# O 31. INVESTIGATION OF MECHANIZATION LEVELS AND ENERGY EFFICIENCY OF DAIRY CATTLE FARMS IN EREĞLI DISTRICT OF KONYA PROVINCE

Mehmet Zahid MALASLI[1*], Doğukan GAZAZ[1]

[1]*Department of Biosystems Engineering, Ereğli Faculty of Agriculture, Necmettin Erbakan University, Ereğli, Konya, Türkiye*

E-mail*: mzmalasli@erbakan.edu.tr, gazaz_dogukan@outlook.com*

**ABSTRACT:** In this research, a survey was conducted in Konya Province Ereğli District for the mechanization level and energy management of dairy cattle businesses with at least 500 cattle, determined with the data received by the Ereğli District Directorate of Agriculture and Forestry. For this purpose, face-to-face surveys were conducted with 10 businesses. In the survey, to determine the level of mechanization; Information such as characteristics of operators and employees, general and structural characteristics of businesses, and mechanization features of businesses are included. In addition, the energy usage status of the enterprises and the potential of rooftop solar power for energy efficiency were determined with the PV SYST program.

According to the data obtained, it was determined that there were an average of 770 cattle in the businesses. While 40% of the businesses produce only animal products, 60% produce both plant and animal products. The average number of tractors in the enterprises is 5, the tractor age is 7 years, and the average tractor power is 63,4 kW. 80% of the tractors used in businesses are 4wd and 20% are 2wd. The total monthly electricity consumption of the businesses were calculated as 1,617,935 kW/month, and the annual electricity consumption were calculated as 16,942,801 kW/year. The average roof area where potential solar panels can be installed in businesses is 4230 m2. It has been determined that solar panels with a power of 1415 kWp can be installed in these areas.

*Keywords: Energy Efficiency, Dairy Cattle Farming, Ereğli, Mechanization Level, Solar Energy.*