Design and development of fruit extractor

Design

The study aimed to develop a fruit extractor In view of system components, material specifications and ergonomic concepts, and determine Its desirability. It was observed that the problem encountered was the extraction of the mall Ingredients which consumed a lot of time and too much effort which resulted to exposure to different risk factors like awkward posture and muscle pain. The researchers conducted interview with the operator and conducted motion and time study. The operator experienced risk factors in the existing extraction process as observed.

After the development of an ergonomic fruit extractor, preliminary testing was conducted in view of ergonomics, efficiency and performance. The modified fruit extractor was found to be effective based on the computed efficiency rate of 76. 67 percent. The result was considered relevant for it shows that the quality of the fruit extracted was preserved. The capacity of the fruit extractor increased the capacity by 20 percent higher compared to the existing process. It can perform the process for only 4. 71 minutes which is relatively lower than the existing process which is 7. Minute.

It has a positive net present value of PH 64, 877. 61 and has a payback period of only 49 days which means that the investment is desirable. The prototype is expected to be effective and can be used by different pickled fruits producers like amply or bitter gourd and bamboo shoots which is assured to eliminate the risk factors without affecting the quality of the extracted fruit. Moreover, some parts of the extractor such as the stopper and the gear which may help to attain the full potential of the fruit extractor an be improved to further increase the efficiency and reliability.