Effectiveness of Locust Bean Epicarp Extract on Re-vibrated Concrete Using Pebbles from Bida Environs as Coarse Aggregate

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Abstract *Purpose*: In this research, the effect of re-vibrated concrete using locust bean epicarp extract and Bida natural stone (Pebbles) as coarse aggregate was presented. *Design/Methodology/Approach*: The concrete mix of 1:2:4 and water cement ratio of 0.5 was adopted respectively. One hundred and sixty-eight (168) concrete cubes were produced in six (6) batches, 28 cubes were produced for control (mix A = 0% LBEE + 100% OPC) and 28 for (0, 5, 10, 15 and 20%) cement reduction respectively. *Findings*: The results of preliminary test of the aggregates indicate that they are suitable for concrete production and the chemical analysis of LBEE showed that it is a very good pozzolana. Concrete cubes were cast with re-vibration time lag intervals of 10 min for the period of 60 min re-vibration process and cured for 7 and 28 days. The result shows that introduction of LBEE improve the compressive strength of concrete. The result obtained also shows that there is increase in compressive strength with the increase in re-vibration time lag of LBEE concrete, hence the maximum compressive strength was obtained at 60 min for all batches. The maximum compressive strength obtained at 28 days curing was 35.70 N/mm^2 for B (0% cement reduction) at 60% re-vibration which is higher than 34.0 N/mm^2 for control mix A. The optimum cement reduction of concrete made incorporating LBEE without re-vibration and the one with re-vibration is 5% and 20% respectively. *Practical Implications*: This types of concrete can be used for structural application such as in the construction of reinforced concrete slabs, beams, columns and foundations. *Social Implications*: In order to provide adequate housing for over increasing population of people in Bida and Environs the use of Locust Bean Epicarp Extract on Re-vibrated Concrete Using Pebbles from Bida as coarse aggregate should be encouraged by individuals and government at all levels. This will also lead to reduction in construction cost of houses in Nigeria and create employment to the rural dwellers where locust bean trees are grown. *Originality and Value*: This study contributed to the pool of knowledge on how Locust Bean Epicarp Extract

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