DESIGN AND CONSTRUCTION OF AUTOMATIC FULFILLER AND CAPSULE SYRUP USING STEPPER MOTOR AS A BOTTLE MOVEMENT BASED ON ARDUINO NANO

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ABSTRACT

In this increasingly sophisticated era, the use of technology has become very important in helping and facilitating human work. Especially for home industries and SMEs that process passion fruit syrup, many can be found and in the processing process, home industry players and SMEs do not have to do it manually. However, it can be done automatically by using a tool designed to be able to fill and close the passion fruit syrup bottle, for effective and efficient results. This research was conducted with the aim of building a tool that can be used to automatically fill and close bottles using a Stepper Motor as an Arduino-based drive and to determine the accuracy of filling syrup into 125 mL bottles and to determine the ability of passion fruit syrup bottle caps using a stepper motor as an Arduino-based drive. Nano. From the results of testing the accuracy of filling passion fruit syrup into 125 mL bottles against 10 bottles sequentially, it was found that the average result per bottle was 0.3 mL with an overall accuracy percentage of 97% and an error percentage value of 3% so that it can be declared successful. As for the results of testing the ability to close the bottle of passion fruit syrup, it was declared that it had not been successful or could not work properly because it had not been found a bottle with a bottle cap that closed tightly. Bottle closures were divided into 3 ratios A (very tightly closed), B (lack of closing), and C (not closing), and the results found were that at value A there were no indicated bottles, at B values found 8 bottles indicated, and on the value of C found 2 bottles indicated.

Keywords : Arduino Nano, Stepper Motor, Bottle Filling, Bottle Closing