Hybrid composites consisting of epoxy resin matrix reinforced with coconut fibres, jute fibres and fibreglass mat were fabricated using the hand lay up techniques. Different fibre volume fractions and three different schemes of fibre lay up were used. Tensile strength, creep modulus, Young's modulus and breaking energy of these composites have been studied. The samples were also aged in a weathering chamber at 95deg C and the resulting mechanical properties measured.

The results obtained up to three months of exposure show that the tensile strength and Young's modulus decrease with the time of aging. This is explained in terms of chemical bond scission reactions due to the energy in uv-light and chemical attack of water on the fibre-resin interface. From this work, it was observed that the ultimate tensile strength of fibreglass mat/jute cloth/coconut fibre - reinforced epoxy composite hybrid after weathering for a time (t) may be successfully predicted by a model of the form.

$\sigma t = \sigma o + C?\ n^{1/}t$. Where σt is the ultimate tensile strength after weathering for t days, σo. is a constant which depends on σo. This empirical model is not in the literature available.

Analysis based on Weibull statistics, shows that vegetable fibres such as coconut and jute which are normally used for making sacks, cords and other artesian products, can also be successfully used to reinforce polymers for structural materials for at least three years.

The rule of mixtures successfully predicted the experimental values of tensile modulus of the fibre composites. In almost all the cases the theoretical values of the creep modulus were at variance with the experimental values. Explanation for this discrepancy was based on the fact that the models assume several constants which depend on the materials and these were not determined in this work.