

Production of cellulosic fabrics from agricultural wastes and industrial by-products

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The growing needs for raw materials of natural origin for the textile industry have led our attention to be directed both to the comprehensive exploitation of agricultural resources and to recycling. Industrial hemp, used to obtain oils or other products, has the fibrous stem as a by-product that is used in the paper industry or in the field of composites. On the other hand, imported coffee bags, which are made of jute, are a great source of this fibre that could be recycled for textiles.

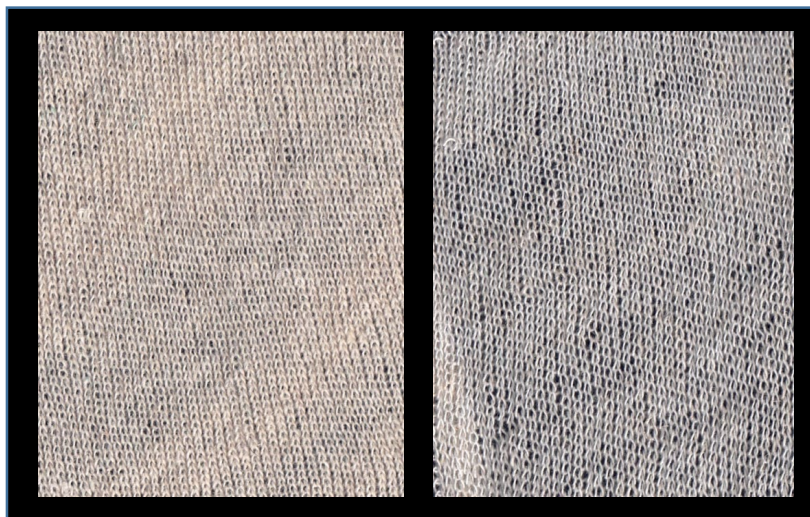
Then, this work has as purpose to manufacture textile products directly from residual industrial hemp and coffee bags of jute.

The fibres are chemically and mechanically treated [1] to obtain clean delignified fibres that are able to be spun by open-end ring spinning mixed by other fibres.

Mixtures of hemp (HA) or jute (JU) with cotton (CO) or lyocel (CLY) with the following characteristics have been obtained:

- Composition (%): 10/90, 20/80 and 30/70 (HA or JU / CO or CLY)
- Count (tex): 40, 50, 60, 70, 80
- Stitch length (mm): 7.5, 9.1, 10.6

The parameters measured are colour, brightness and touch.



Fabrics 20/80 (JU/CO, left; JU/CLY, right), 50 tex, 9.1 mm stitch length.

[1] "Method for obtaining textile yarns from lignocellulosic wastes or by-products and fabric obtained by the method", European patent application no. 23382311.1.

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