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**APPLICATION OF CALCIUM CHLORIDE ON MANAGEMENT OF  
INTERNAL BROWNING OF PINEAPPLE (*Ananas comosus* cv. Mauritius)  
FERTILIZED WITH UREA**

**A PROJECT REPORT PRESENTED BY  
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to the board of study in Plant Science of the  
**POSTGRADUATE INSTITUTE OF SCIENCE**

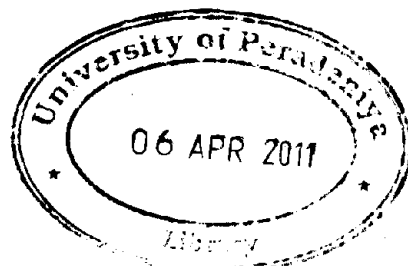
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**APPLICATION OF CALCIUM CHLORIDE ON MANAGEMENT OF  
INTERNAL BROWNING OF PINEAPPLE**

**(*Ananas comosus* cv. *Mauritius*) FERTILIZED WITH UREA**

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Internal browning or endogenous brown spot is the most important physiological disorder of pineapple caused by storage under low temperature during exportation. The effect of preharvest application of Urea and Calcium Chloride ( $\text{CaCl}_2$ ) on the development of internal browning in the harvested fruit was studied. Experiments were conducted at Keramillawattha Estate at Gampaha district. Pineapple cultivar Mauritius was planted in a randomized complete block design with nine treatments and three replicates. Control plots were maintained without urea fertilizer and  $\text{CaCl}_2$ . The fruits which were less than quarter ripe were harvested and uniform size fruits were stored in a cold room at 8 °C and 80-85% Relative humidity. Fruits were removed from the cold room at 14 and 18 days after cold storage and analyzed after keeping the fruits in 24 hours at room temperature (27°C). The intensity of internal browning, Total Soluble Solid content (TSS), Titatable acidity, and fresh weight were assessed for all fruits. Treatment with  $\text{CaCl}_2$  alone resulted in a significant reduction of internal browning of fruit during cold storage. A 100% control of internal browning was observed in 2g/plant  $\text{CaCl}_2$  treated fruits, up to 18 days under cold storage. However, treatment of  $\text{CaCl}_2$  in combination with Urea was not as effective as treated with  $\text{CaCl}_2$  only in controlling internal browning in pineapple. On the other hand, treatment with Urea at any rate without  $\text{CaCl}_2$  increased the intensity of browning when compared to control fruits. Treatment with Urea with or without  $\text{CaCl}_2$  treatment resulted in a comparatively lower Total Soluble Solids value at fruit harvest. Also, treatment with either  $\text{CaCl}_2$  or Urea or both resulted in a reduction of Total Soluble Solids during cold storage. The study suggests the application of  $\text{CaCl}_2$  2g /plant as a promising method of controlling the internal browning of pineapple cultivar Mauritius during cold storage (10°C) under sea freight conditions.