



Bacteria can give jeans right 'fade'

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New Delhi: A bacteria found in the soil of parts of Uttar Pradesh could soon make your favourite denim softer and smoother. Scientists of Pune's National Chemical Laboratory (NCL) have discovered an Alkalithermophilic Thermomonospora bacteria, produced enzyme, which when mixed with coarse denim cloth reduced its hairiness and made it soft and lighter.

This new technique could soon replace the traditional stone-washing technique — use of pumice stone in a water-loaded tumbling machine which produces severe wear and loss of tensile strength of the fabric.

The new enzyme-induced bio-finishing of denim in trials also managed to give the denim a better wash-down look, colour contrast and did not result in any back staining of the indigo dye. Mahi Rao of the laboratory told TOI that the team has been looking for organisms that are capable of living and growing in extreme temperatures for the past three years before they isolated the bacteria from Karabanki that produces the enzyme called cellulase.

"Trials conducted in collaboration with the Ahmedabad Textile Industry Research Association found that the cellulase produced through fermentation was highly effective in bio-finishing

of denim cloth. It gave the same appearance as a stone wash, caused no damage at all to preventing wear and tear of the material."

She added: "We have found a more environment friendly option to stone washing. It also does away with the problem of back staining — when loosened dye particles redeposit onto the back surface of the fabric, causing discoloration."

A small dose of enzymes can now replace several dozen pounds of pumice stones increasing productivity by 50% because the space taken up by the pumice stones in the washing machines can now be filled with more jeans. And there is no need for the time-consuming and expensive task of removing stone fragments from the jeans they are washed with.

There is also no pumice dust to endanger employee's health or sediment to clog drains. NCL is now planning to transfer the technology to an industry partner for regular usage. "We will soon transfer the technology of developing the bacteria in-house to an industry partner."

The enzyme will be developed by companies specialising in producing commercial enzymes. All that the textile industry will have to do now is mix a few drops of enzyme with the fabric and shake it," Rao added.

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