

***DESIGN AND BUILD OF COFFEE BEAN COOLING MACHINE IN MICRO
SMALL AND MEDIUM ENTERPRISES OF REPUBLIK TANI MANDIRI WITH
DESIGN THINKING APPROACH***

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Abstract

Making this cooling coffee bean machine is aim to solve the problems that exist at IKM Republik Tani Mandiri in the form of overcoming time consume which is too long that can cause over roasted and lower the production cost as well as helping in the terms of getting coffee beans with clean quality. This research also applies anthropometry especially for combining process between cooling and roasting machine so these can be used effectively and refers to the financial feasibility analysis from the machine. Design Thinking was the method that used to build and implement the machine based on user needs. Meanwhile, measuring and combining both machines were using anthropometry percentile calculation to created machine with ergonomic standard. The process of financial analysis is also carried out to review the investment on this machine will be feasible and profitable for IKM Republik Tani Mandiri. The result of the implementation of the machine that was build, it was found that there was significant cooling time reduction by 90%, from the previous time which is 150 minutes to 15 minutes. In addition, there was also production cost reduction by 33% per year, from the previous time which is Rp3.100.000,00 to Rp2.100.000,00. Known on cash flow from the year-0 or investment is (minus) Rp7.300.000,00 and started going positive in the four next years. The calculation result of payback period is 2,1 years for IKM to get profit back. The last is the result of IRR is bigger than MARR (40% > 12%) which means this project investment is worth it and profitable for IKM.

Keywords: coffee beans, cooling, machine