**THE DETERMINANTS OF CARBON FOOTPRINT IN DAIRY** **INDUSTRY**

**ABSTRACT**

*Climate change is a cause of the high levels of greenhouse gases (GHGs) in the atmosphere. Carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), ozone (O3), chlorofluorocarbons (CFCs), and hydro fluorocarbons (HCFCs) are the important GHGs. Carbon footprint is calculated as the total GHGs emitted during the human life of activity, expressed as CO2 equivalent* *(CO2eq). It provides an estimate of the environment the human damage. According to the World Health Organization, despite COVID-19 setbacks, global greenhouse gas emissions have increased in 2020. The changing climate with increasing greenhouse gas would cause significant losses in the economy, environment, and human life in the absence of effective prevention.* *For this reason, the main sources of greenhouse gases should be determined, and measures should be taken to reduce them. Food production accounts for 30% of the world's total GHGs emissions and has a significant impact on the environment. The primary reason for the environmental impact of the food chain, dairy industries, and meat processing is that they are known to be high energy consumers. However,* *3-4% of the global anthropogenic greenhouse gas emissions are estimated to be caused by milk production. Especially, raw milk production contributes significantly to the carbon footprint of dairy production. The determinants of the carbon footprint of dairy production are livestock and raw milk, processing (clarification, separation, pasteurization, evaporation, filling, fermentation, cooling and chilling, packaging, etc.), storage and transportation. However, the impact of these determinants on the carbon footprint can vary depending on different factors, such as the production system, and geographical area. This review aims to define the role and determinants of dairy production in the carbon footprint.* *There are limited number of studies on the impact of dairy industry on carbon footprint in the literature. Further studies on the environmental impact analysis of the production of dairy products at various scales and products are required.*

***Keywords:*** *Carbon footprint, carbon dioxide, climate change, greenhouse gases*