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The Cooling Performance of Wet Pads and Their Effect on Reduction of the Inside Temperature a Cage House

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Abstract: This study was carried out in a cage house of the commercial egg company in the Konya Province. The cage house capacity was 36762 layers. Eight exhaust fans with a capacity of 40000 m³/h were installed on the end walls in the house. Twenty-four cellulose evaporative cooling pads, each one 1.20 m high x 1.80 m long x 100 mm thick were mounted on the side walls. In this system cooling pads served as air inlets, and evaporative cooling was supplied when dry and hot air flowed into the pads. The temperature of cooled air was decreased by 4.2-16.2°C relative to the outside daily maximum temperatures. The average reduction of cooled air temperature was 10.6°C. The evaporative cooling efficiency of pads was found to be 87.5 % on average for Konya conditions. The cage house interior temperatures were decreased between 5.4-6.4°C when outside temperatures were 30°C or higher.

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