

## **Improvement of an existing post harvest practices of big onion to improve the product quality and modification of IPHT big onion in-storage and curing structure to increase storage life of big onion**

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Big onion (*Allium cepa*) is one of the major vegetable crops, which is grown in Sri Lanka meanwhile this is one of the major important cash crops in the dry zone and the intermediate zone. The level of big onion production and prices shows an immense potential for increasing incomes of local farmers. Most of the Sri Lankan farmers do not practice proper post harvest operations such as harvesting at correct stage of maturity, cleaning, grading and sorting for their products. Hence, high qualitative and quantitative losses were occurred. And also big onion cultivation is seasonal in Sri Lanka, at present, proper storage methods for storing onion more than 4 months not available in Sri Lanka. Hence, farmers have to sell their produce at harvesting season even less than cost of production. It was reported that 143,237 MT of big onion was imported in year 2009 (External trade statistics, Sri Lanka custom). And also 81,710 MT of big onion was produced in Sri Lanka (Dept. of Census & Statistics). However, after 4 month from the cultivation season, locally produced big onion was not available in the market due to unavailability of proper storage structure for big onion. Most of big onion farmers in Sri Lanka do not use improved post harvest practices for big onion. Fertilizer should be applied in recommended and also it was observed most of farmers apply fertilizer more than recommended. Cutting, curing, neck sealing and drying of big onion was not practiced properly by local farmers. Cutting of tops is very important post harvest practices. Wrong cutting of tops will be caused for rotting and sprouting. Correct practices were cutting of tops from 2.5cm height. It was observed that there are no standards dimensions for construction of big onion storage structure introduce by Dept of Agriculture. Those structures were constructed without considering of favorable environment conditions maintaining in side the storage structure i.e. to control of relative humidity and temperature as optimal conditions during storage period. Reasons for failure of IPHT were evaluate and observed that was operating problem of structure If furnace is not fired well RH will not controlled and it cased for accumulation of moisture inside the big onions. New big onion storage structure was design to overcome all defects of IPHT big onion in storage curing structure and considering required conditions such as

maintaining RH and temperature favorable for storing of big onions. In the new design, width of the storage structure was designed minimum as possible. It will facilitate natural ventilation to control the inside RH and temperature. However in rainy days, it is difficult to control RH naturally. Therefore, storage structure is designed with electric fan for controlling the inside RH of big onion storage structure.