

**BANANA LEAF ASH AS PARTIAL REPLACEMENT  
FOR CEMENT IN CONCRETE**

**A Thesis Presented to the  
Faculty of the College of Engineering and Technology  
Romblon State University  
Odiongan, Romblon**

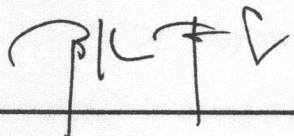
**In Partial Fulfillment of the Requirements for the Degree  
BACHELOR OF SCIENCE IN CIVIL ENGINEERING**

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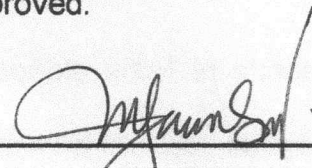
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### APPROVAL SHEET

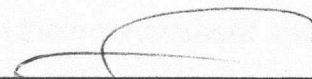
The thesis entitled, "BANANA LEAF ASH AS PARTIAL REPLACEMENT FOR CEMENT IN CONCRETE", prepared and submitted by BUÑALES, C.F., CASTRO, C.J.M., FALLARCUNA, M.V., FAMILARA, J.K.T., FELIA, K.J.G., FORCA, J.T. In partial fulfillment of the requirements for the degree of BACHELOR OF SCIENCE IN CIVIL ENGINEERING is hereby approved.




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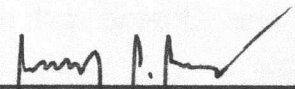
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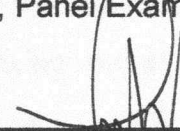
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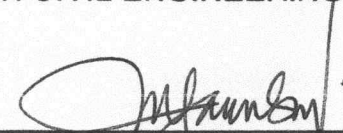


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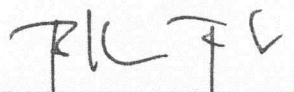


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### **ABSTRACT**

This study was conducted to determine the improvements on compressive strength of concrete if cement is partially replaced with banana leaf ash in various proportions without any other additives.

Completely dried and naturally withered banana leaves were used in this study. The banana leaves were burned until reduced to ashes and was kept in a moisture free container. The samples were prepared in accordance with American Society for Testing Materials (ASTM), cured for 14 days and 28 days and were air dried for 24 hours before tested for compressive strength using a universal testing machine (UTM).

The tests results gathered showed the different proportions of replacement yielded different results. Samples with banana leaf ash cured for 14 days didn't show improvement on the compressive strength of concrete and

show decrease in strength compared to concrete without banana leaf ash. However, samples with 10% and 5% banana leaf ash cured for 28 days showed improvement on compressive strength with 28.14 % and 2.57 % increase respectively. The average of the samples with 10% banana leaf ash attained the highest compressive strength among the three ratios of replacement and was concluded to be the most favourable proportion mix.