湿帘风机系统温室夏季蒸腾与微气候试验

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关键词： 温室 微气候 通风 湿帘风机 蒸腾速率

摘 要： 在2种通风率和湿帘开、关状况下对温室内部气候相关参数进行了检测和对比分析，并重点对蒸腾速率进行了模拟计算和测量。试验结果表明：蒸腾速率与通风率、湿帘工作状况相关，在相对干燥的环境下（不开启湿帘），提高通风率可使植物获得更大的蒸腾量，从而可使温室内部温度不超过室外温度。在湿帘不工作的情况下，由于蒸腾的作用植物叶面温度低于周围的环境空气温度；而在湿帘工作情况下，室内湿度较高，蒸腾受到抑制，叶面温度高于周围环境空气温度。 For a comprehensive understanding of climate in a greenhouse with fan and pad system, an experiment measuring climate parameters was conducted on with two ventilation rates and with pad on and off. The transpiration rate of the plant inside greenhouse was supposed to be one of the most important factors on climate considerably influences latent heat exchange, and it was calculated and measured mainly in this work. The experimental data show that the transpiration rate has some correlation with ventilation and pad working condition. In the case of no pad working, the higher ventilation which promotes transpiration will induce a lower temperature inside greenhouse to outside and a lower leaf temperature than its ambient temperature. But with the pad working the leaf phenomena is just opposite. The vertical and horizontal distribution of temperature and specific humidity were also measured and analyzed.

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