

## The Impact of Adopting Cross Breed Dairy Cows on Households' Income and Food Security in the Case of Dejen Woreda, Amhara Region, Ethiopia

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**Abstract :** This study assessed the impact of crossbreed dairy cows on household income and food security. The study area is found in Dejen Woreda, East Gojam Zone, and Amhara region of Ethiopia. Random sampling technique was used to obtain a sample of 80 crossbreed dairy cow owners and 176 indigenous dairy cow owners. The study employed food consumption score analytical framework to measure food security status of the household. No Statistical significant mean difference is found between crossbreed owners and indigenous owners. Logistic regression was employed to investigate crossbreed dairy cow adoption determinants, the result indicates that gender, education, labor number, land size cultivated, dairy cooperatives membership, net income and food security status of the household are statistically significant independent variables, which explained the binary dependent variable, crossbreed dairy cow adoption. Propensity score matching (PSM) was employed to analyze the impact of crossbreed dairy cow owners on farmers' income and food security. The average net income of crossbreed dairy cow owners was found to be significantly higher than indigenous dairy cow owners. Estimates of average treatment effect of the treated (ATT) indicated that crossbreed dairy cow is able to impact households' net income by 42%, 38.5%, 30.8% and 44.5% higher in kernel, radius, nearest neighborhood and stratification matching algorithms respectively as compared to indigenous dairy cow owners. However, estimates of average treatment of the treated (ATT) suggest that being an owner of crossbreed dairy cow is not able to affect food security significantly. Thus, crossbreed dairy cow enables farmers to increase income but not their food security in the study area. Finally, the study recommended establishing dairy cooperatives and advice farmers to become a member of them, attention to promoting the impact of crossbreed dairy cows and promotion of nutrition focus projects.

**Keywords :** crossbreed dairy cow, net income, food security, propensity score matching

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