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"UTILIZATION OF BANANA PEEL POWDER IN CONCRETE"

ABSTRACT

Making concrete using banana peel as admixture is studied and verified the strength of concrete and temperature emitted due to chemical reaction to the normal cement. The percentage of transmission temperature and reduction time of temperature has decreased; hence it is clear that the exothermal reaction in concrete has been reduced by using dried banana peel powder as admixture. Ingredients other than cement, water & aggregates that import a specific quality to either plastic(fresh)mix or the hardened concrete (ASTMC 496) is called concrete admixture. The flexural strength of concrete by using banana peel powder as admixture has increased, but considerable lesser compressive strength has increased.

Keywords: Green; compressed Earthen Block (CED); Green- Compressed… Portland Cement (OPC),and banana fibers.

INTRODUCTION

Banana is a type of fruit from herbaceous plants of the genus Musa. Musa species grow in a wide range of environments and have varied human uses, ranging from the edible bananas and plantains of the tropics to cold-hardy fiber and ornamental plants. Which is very rich in fiber content, About 30-35% of total mass of fibers and carbohydrates. Mineral content in a banana peel is primarily consistent of potassium (78.10mg/g) and manganese (76.20mg/g). Other minerals present are sodium, calcium and iron at 24.30, 19.20 & 0.61mg/g respectively. Bananas peels has numerous applications, for water purification.Bananas are grown in at least 107 countries. Although the wild species have fruits with numerous large, hard seeds, virtually all culinary bananas have seedless fruits. Bananas are classified either as dessert bananas (meaning they are yellow and fully ripe when eaten) or as green cooking bananas.The exact of origin of banana is unknown; however some said that the true origin of this world's most popular fruit is found in the Indo-Malaysian region reaching to northern Australia. Nowadays, banana is found throughout the tropics and subtropics. All edible bananas orginate in whole or in part from Musa acuminata which is native to the Malay Peninsula and adjacent regions.

AIM & OBJECTIVE

The general objective of this study is to investigate the compressive strength of concrete banana fiber as cementitious to produce high strength concrete with different temperature. The specific objectives of this study were:To determine the compressive strength of concrete using banana fiber ash as waste agriculture with various temperature.To determine the chemical properties of banana fiber ash burning with different temperatures as cement replacement. The purpose of this chapter is to study and analyze the previous study that has been done earlier through journals,(International Research Journal of Engineering and Technology (IRJET)) articles, p -ISSN: 2395-0056, p-ISSN: 2395-0072 research papers and also thesis.This chapter will review more detail regarding banana fiber ash, its advantages and analyze more valuable information. Concrete is widely used in construction industry such as high rise building, bridge, houses, and others due to its durability.

CONCLUSION ON LITERATURE SURVEY

1. In this project 2.5 % and 3.5% faster than as compare to normal concrete.
2. All grades of concrete. hence banana peel can be used as admixture where temperature due to exothermal reaction place an important role to exothermal reaction place an important role and to be reduced un construction.
3. Temperature transmittance capacity found more or less same for all grades.

RESEARCH METHODOLOGY

- The banana peel is collected from different sources. As banana undergoes bio-degradation to avoid it peels are dried under sunlight for 2days.
- After complete drying the peels are powdered carefully. Obtained powder is packed in aluminum sheets or polythene cover helps in protecting powder from atmospheric moisture. While mixing the powder must be free from lumps. An empty spaced cube with bottom, size of 10*10*10cmcasted using concrete with peel powder concrete and walls of thickness 1cm.
- Water of 1000 c was filled in empty cube and the time consumed for reduction of temperature of water to 400 c were noted down. This gives the time consumed by cube to reduce inner temperature of 1000 c of water to 400 c.
- An empty cube casted by using peel powder concrete size 10*10*10 was inserted into another larger empty cube casted using plane cement concrete size of 15*15*10cm.
- 3cm sufficient space was left between two cubes was filled with Water of 100c and top side of cube was closed by lid. Water temperature was noted down after 8mins for 1,3,7,21,23 and 28 days of similar casted samples.
- The difference between the water temperature noted after 8min and the temperature at room temperature gives the amount of heat transmitted through the walls of inner cube.

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