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# Wool is Biodegradable

**Author:**  
International Wool  
Textile Organisation

## Wool Composition

A biodegradable product can be broken down biologically into natural raw materials such as carbon dioxide, water and naturally occurring minerals. These are then reintegrated into the nutrient cycle. Conditions needed for products to biodegrade are oxygen, warm temperatures and humidity.

Wool grows naturally on sheep, and is made of a protein called keratin – the same protein that is in human hair. During the biodegradation process, fungi first destroy the ends of the wool fibre. Bacteria then digest the weakened fibre by secreting enzymes. The carbon-to-nitrogen ratio of wool is quite narrow, meaning that wool has a high percentage of nitrogen. This high percentage of nitrogen is the reason wool biodegrades so well.

**“Wool grows naturally on sheep and is made from a protein called keratin”**



## Wool in Landfill

In most tests, a wool product such as a jacket is buried in soil which provides the necessary microbes, moisture, temperature and pH-value. To retrieve the garment more easily, it is placed between two wire grids. After a certain period of time, the test garment is dug up in order to observe and document the decay. Tests show that with the ideal conditions, wool products are almost completely degraded after six months in the ground. Seams may not degrade as easily as the rest of a garment, because they consist of a double (hence thicker) layer of fabric and are often sewn with polyester thread. The dyes used on a wool product do not impact the results.

Products that are biodegradable are part of a natural cycle. They come from nature and go back to nature, enriching the soil and nourishing new life. In the UK alone, around 350,000 tonnes of used clothing go to landfill every year. The numbers are similar for other developed countries. Products made out of synthetic fibres can take 30-40 years to degrade, contributing to the ever-increasing piles of waste in landfills. Because it naturally degrades in a fraction of that time, wool is the obvious choice for anyone concerned about the health of our planet.

Campaign for Wool & IWTO | Wool is Biodegradable



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## About IWTO

With a world-wide membership encompassing the wool pipeline from sheep to shop, the International Wool Textile Organisation (IWTO) represents the interests of the global wool trade. By facilitating research and development and maintaining textile industry standards, IWTO ensures a sustainable future for wool. To learn more about IWTO and its activities, visit [www.iwto.org](http://www.iwto.org).

