

O 9. COMPARISON OF ENERGY EFFICIENCY OF DAIRY FARMS WITH LOOSE HOUSING SYSTEM HAVING DIFFERENT DAIRY COW CAPACITIES AND DETERMINATION OF OPTIMUM DAIRY FARM CAPACITY#

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ABSTRACT: Energy is an important resource with an indispensable place in human life. Energy efficiency is very important for the sustainability of human life and agricultural production. The main aim of this study was to determine optimum animal capacity for dairy farms with loose housing in terms of energy efficiency. The second aim was to evaluate the energy efficiency of dairy cow farms having different animal capacity with loose housing system, widely used in dairy cattle breeding. The data of this research was collected by survey method which was carried out face to face with owners of 16 dairy farms with loose housing in Konya region, Türkiye. All data obtained from this study were applied one-way ANOVA. Examined dairy cow farms were evaluated under four different animal capacity (farm animal capacity; 1-49, 50-99, 100-149, 150 and above animals). In this research, energy use efficiency, energy productivity, and specific energy were calculated as 0.130±0.005, 4.33±0.17 L/100MJ and 23.23±0.95 MJ/L for I.group; 0.157±0.013, 5.24±0.45 L/100MJ and 19.58±1.91 MJ/L for II.group; 0.096±0.003, 3.21±0.107 L/100MJ and 31.30±1.05 MJ/L for III.group; 0.125±0.008, 4.18±0.26 L/100MJ and 24.27±1.65 MJ/L for IV.group, respectively. According to the results of this study, dairy farms with loose housing system having 50-99 dairy cows have more advantageous in terms of energy efficiency in dairy cattle breeding.

Keywords: Dairy cow farm, energy use efficiency, energy productivity, loose housing system, specific energy

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