

Thin and formable sheet material from plant and flower waste



Crop

Freesia
Freesia
Grasses
Poaceae
Rose
Rosa L.
Tulip
Tulipa
Fir
Picea

Croppart

Leaf
Bud
Flower

Application area

Materials

Status

Start-up stage

Public availability

Semi-public

Relevant plant compounds

Fibres

Residuals

Description

Horticultural waste and **natural residual streams** are now mainly burned or composted, which is an enormous value destruction.

These residual flows can also be examined to be of value in other ways. By drying and grinding these waste streams, new useful raw materials are created from which new materials and products can be made. This way you can add value to horticultural waste instead of destroying it.

VanHier developed a recipe and production process to convert natural residual flows into **sheet material**. The possibilities are endless, for example we can process agricultural, horticultural and natural waste into sheet material. This material can be used as a finishing in **interior design**, or for **furniture** and **product designers**. We call this material **BioM**, which stands for **BioMaterial**.

BioM consists of 100% natural fibers and natural binders. It is a high-quality decorative laminate with a beautiful natural appearance. A sheet of BioM has a thickness of approximately 2 mm. and is thermally mouldable and bendable. It is moisture removable and suitable for indoor applications.

To obtain strength properties, you can apply BioM as a veneer to sheet material, or laminate multiple sheets with a natural binder.

The fibers of the horticultural waste are clearly visible in the sheets, giving them a beautiful natural look. Each waste stream has different properties and a different look.

We can offer different colors of sheets by processing natural non-damaging color pigments. We work with semi-transparent colors so that the decorative effect of the natural fibers remains visible.

Unlike plastic sheet material, BioM is biodegradable (compostable), also recyclable, not harmful to nature and climate positive.

Examples of end products



Veneer of natural fibers

BioM consists of 100% natural fibers and natural binders. It is a high-quality decorative laminate with a beautiful natural appearance. We process different types of natural residual streams into thin formable sheet material. We produce sheets with residual materials Freesia, Cattail, Reed, Roses/Flowers and Fir. The character of the natural fibers can be seen in the plates. We can also add natural pigments to the veneer to offer a different color palette.

Research topics

Development of various recipes, materials and related products.

Van Hier develops new materials from various types of natural fibers left over from horticulture. These include residual flows of, for example, freesia leaves from a flower grower or reed cuttings from Natuurmonumenten. For these residual flows, we develop various recipes corresponding to the different types of natural fibers. We test the recipes and process them in our production process to produce thin, mouldable sheet material. In addition to use as veneer, we are also developing other products.

Pros and cons

- + Upgrading waste streams
- + Climate positive
- + Building a circular value chain
- + Scalability

- New production process
- Setting up the complete value chain

Resources

<https://van-hier.com/> Initiative website

[VanHier @ Voor de wereld van morgen \(Dutch\)](#) Publication

[Kerstbomen van Van Hier](#) Publication

[Citylab010 De BioMaterialen fabriek \(Dutch\)](#) Publication