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## Performance evaluation of an electronic storage chamber for tomato crop

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The major problem faced by farmers is the rapid deterioration of harvested crops as a result of inadequate storage facilities which is also peculiar to tomato crop. This problem has led to heavy losses of farmer's produce during post-harvest period which in turns result to reduction in farmer's income and availability of the crop for a longer time for consumption. This paper evaluates the performance of an electronic storage chamber for tomatoes. The electronic storage chamber was designed to monitor and control temperature and humidity level. The storage chamber comprised of the cooling unit, the electronic controlling circuit, power control circuit, switching and logic circuits and transducer. The reference values used were 9.5°C for temperature and 95% humidity level. The output was interfaced to the power control circuit of the cooling system, and the humidity adjusting mechanism to keep the state of the chamber to these desired values. The maximum mass of tomatoes designed for storage in the chamber was 10 kg. Tests were carried out for eight weeks and the corresponding tomato parameters in terms of weight, firmness, ripening index and percentage cumulative spoilage were obtained. The result of the percentage deterioration of the weight, firmness, percentage cumulative spoilage and ripening indices for the chamber was compared with the control; original tomato parameters. These were 28.9 and 95%, 9.9 and 97.9%, 19.4 and 96.5%, 72 and 195 respectively. This paper has shown that the performance of electronic storage chamber will significantly improve the shelf - life of tomato crop.

### Biography

Akinola Olubunmi is a Lecturer and a PhD student in the Department of Electrical and Electronics Engineering of the Federal University of Agriculture Abeokuta, Nigeria. He has served at different capacities in the development of the department and the University. He has taught several courses at both Undergraduate and Post graduate levels. He has to his credit some papers in reputable journals and international conference proceedings.

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