The depletion crude oil has urged many researchers to find a suitable material to replace the current synthetic polymer products. Furthermore the shortage of landfill and ingestion of plastic by animals has to be taken in consideration in finding a material that can be easily biodegraded by enzyme or bacteria. In this study both fibre and matrix are from plant fibre, which makes the product highly compostable after the intended life usage. The fibre surface is modified with various alkaline concentrations before mixing with matrix through extrusion technique. The product of the extrusion is pelletized and hot compressed into specimen size according to ASTM. The specimen was tested for mechanical properties and the result shows the alkaline concentration affects the strength of the composite.