

High Temperature Reduces the Viability of Pollen from Upland Cotton in China

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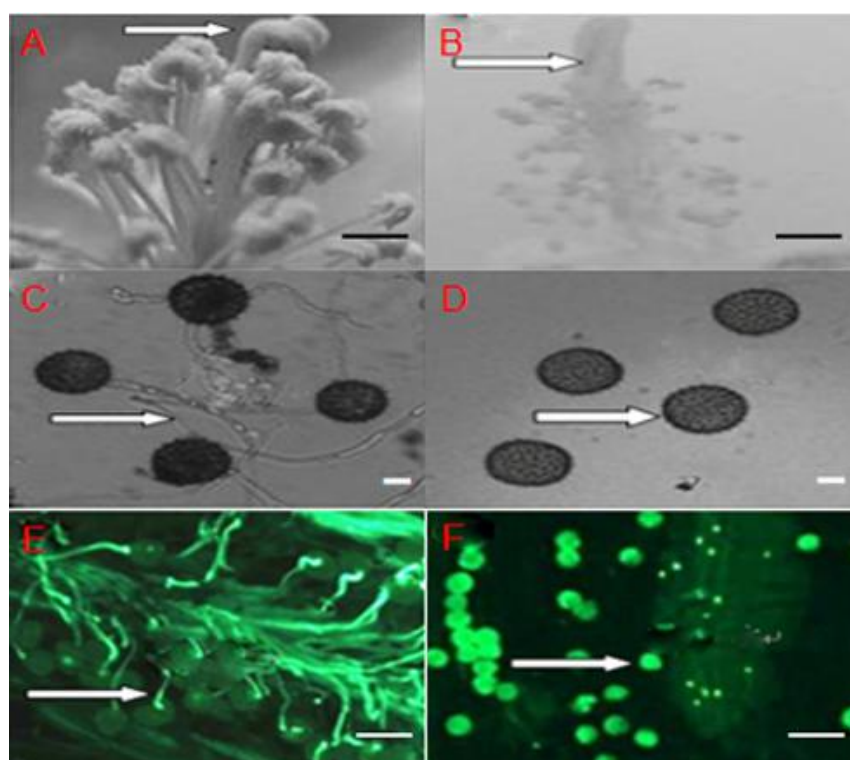
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Pollen germination rates decreased significantly when the maximum daily temperature was $\geq 35^{\circ}\text{C}$ for three consecutive days. The heat resistance index was calculated to evaluate the differences in the heat resistance among the different cultivars. Resistance of pollen vigor to high temperature significantly differed among cultivars. Four simple sequence repeat markers associated with pollen germination rates under high temperature were identified.



A, Normal stamen development at normal temperature (arrow refers to the normal stigma); B, abnormal stamen development at high temperature (the arrow refers to the abnormal stigma); C, pollen grains germinated at normal temperature under the microscope (arrow refers to the pollen tube); D, ungerminated pollen grains at high temperatures under the microscope (arrow refers to the pollen grain); E, pollen tube under a fluorescence microscope; and F, ungerminated pollen grains under a fluorescence microscope.