

# Feather scientists have Christmas all wrapped up

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(PhysOrg.com) -- Material scientists at The University of Manchester are causing a festive flap after developing a way of making Christmas wrapping paper – from TURKEY FEATHERS.

A team led by Professor Chris Carr from The School of Materials has broken down and filtered large amounts of bird feathers.

Researchers then used special machinery – unique to The University of Manchester – to turn the feathery pulp into paper.

And to mark the festive season, Prof Carr has joined forces with Dr Nick Clarke from The University's state-of-the-art Digital Print Centre to create colourful feather-based wrapping paper.

The new innovation from Manchester scientists – piloted using duck, goose and poultry feathers – opens up the possibility that in future years the paper used to wrap a family's presents could be made from feathers plucked from the turkey they are eating for Christmas lunch.

According to the National Farmers' Union (NFU), 10 million turkeys are consumed in the UK over the festive period – with around 6 million of them reared in the UK.

And according to DEFRA figures, in 2007 the UK produced 1,264,400 tonnes of chicken\*.

The vast majority of feathers plucked from these birds are incinerated or end up in landfill. Each of these methods has implications for the environment.

It is estimated that around 120,000 tonnes of poultry feathers are produced every year in UK alone.

And there is a pressing demand for an alternative processing route for the feathers – especially as companies currently have to pay for unwanted feathers to be taken away.

As well as paper, scientists at the University have been able to make plant pots that are potentially flame retardant and more biodegradable than traditional plastic plant pots.

Researchers believe these feather-based pots may also offer enhanced fertilising properties as a result of the nitrogen supplied by the protein in the feathers.

Using The University of Manchester's unique paper pilot plant, they have even made prototype EGG BOXES from unwanted feathers.

And in future years vegetable peelings may not go to waste, as researchers have even looked at making paper from these.

Professor Carr said: “Over recent years we have been working closely with industrial partners to characterise feathers, develop suitable cleaning technology and identify potential opportunities for new and novel products.

“Our progress in this field and the production of prototype products would have been impossible without the unique paper production pilot facility we have on campus. We are fortunate to be the only university in the UK to boast such advanced equipment.

“We are very excited and encouraged by our results and the prototypes we have produced, although there is still some way to go before products start to appear on the shelves.

“We see this as a real opportunity to take the large volume of poultry feathers, which are currently being incinerated or dumped into land fill sites, and put them to good use.”

The University of Manchester is currently working with industrial partners to develop the necessary processes and technology to produce commercially viable feather-based products.

Provided by University of Manchester

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