**ABSTRACT**

Use of natural fibre in civil engineering for enhancing soil properties is high-quality due to the low cost, regionally available, biodegradable and eco-friendly. The natural fiber reinforcement causes significantly improvement in tensile strength, shear strength, and other engineering properties of the soil. Over the last decade the use of randomly distributed natural and synthetic (artificial) fiber has recorded an excellent growth. Keeping this in view an experimental study was carried out on locally available (Doimukh, Itanagar, Arunachal Pradesh, India) soil reinforced with Jute fiber. In project the soil samples had been prepared at its most dry density corresponding to its most optimum moisture content material inside the CBR mould with and without reinforcement. The % of Jute fiber by dry weight of soil was taken as 0.25%, zero.5%, 0.75% and 1%. In the present research the lengths of fiber was taken as 30 mm, 60 mm and 90 mm and two various diameters, 1 mm and 2 mm were taken into consideration for each fiber length. The laboratory CBR values of soil and soil strengthened with Jute fiber have been determined. The effects of lengths and diameters of fiber on CBR value of soil were additionally investigated. Tests result suggests that CBR value of soil increases with the increases in fiber content material. It was also observed that increasing the length and diameter of fiber there is increases the CBR value of reinforced soil and this increase is large at fiber content of 1 % for 90 mm fiber length having diameter 2 mm.

Thus there may be vast increase in CBR cost of soil reinforced with Jute fiber and this growth in CBR value will drastically reduce the thickness of pavement subgrade.