ABSTRACT

AUSTRIA, E.A., MOJICA, R.R. and VIDAL, M.G.R., Development of Three Process Corn Mill (De-husking, De-kernelling, Milling). Bachelor of Science in Mechanical Engineering, De La Salle University – Dasmariñas, Cavite, April 2014. Adviser: Engr. Alfredo G. Hicaro

This study is conducted in order to design, create and test machines that will be capable of de-husking and de-kernelling and milling yellow dent corns. The corns were sourced from Leyte and sun dried until the moisture content of the corn is reduced. Due to time constraint, the researchers were not able to design an integrated machine to de-husk, de-kernel and mill the corn instead opt to design individual machines. For the de-kerneller unit, the group opted to use the de-kerneller unit designed and built by a group of previous mechanical engineering students.

Through various consultations and research about corn processing, the proponents of the study was able to design a roller that should peel off the husks for the dried corns. However, as the test was conducted, it was found out that the design of the roller was not effective for removing the husks completely. Different rotation patterns for the de-husker rollers were tested.

The effectiveness was increased slightly however the husks still did not completely peel off; the highest being at 21%. The effectiveness of the existing corn de-kerneller was also tested. It turned out that only an average of 90% of the corn kernels were removed from the cob. Corn milling machine was also tested. Test

showed that the corn grits produced was of size 14 based on the corn grit standards set by Bureau of Product Standards.