

Performance evaluation of pepper steam sterilization machine

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- 1. Department of Agricultural Systems, Faculty of Agriculture, University of Rajarata, Puliyanlulama, Anuradhapura.*
- 2. Institute of Post Harvest Technology, Research and Development Centre, Jayanthi Mawatha, Anuradhapura*

Pepper (*Pepper nigrum*), is a widely used spice in the world. A steam sterilization machine was developed by Institute of Post Harvest Technology (IPHT) to enhance the quality of pepper. Performance of the machine was evaluated in terms of microbial count, color, moisture content of sterilized dried pepper, cost of production, power consumption and capacity of the machine with a view of recommending it to the pepper producers. Evaluation was conducted by changing exposure time and auger speed. During the test steam pressure kept at constant. Results indicate that irrespective of the treatment, reduction of microbial count was zero. Maximum machine efficiency and high quality black pepper can be achieved by one pass time. Average breakage percentage and capacity of the machine were 2.82%, 157 kg/h respectively. Initial average moisture content 13.3% of dried pepper was increased up to 20-22% due to sterilization and after four hours it came back to 13% by open yard drying. Further, it is suggested this would be suitable for commercial level after increasing the capacity.

Producing of good quality pepper is one of the requirements of the country due to increase of the export potential of pepper. A major problem conformity the pepper exporting industry in Sri Lanka is high percentage of microbial contamination of farmer produced pepper. Sterilization is an extremely important step in the production of high quality pepper in export purpose. Removal of available microbes in pepper is very difficult while maintaining other quality characters of pepper as breakage percentage. Evaluation of pepper sterilization machine is an important step in pepper industry to expand export earnings to Sri Lanka. The technology is disseminated by extension mechanism of Institute of Post Harvest Technology and also through consultancy and training. Apart from that, technology is disseminated to farmers through other governmental and non-governmental organization who are working on postharvest technology field.