

## **Pressure Variation in a Model Biofilter Bin Due To Wetting and Drying Cycles**

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Wetting and drying cycle is a phenomenon often noticed in biofilters. Wetting can occur through natural irrigation, artificial irrigation, or introduction of humidified air into the system. Drying, on the other hand, can occur through evaporation, natural ventilation, artificial ventilation, or introduction of warm air into the system. The objective of this study was to determine lateral pressure variation due to wetting and drying cycles in a model biofilter bin. Three model biofilter bins, each 0.5 m long, 0.5 m wide, and 1.2 m high were used. Lateral pressures were measured with pressure sensors mounted on the bin wall at 0.2, 0.5, 0.7, and 0.9 m above the bin floor. Woodchips was used as the filter material. Wetting of the material was achieved by water sprinkling method. A ventilation fan was used to facilitate drying of the filter material. Relative humidity (RH) sensors were used to track changes in moisture content of the woodchip material. Five wetting and drying cycles were obtained. Data analysis is on-going. However, the preliminary results showed that lateral pressure increased during wetting and decreased during drying.