

Scientists to turn chicken feathers into socks

Scientists are hard at work in a new R37m research laboratory in Durban, expecting to turn tonnes of chicken feathers into anything from shampoo to shirts, socks and reinforcement fibres for rockets.

And it is not just chicken feathers they are trying to turn into money but a range of unwanted "waste" products discarded every year by major South African industries.



R37.5m biorefinery facility launched in Durban to extract maximum value from biomass waste

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"We are throwing away millions of rand every day. It is such a waste and a highly irresponsible use of our natural resources," says Prof Bruce Sithole, chief scientist at the Council for Scientific and Industrial Research biorefinery in Durban.

From waste to value

Speaking at the launch of the new biorefinery research facility this week, Sithole noted that less than 50% of each tree processed by the pulp and paper industry was turned into a commercial product. The remainder (bark, sawdust, sludge or fly ash) was either burned, dumped into landfills or pumped into the sea.

Mmamoloko Kubayi Ngubane, the new science and technology minister, said nearly one billion broiler chickens were slaughtered locally in 2013, leaving behind a pile of nearly 240 million kg of feathers every year that was mainly dumped in landfill sites.

To turn this mountain of feathers into something more valuable, Dr Tamrat Tesfaye and colleagues in the Durban biorefinery are boiling and digesting piles of sterilised feathers to extract keratin proteins, which can be turned into several high-value products.



4028mdk09 via [Wikimedia Commons](#)

Other scientists are experimenting with how pulp and paper waste can be transformed into high-value cellulose nanocrystals, which fetch about \$1,000 for every kilogramme.

Council for Scientific and Industrial Research officials said the biorefinery research facility was the first of its kind in SA and was equipped with specialist equipment owned by just a handful of local institutions.

Source: Business Day

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