

## BIOCHEMICAL CHANGES ON PINEAPPLE TISSUES CAUSED BY *Fusarium moniliforme* var. *subglutinans*

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### Introduction

Fruit rot caused in pineapple (*Ananas comosus* [L.] Merr) by *Fusarium moniliforme* var. *subglutinans* WR & Reink is a serious disease in the main producers regions (4, 5). Phenylpropanoid metabolism has been implicated in plant defense mechanism against pathogen attack (3). This study was carried out to examine the activities of Tyrosine Ammonia Lyase (TAL), Peroxidase (PO) and phenol content in intact, wounding and infected vitroplants.

### Materials And Methods

Pineapple vitroplants (cultivar Smooth Cayenne) were adapted in a glasshouse and after three months were used for assay. One *F. moniliforme* var. *subglutinans* strain isolated from field conditions was grown in PDA and the inoculation procedure was such as described earlier (5)

The method described by Carver *et al.* (1) was used for the determination of the TAL activity, using Tyrosine as substrate. PO activity was extracted and assayed as previously reported (2). Hydroxyphenolic compounds were assayed as described previously (3).

### Results And Discussion

The activity of TAL in intact and wounding tissues showed similar trends throughout the time course examined. *Fusarium* caused an early enzyme activity increase 24 h after inoculation (Figure 1). Enzyme levels began to decline and after nearly 50 h the TAL activity was inhibited by the fungus. Finally this inhibition was reversed in a incompatible interaction (3). Similar response was appreciated in Enzyme products (hidroxyphenolic compounds) levels.

Determination of the PO indicated higher levels in wounding and infected vitroplants as general response of this enzymes to stress conditions (6). Finally the microorganism caused dramatic PO activity increases. Peroxidase involvement in plant tissues has been implicated to induce disease resistance (2).

Results of this study indicate that TAL activity and their products as well as PO activity could be important markers in pineapple-*Fusarium* interaction.

1. Carver WL, *et al.* *Physiological and Molecular Plant Pathology* 1991; 39:269-287.

2. Hammeschmidt R, *et al.* *Physiological Plant Pathology* 1982;20(1):73-82.

3. Hoagland RE. *Phytopathology* 1990; 130:177-187.

4. Pires de Matos A, *et al.* *Fruits* 1991;46(14):647.

5. Pires de Matos A, *et al.* *Fruits* 1992; 47(1):3.

6. Siegel BZ *Plant Growth Regulat* 1993;12:302-312.

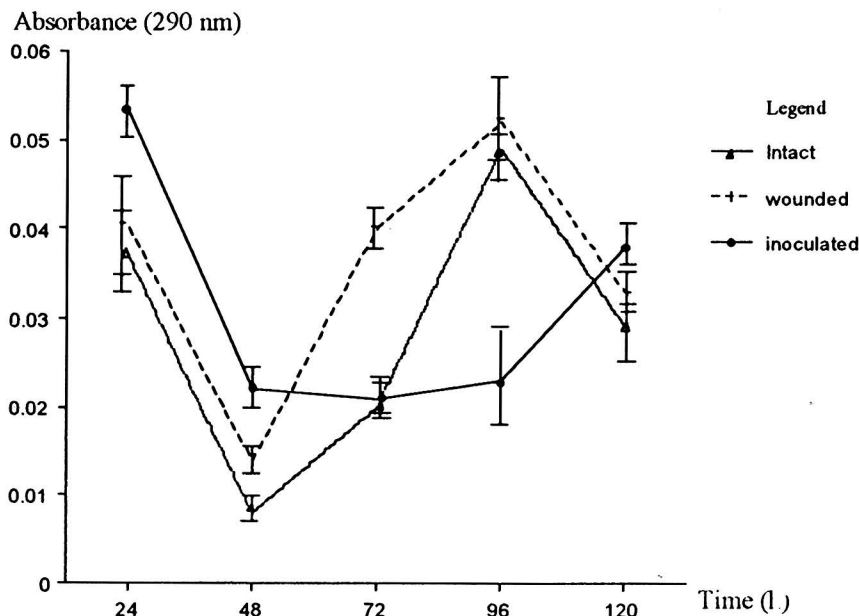


Figura 1. Extractable TAL activity from pineapple tissue in Controls and *Fusarium* at various times after inoculation.