

USE OF WASTES AS RAW MATERIALS IN FIBRE REINFORCED CEMENT MANUFACTURE

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Abstract.

Feasibility of the use of wastes produced by environmentally friendly processes, as biodiesel production and paper recycling, as raw materials in fiber reinforced cement production was studied. Wastes tried were: deinked sludge, maize straw and hemp waste fibers. Pulps were obtained from maize straw and hemp fibers by organosolv cooking with different conditions before their use.

Results shown that the replacement of a 5% of virgin fibers by the cellulose from deinking sludge could improve product strength. Furthermore, pulps from maize straw and hemp could be used as a source of cellulose without detrimental effects on retention and hydration processes. These results, if confirmed on mill scale, would improve the economy and sustainability of the fibercement, biodiesel and recycled paper productions, opening a new way to use the wastes instead of dumping or burning. This would be an example of how the integration of processes can increase their sustainability and economy.