

Response of two pineapple cultivars to *Thielaviopsis paradoxa* causing Black Rot disease

Black rot caused by *Thielaviopsis paradoxa* is a major postharvest disease in pineapples in most pineapple growing regions of the world. An isolate of *T. paradoxa* developed black rot disease in both cultivars, 'Kew' and 'Mauritius', within four days on wound inoculation of green stage fruit. The rot development was faster in the cultivar 'Kew' than in 'Mauritius' initially but after 10 days the fruit of cultivar 'Mauritius' had developed larger rots. Wounding accelerates rot development considerably in both cultivars. Intact, unripe fruits were resistant to disease. The pathogen could, however, be isolated from apparently healthy skin of unripe fruit of both cultivars indicating that the pathogen form quiescent infections. More quiescent infections were found on the stem-end half of the fruit skin than in the blossom-end half. The pathogen appears to enter the fruit through weak tissues or openings within or in-between florets and other wounds. The activation of quiescent infections into progressive rots takes place during fruit ripening. The changes that take place in fruit composition during ripening, particularly the decline in acidity, may be facilitating the fungal growth. In vitro studies showed that the optimum pH for the growth of *Thielaviopsis paradoxa* ranges between pH 4.5 - 6.5. This study has also shown that the unripe fruit skin does not contain any antifungal substances, performed or inducible, at detectable quantities. The resistance of unripe fruits to black rot disease may be governed by other factors which are not subject to this investigation.