE USAGE OF WHEY POWDER INSTEAD OF LACTOSE IN CULTURE MEDIA

G. Özlük Çilak^{1*}, B. N. Apa², A. K. Halkman¹

¹⁾ Ankara University, Faculty of Engineering,
Dept of Food Engineering, Ankara, Turkey

²⁾ TED Ankara Koleji, Ankara, Turkey

It is known that whey, the watery by-product of the cheese released during the manufacturing process, has a rich nutritional content and considered as a wastewater pollutant due to the high level of microbial load. Cheese whey powder consists of 5-6% of lactose and 0.8-1% of protein, so it is recycled to obtain lactose and protein; however, this recycling process is not economically profitable owing to the energy consumption. In this study, whey was used in several culture media, considering that it can be used instead of lactose, without the necessity of energy consumption processes. 4 different culture media such as Plate Count Agar, Mac Conkey Agar, Violet Red Bile Agar and Lactose Broth, each of which was modified, were permeated with the same proportion of whey and lactose separately to compare the effects on coliform bacteria count. Tryptic Soy Agar, which includes neither lactose nor whey, was used as control media and all the plates were inoculated with *Echerichia coli* ATCC 25922 and *Klebsiella pneumonia*. In consequence of 7 repetition of the analysis, it was observed that there is statistically no difference ($P>0.05$) between any of the media. This result shows whey can be used instead of lactose in any of the coliform culture media.

Keywords: Whey, lactose, media, coliforms

* Corresponding author: gizem.ozluk@gmail.com