Design, Manufacture a Semi-Automatic Passion Fruit Juice Suction Machine

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Small-scale establishments of passion fruit processing have a high demand for automatic machines. However, current passion fruit juice separators on the market do not match the requirements of this sector, i.e., the output quality of the extracted passion fruit juice. So, in the frame of this work, we create a novel semi-automatic suctioning machine for passion fruit extraction. That is more efficient for both productivity and quality than existing machines on the market for the small-scale processing facilities. Our new device is based on the suction method to collect the juice from passion fruit flesh into a container. This sucking process has an advantage in retaining the original flavor of passion fruit juice compared with pressing or centrifugation methods of fruit juice separators on the market. Because the laters usually go along with breaks of passion fruit peel which affects the flavor and quality of output products. A prototype of our semi-automatic passion fruit juice suction machine operates as follows: putting, passion fruits into the trough, chamfering the peel to create a position for sucking, inserting a scoop and a straw into the fruit flesh to scrape and suck the juice. The passion fruit juice then follows the suction straw to a container, while the peel is pushed through an exit hole. It is found that the prototype and its data meet all the set criteria, so this device can be used in small-scale processing facilities.

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