**R**esearch **P***A*per

International Journal of Agricultural Engineering / Volume 12 | Issue 1 | April, 2019 | 142-148

⇒ ISSN-0974-2662 Uisit us : www.researchjournal.co.in DOI: 10.15740/HAS/IJAE/12.1/142-148

## Energy assessment of milk pasteurization in dairy plant

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Received : 18.01.2019; Revised : 26.02.2019; Accepted : 16.03.2019

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## **Balwant Singh**

Department of Agriculture Engineering, Sardar Vallabhbhai Patel University of Agriculture and Technology, **Meerut** (U.P.) India Email : balwants651@ gmail.com ■ ABSTRACT : Energy is critical component of dairy industry. Dairy industry depends on fossil fuels for energy supply. Energy conservation in dairy plant means to develop a methodology to achieve energy saving to reduce energy costs in processing system. The aim of experiment was to investigate average quantity of milk, electricity consumption in per day. The data was analyzed of November 2016, December 2016 and January 2017 for old alfa pasteurizer in Parag dairy Meerut. The highest average quantity of milk, electricity consumption and thermal energy in shift B of November was 520.17 kg, 17.36 (KW) and 144.08(KJ×103), respectively. The lowest average quantity of milk, electricity consumption and thermal energy in shift A of November was 14 kg, 0.47 (KW) and 3.88 ( $KJ \times 10^3$ ). Followed by The highest average quantity of milk, electricity and thermal energy consumption in December was 224.80 kg, 7.50 (KW) and 62.0 (KJ×10<sup>3</sup>) in shift B and the lowest collection of milk 14.04 kg, electricity consumption average 0.47 (KW) and thermal energy consumption 3.78 (KJ×103) in shift A of old alfa pasteurizer. Old alfa pasteurizer's highest average quantity of milk in January (2017), 111.78 kg, electricity consumption average was 3.73 (KW) and thermal energy consumption 31.07 (KJ×10<sup>3</sup>) in shift B while lowest average collection of milk, electricity and thermal energy consumption was 42.26 kg, 1.41 (KW) and 11.79 (KJ×10<sup>3</sup>) in shift C, respectively.

**KEY WORDS :** Energy audit, Dairy plant, Electrical energy, Thermal energy

■ HOW TO CITE THIS PAPER : Singh, Balwant, Chandra, Suresh, Kumar, Ratnesh, Chaudhary, Vipul, Kumar, Vikrant, Sunil and Kumar, Rahul (2019). Energy assessment of milk pasteurization in dairy plant. *Internat. J. Agric. Engg.*, **12**(1): 142-148, **DOI: 10.15740/HAS/IJAE/12.1/142-148.** Copyright@2019: Hind Agri-Horticultural Society.