

Title The effects of relative humidity and temperature on disease development in stored date fruits
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Abstract

Date fruit rot is widely distributed in Nigeria and causes great losses for farmers and marketers. The role of moisture and temperature in disease development was investigated at 7 relative humidity levels using saturated salt solutions and water at 6 temperature levels with the ultimate aim of controlling rot. Temperature and moisture were found to be important in disease development. Up to 15°C, no rot was observed after 21 days of incubation in all relative humidity levels tested. Similarly, in up to 63% RH, no rot was observed at the temperatures tested. Though the fruits were shriveled and brittle the spores proved viable when transferred to growth media and incubated at 30°C. This indicated that low relative humidity and temperature are not conducive for disease development. At 25-30°C all fungi tested caused rot in 91-100% RH in 2-5 days. All except *Cladosporium* spp. caused rot in 84.5% RH in 2-26 days. Only *Aspergillus vesicolor* and *Malbrachiae* sp. caused rot at 75% RH in 11-15 days. Thus date fruits with low moisture content may be preserved at room temperature while those with high moisture content will require lower temperatures.