New leather tech by city scientists leaves no waste

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Chennai: Indian scientists have developed a technology in leather processing that may put an end to the pollution caused by effluents discharged from tanneries. The dry tanning technology invented by scientists at Central Leather Research Institute (CLRI) here uses a biodegradable compound instead of water.

Along with the compound, which was developed in the CLRI lab, a tanning agent (chromium sulphate) is used. The process leaves no effluents as both the compound and the tanning agent are absorbed by the leather. Scientists claim the new technology saves about 40 per cent of the processing time, and the amount of tanning agent required is half of what is used in the conventional process.

At present, tanneries in the country use about 15 million litres of water everyday (five to eight litres for a kilo of skin) during the tanning process. Besides, up to 100g of chromium sulphate per kg of skin is used along with water. This apart, a large amount of salt and acid are used in pickling, a conditioning process prior to tanning. The salt, water, unutilized acid and tanning agent are later discharged as effluents. For every kg of leather, roughly 40 litres of effluent is produced, say experts. The tannery effluent, with its high level of salinity, has been a major pollutant of groundwater. The new technology not only does away with the use of water, but also with the pickling process, scientists said.

“About 2,300 tonnes of skin are processed in tanneries in the country every day and about 930 tonnes of salt is used during the conditioning process,” said C. Murudharaan, chief scientist at CLRI.

The scientist explained that since the pollution control board in TN mandates tanneries to reuse the water let out as effluent, a large amount of money is spent to remove the salt from the water. “Tanneries have installed reverse osmosis plants and they spend about Rs 13 to Rs 15 to remove one kilo salt from water. The operational cost is so high and the sustainability of the tanneries is a question now,” the scientist said.

“This is a tested technology and it is ready for commercial use,” Murudharaan said. Prof Asit Ranjan Mandal, director of CLRI, said while they have applied for patent for the technology, many multinational companies have already approached the institute for licence to use it.