



GREEN PAPER

A guide to
grass paper
by Model



Alternative raw material for paper

What is grass paper?

Instead of obtaining fibres for papermaking from wood, it is also possible to extract them from grass or hay. Contrary to gaining fibres from wood, where the pulp is separated from the lignin (also contained in wood) using a lot of energy, water and chemicals, grass can be prepared using purely mechanical methods, which makes it particularly eco-friendly. Grass paper consists of maximum 50% grass fibre (usually 20%) and the rest is primary or recycled fibre from conventional sources.

Where does the grass come from?

In principle, grass from any meadow can be used as raw material for paper manufacture. From an ecological and economic point of view, however, it only makes sense to use grass that is not also used as animal feed. The grass fibre offered by CREAPAPER* originates from ecological compensation areas, which, by law, are only permitted to be cultivated extensively. The grass in these compensation areas is usually not utilised because of its inferior feed quality. Using this grass for paper manufacture therefore ensures that no resource conflict arises.

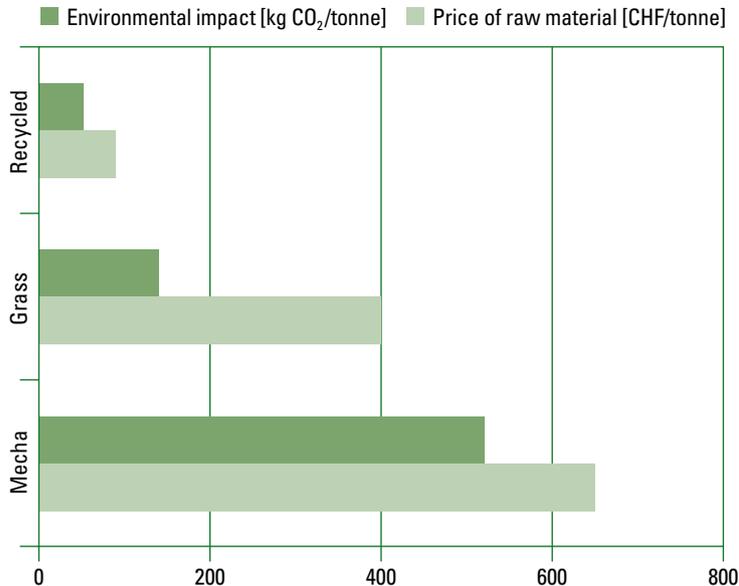
* www.graspapier.de

How does the ecological balance sheet for grass paper compare to that of primary fibre paper and recycled cardboard?

Manufacturing paper fibre from grass only requires around one-third of the CO₂ equivalent used to manufacture paper fibre from wood. Conventionally manufacturing pulp from wood requires the removal of lignin, the binding agent and main component in wood. This separation process requires large quantities of water, energy and chemicals. The opposite is true for the recycled material. Both the shredded recycled material and the previously prepared grass fibre can be fed directly into the paper production process via the pulper. The environmental impact of the recycled material is very low compared to that of grass at about one-third (see chart).

How economically viable is grass paper?

High costs for the preparation of fibre material are also reflected in the price. One tonne of raw fibre from conventional pulp is significantly more expensive than fibre from grass. The same applies when comparing grass fibre to recycled material. As can be seen in the chart, grass fibre is much more expensive. On top of this, there is also the fact that processed products (paper and cardboard) containing grass fibre are disproportionately expensive, because they are not produced in sufficiently large quantities.



How can grass paper be used sensibly?

As an essence of the questions answered above the following rules of application result:

1. For environmental reasons and with regards to economic viability, grass fibre should only be used as a substitute for conventional primary fibre from wood.
2. As grass fibre paper is not as strong as comparable kraftliner, it only makes sense to use it for applications with low mechanical requirements.

What are the most important properties of grass fibre paper?

Paper with grass fibre

- ... Conveys sustainability with its appearance. The green grass fibres are visible.
- ... Is not as strong as kraftliner of the same weight (strength comparable to that of testliner).
- ... Gives off an inherent smell of hay. (Methods for manufacturing odourless fibres are currently under development. This requires the separation of odour-causing proteins, which will, however, negatively affect the ecological balance sheet and price.)

3. Combining grass fibre with recycled fibre does not make logical sense, because although the material is just as strong, it is significantly more expensive and has a worse eco-balance than the pure recycled material. It may be true that this kind of material has an eco-friendly look to it, but it should be considered greenwashing.

Solid cardboard packaging made with primary fibre, in particular for (non-odour-sensitive) food, is a good example of a perfect application for grass paper.



modelgroup.com

