

## ABSTRACT

The focus of this study was to create and develop an automatic french fries cutter which will help promote instant and fresh french fries because it is automatic and self programmed, hence it is time efficient.

The researchers aimed to minimize the time consumption and improve the safety of operation on how to make french fries. The researchers designed a piece of equipment that can process peeled potatoes into French fries and transfer it to the existing automatic dispensing deep fryer designed and fabricated by the group of Esperanza Et al..

This equipment has the ability to prepare French fries in a systematic manner. It also has a control system that will alarm the operator if the desired weight limit has been met. Different light signals is included in the control system that will indicate whenever the operation has finished its process.

Since the study is based on improving the automation of making fries, the researchers are expecting this equipment to effectively link it with the automatic dispensing deep fryer and to work together as efficient as it can.

The researchers computed the necessary motor power which will be use for selection of the equipments. The conveyor's Torque which is 6 N-m and the Dispenser's Torque is 5 N-m based on the given data and a limit of 3 kg in the conveyor designed by the researchers. The distance between the lever arm and the motor for the conveyor and dispenser is not equal which differentiate the torque from each other since the mass remains constant in the equa-

tion. However the Conveyor and dispenser's motor power are the same with 4W due to the researcher's computation on the dispenser's power of 3.33W that has been rounded up for safety purposes.

In the Cutter mechanism, the pusher block's torque is 130 N-m due to the large force of 460lbf needed in order for the motor to push through the potato into the cutter blade. The force needed was taken from the actual experiment done by the researchers. The cutter mechanism's Motor Power of 98W was then computed based on the force needed to push through the potato.

A series of experiments are presented such as; identifying the quality of the cut potato, and comparing the weight of the raw potato and the cut potato, these are then used to illustrate the performance of the Automatic potato cutter.

