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## Gene expression analysis of fruit bromelain in ripening of Ananas comosus cultivar MD 2

(Book Chapter)

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## Abstract

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Fruit bromelain is a proteolytic enzyme harbouring cysteine catalytic residue found abundantly in pineapple fruit. The expression of cysteine proteases is usually regulated during fruit ripening. In the present study, we aimed to study the expression and proteolytic activity level of fruit bromelain during the ripening stage of A. comosus cultivar MD 2. The gene expression of fruit bromelain was investigated via relative gene expression analysis using qPCR while the proteolytic activity of fruit bromelain was analysed via enzymatic assay using casein as a substrate. The qPCR analysis revealed that the expression of fruit bromelain was down-regulated 10-fold in ripe pineapple fruits. Besides that, the unripe pineapple fruits [1.9101 ± 0.0831 U/mL] had a higher proteolytic activity than the ripe MD 2 pineapple fruits [1.1333 ± 0.0896 U/mL]. This result showed that the function of fruit bromelain may be related to the protection of young pineapple fruits during the fruit development stage. © 2020 Trans Tech Publications Ltd, Switzerland.

## SciVal Topic Prominence

Topic: Bromelains | Ananas | Pineapple Juice

Prominence percentile: 81.109

## Author keywords

Ananas comosus | Fruit bromelain | Fruit ripening | MD 2 | Pest resistance | qPCR analysis

## Indexed keywords

Engineering controlled terms: Amino acids | Fruits | Gene expression | Polymerase chain reaction

Engineering uncontrolled terms: Catalytic residue | Cysteine protease | Enzymatic assay | Fruit development | Gene expression analysis | Pineapple fruit | Proteolytic activities | Proteolytic enzyme

Engineering main heading: Bromelain

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