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HAF Keeps Plants Dry

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When horizontal air flow (HAF) was first installed in the University of Connecticut greenhouses, a humidigraph was installed to measure how HAF keeps greenhouses dry. It did not happen! The humidity was higher in the HAF house than in the control.

After a bit of thought, the humidigraphs were moved to within the plant canopies. Voila! Here the reverse was true. The humidity around the plants was lower. HAF was removing water from the leaf surfaces, causing the humidity in the greenhouse atmosphere to increase.

The spores of plants diseases such as *Botrytis* require a very high humidity within the boundary layer of air which surrounds the leaf or petal upon which they reside. With *Botrytis*, this has been described as over 98% relative humidity in the atmosphere. But the humidity immediately adjacent to the leaf is higher. Condensation or even a thin film of water may be required for spore germination. HAF reduces the humidity adjacent to the plant parts and virtually eliminates condensation. Under severe conditions, heat and vent is necessary to remove greenhouse moisture. See the article preceeding this one for more information.

Condensation occurs on surfaces that are colder than the surrounding air. Leaves radiate energy. If less heat is radiated back to the leaves (from the cold greenhouse