

## **Effect of perforation geometry and tube diameter of vertical aerator from LAMB dryer on air distribution uniformity**

### **ABSTRACT**

Laterally Aerated Moving Bed (LAMB) dryer consists of a perforated vertical inner tube that distributes hot air radially. Six different types of perforated tubes were tested to investigate the airflow pattern by analyzing the non-uniformity flow coefficient and pressure drop accordingly with different perforation geometry and tube diameter. High uniformity of air outlet from all perforated tubes was confirmed with the low value of non-uniformity flow coefficient with the range 0.000041 to 0.00055. Furthermore, circle shape perforated hole with 4 mm diameter has the highest pressure drop and rectangle hole with 5mm x 2mm dimension have the lowest pressure drop. 1inch diameter of the tube has the highest pressure drop. This finding will aid in the optimization of the perforated tube design for the LAMB dryer system.