



# INTERNATIONAL CONFERENCES ON GREEN ENGINEERING FOOD AGRICULTURAL SCIENCE AND TECHNOLOGY

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# **ABSTRACT BOOK**

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#### **Identification of Seeds using Principal Component Analysis**

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Abstract. Seeds are varied in several attributes like size, color, form, etc. and that varieties can identify plants species. However, there are some plant species that have similar seed, so that it is important to have additional characteristics to support the identification process. This research is using Principal Component Analysis method to identify plant species by using its seeds. The PCA technique is used to reduce the complexity of the information by reducing data dimensions, and only stores 75% of the information. By reducing the dimension, the data size is reduced and therefore can speed up data processing time. In this research we collect 100 plant seed images with similar look or figure one another namely sapodilla (Manilkara zapota), soursop (Annona muricata), cucumber (Cucumis sativus), star fruit (Averrhoa carambola), grape (Vitis vinivera), melon (Cucumis melo), apple (Malus domestica), lime (Citrus aurantifolia), watermelon (Citrullus lanatus), and chili pepper (Capsicum annuum L.). With K-Fold Cross Validation, resulting 10 experiment tables with 83% acuracy. Omission errors are found in soursop, star fruit, grape, aple, lime, and water melon seeds. While most commission error are found in apple seeds as many as 8 times.

Keyword: image seeds. Principal Component Analysis, tropical plants identification.



# This is to certify that

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