Colorado Flower Growers Association

IN COOPERATION WITH COLORADO STATE UNIVERSITY

Doris Fleischer, Executive Secretary

Bulletin 126 655 Broadway, Denver, Colorado September 1960

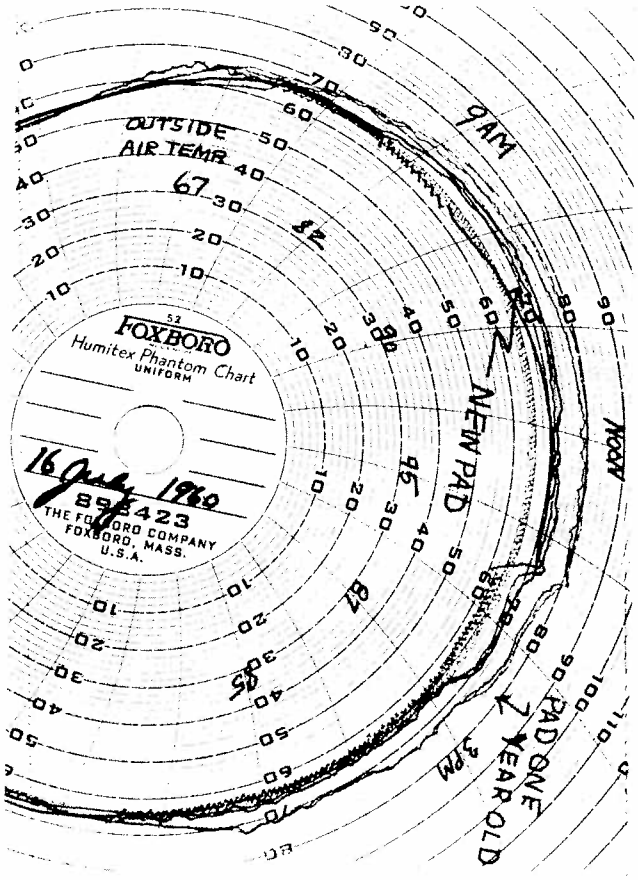
Greenhouse Cooling Efficiency I. Density of Evaporative Pad

By

W.D Holley and Jim Manring

Cooling pads which have become too dense for free air flow reduce cooling efficiency almost as much as any other one factor. Just how much a one-year-old pad can reduce cooling was brought to our attention on July 15, 1960.

The pads were changed in two compartments of the CSU Temperature Research House on July 14. The pads were not changed in the remaining two compartments until three days later. Fan capacity and other factors which affect cooling efficiency were almost identical in the four compartments. The continuous temperature chart for the four compartments for July 16, is shown in the accompanying figure. New pads decreased the temperature in two compartments 7-8 degrees, giving 21 to 23 degrees of cooling at 1 pm. This difference in cooling efficiency between new and old pads can mean at least one grade difference in the flowers.



Pad density is effected by thickness, type of material used, age of pad material, and accumulations of salts, dust, algae, and other foreign material in the pad. A new pad which is too thick restricts air flow thereby increasing the temperature rise from pad to fan. The machine made pads now available in the 1½" thickness seem to be about right, so long as they are clean.

Some growers have made a practice of washing pads several times during the season. Water under pressure will remove much of the debris that is sucked into pads. Where pad water is high in salts, many growers are wasting the water to keep down salt encrustations in the pad material. One grower has suggested the use of boiler return water as an aid in dissolving out objectionable salts.

Several pad cleaners are available for killing algae in the pads, however, if the algae is allowed to make considerable growth before it is killed, the dead algae is just as good an obstruction as live algae. When all is said and done, nothing you can do to a pad will raise its efficiency like changing it once each year.