



**SUPERHEATED STEAM TECHNOLOGY-ASSISTED
PASTEURIZATION FOR MILK:
NUTRITIONAL COMPOSITION AND HEAVY METAL
CONTAMINANT ANALYSIS**

By

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Sekian, terima kasih

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PASTEURISASI BERBANTU PEMANASAN WAP LAMPAU UNTUK SUSU:
ANALISIS KOMPOSISI NUTRISI DAN BAHAN CEMAR LOGAM BERAT

ABSTRAK

Proses rawatan haba susu mentah adalah penting dalam menghilangkan atau mematikan organisma patogen dan perosak yang ada untuk memastikan susu yang diproses selamat untuk diminum seterusnya memanjangkan jangka hayat susu. Pasteurisasi yang dibantu pemanasan wap panas lampau dianggap sebagai alternatif untuk kaedah pasteurisasi konvensional kerana penggunaan tenaga yang rendah dan keberkesanan dalam penyahaktifan aktiviti mikrob dalam makanan. Dalam kajian literatur yang panjang ini, kesan pasteurisasi dibantu pemanasan wap panas lampau terhadap komposisi nutrisi dan tahap bahan cemar logam berat telah disiasat. Didapati bahawa belum ada bukti berkaitan objektif kajian ini kerana kurangnya kajian dalam bidang ini. Walau bagaimanapun, proses pasteurisasi yang dibantu pemanasan wap panas lampau mempunyai potensi untuk menggantikan kaedah pasteurisasi konvensional dalam industri jika lebih banyak kajian dilakukan pada masa akan datang untuk menyiasat kesan proses ini terhadap komposisi nutrisi susu dan tahap bahan cemar logam beratnya.

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ABSTRACT

The heat treatment process of raw milk is important in eliminating or inactivating pathogenic and spoilage organisms present to ensure the processed milk is safe for consumption and further extend the shelf life of milk. Superheated steam-assisted pasteurization is considered as a possible alternative to conventional pasteurization method due to low energy consumption and the effectiveness in the inactivation of microbial activity in food. In this extended literature study, the effects of superheated steam-assisted pasteurization of milk on its nutritional composition and heavy metal contaminant level was investigated. It is found that there are yet no evidence of the intended objectives of this study due to a lack of research in this area. However, superheated steam-assisted pasteurization process is possible to replace the current conventional pasteurization method in the industry if more research is done in the future to investigate the effects of this process on milk's nutritional composition and its heavy metal contaminant levels.