ABSTRACT

Ice cream is one of the delicious snacks that found on the market easily. The standard temperature for ice cream storage is less than -23 C °. A freezer is used to place ice cream because it can reach a cooling temperature of up to -28C. Many factors influence the work performance of the freezer, one of them is an ice. Based on interviews with freezer technicians, cleaning frost takes a long time by manually pressing and hitting the freezer wall without turning off the freezer. It is necessary to automate the maintenance of technicians to maximize freezer work.

This study designed a tool to prevent the production of frost formation. This tool works based on humidity, temperature and frost made in the freezer, the sensor will read the freezer state. When the humidity exceeds the specified limit, the device will suck the moist air inside through the drainage channel in the freezer, moist air will be condensed to reduce moisture in the air,it is will be circulated back to the freezer.

The results of these final assignments is tool that reduce the flower formation in the freezer and reduce humidity, does not affect the refrigerator performance. In condition one and two using a tool the temperature reach -23.56 C° and -22.8 C°, while not apply the tool -23.62 C° and -22.4C°. In condition one and two using a tool can reduce humidity 52.48% and 48.26% from the initial state, while not apply the tool 31.51% and 41.31%. The Moisture and the "close – open" process in the freezer influence on the formation of frost, which is carried out through the air from the air condensation process produced 6.5 ml in condition one and 10.5 ml in conditions two.

Keywords: *Freezer, Frosting, Ice cream, Moist air, Humidity*