

**PRODUCTION OPTIMIZATION TO MAXIMIZE PROFITS AT THE ISTANA
BOLEN BUSINESS IN JEMBER REGENCY
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ABSTRACT

The agro-industrial sector, particularly Micro, Small, and Medium Enterprises in the food processing sector, plays a crucial role in increasing the value added of agricultural products and driving regional economic growth. Limitations in production resources—such as raw materials, production capacity, processing time, machinery, and labor—often result in production volume decisions not being optimized, thereby preventing profits from reaching their full potential. One MSME facing these conditions is Istana Bolen in Jember Regency, which produces three varieties of bolen: original, double cheese, and tiramisu. This study aims to formulate a Linear Programming model, determine the optimal production quantity, and identify the maximum profit that the company can achieve. The decision variables in this study consist of the production quantities of original bolen (X_1), double cheese bolen (X_2), and tiramisu bolen (X_3), while the constraint functions include raw materials, production capacity, processing time, machinery, and labor. The results of the study show that the optimal production combination is 25 trays of original bolen, 13 trays of double-cheese bolen, and 10 trays of tiramisu bolen per day. This combination yields a maximum profit of Rp310,969 per day, which is higher than the company's actual profit of Rp210,657 per day, resulting in a profit increase of Rp100,312 per day. The results of the discussion show that the application of the Simplex method of Linear Programming is capable of allocating resources more efficiently, determining the optimal production mix, and helping the company maximize profit through the optimal utilization of available resources. Thus, the Simplex method can be used as an effective decision-making tool in production planning at the Istana Bolen in Jember Regency.

Keywords: *Agribusiness, Maximum Profit, Linear Programming, Simplex Method, POM QM for Windows V5.*