BIOCHEM show case

A cheaper and lower energy route to the stonewashed look

Problem

Providing jeans with soft feel and attractive colouration of the 'stonewashed' look is an expensive business. New jeans are washed with crushed pumice and acid to scuff, soften and fade them. This requires open-cast mining of pumice, at lot of energy input to the washing and disposal of difficult solid waste.

Technical solution

Use cellulases to degrade the cotton fibres of the fabric. Both Genencor and Novozyme are active in this market.

Genencor discovered a new cellulose derived from a new species of strictly alkaliphilic Streptomyces. The bacterium was isolated from the soda mud flats on the shores of the highly alkaline Lake Nakuru in Kenya. For economic production, the endocellulase gene was cloned and expressed in Streptomyces lividans, and commercialised as IndiAge Neutra in 1999. Novozymes has similar products – also obtained from extremophiles.

Benefits

- **Reduced use of non-renewable pumice**
- **Lower energy consumption**
- **Lower water consumption**
- **Less damage to the fabric so greater durability**
- **Softer fabric through more controllable process**

- **Easier to manage effluent**
- **Lower cost**

Additional information

Genencor IndiAge NeutraFlex

Website

http://primagreen.genencor.com/fileadmin/user_upload/live/primagreen/documents/Genencor_Textile_Product_List.pdf

Novozymes Denimax-Core

Website

http://www.novozymes.com/en/solutions/textile/biowash/Denimax-Core/Documents/Denimax_CORE.pdf