

A fertilizer product comprising an acid-carbonized microporous matrix derived from expanded biomass and a fertilizer reaction product of residual acid from the carbonizing process and at least one added fertilizer precursor. The biomass may include steam exploded wood powder. The expanded biomass may be carbonized with a combination of sulphuric and phosphoric acids, followed by ammoniation to produce ammonium sulphate and mono- or diammonium phosphate. The fertilizer reaction product adsorbs onto the carbon matrix, which results in a slow-release when the material is applied to the soil.