

Low-cost air modification system

Salient features

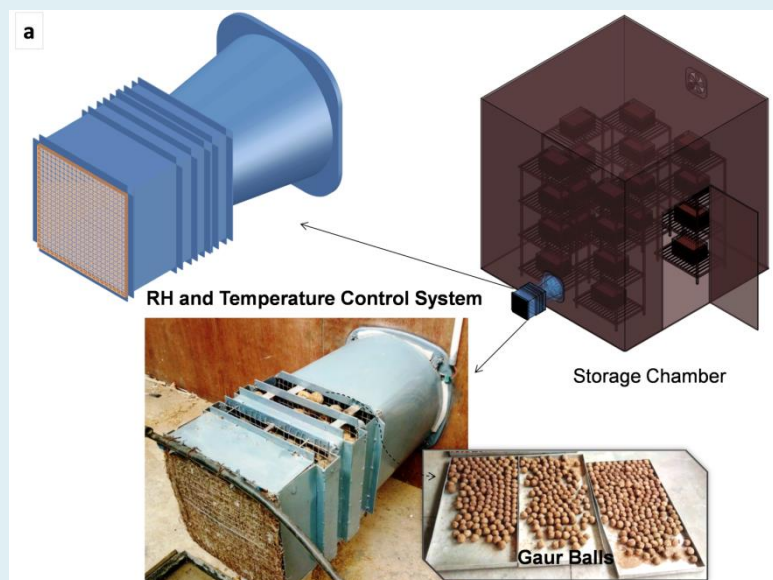
- A low-cost air modification system (made of guar straw and wood wool) for onion storage based on semi-arid region.
- Controlled relative humidity (RH) and temperature, system with two major units: (i) dehumidification– three compartments of guar straw balls/guar balls, and (ii) humidification – water-saturated wood wool pad.
- Dehumidification unit can reduce the RH by 4.9% and the humidification unit can increase the RH by 4.2% in the storage chamber ($3 \times 3 \times 3 \text{ m}^3$ plyboard, 1 ton storage capacity, a truss roofing)
- Maintains the necessary storage RH in a range of 60–70% with a variation of 1.5%, and 22–37 °C storage temperature

Advantages

- ✓ Controlled RH of a storage environment
- ✓ Low-cost desiccant developed
- ✓ Use of agricultural waste (guar straw and wood wool)
- ✓ Storability of the onions was close to five months in the system than three and a half months in control/ambient condition

Specifications

The air modification system having a 400 mm diameter opening of the front side, 650 mm length, and 312 mm opening of the backside was made of a mild steel body



<i>Machine developed by</i>	Dr. Bhupendra M Ghodki, Dr. Dukare Ajinath Shridhar, Dr. Pankaj Kumar Kannaujia, and Dr. R.K. Vishwakarma ICAR-Central Institute of Post-Harvest Engineering and Technology, Ludhiana bhupendra.ghodki@icar.gov.in
<i>Year</i>	2019
<i>Price / Unit</i>	Rs. 0.08 Lakh
<i>More information</i>	Status of commercialization / Patent / Publication Ghodki, B. M., Srihari, G., Dukare, A. S., Kannaujia, P. K., Kalnar, Y. B., & Vishwakarma, R. K. 2020. Potential utilization of guar straw and wood wool in controlling relative humidity and temperature of storage environment. Journal of Food Process Engineering, e13618. https://doi.org/10.1111/jfpe.13618