

# Sphagnum farming in Germany

## 10 years on the road to sustainable growing media

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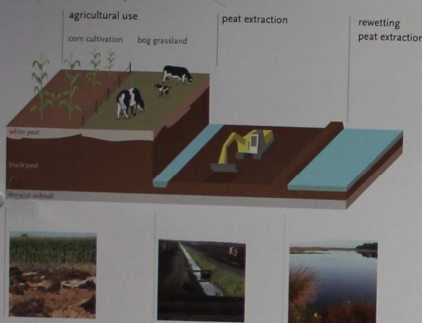


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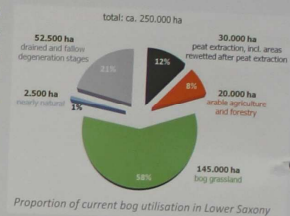


Current bog utilisation types in NW Germany (Lower Saxony).

### Introduction

The region in Germany most abundant in bogs is the Northwest (Lower Saxony), but only 1% is still in a natural state. Virtually the entire bog area is thus losing carbon and heavily emitting greenhouse gases. Sphagnum farming as a wet, site adapted and sustainable alternative allows to use abandoned cut-over bogs and degraded bog grasslands in a climate friendly, sustainable way and to re-establish many ecosystem services of pristine mires.

At least of the same importance is the provision of Sphagnum biomass as an alternative for fossil white peat in horticulture.



### After 10 years we know...

#### Growing media

...that Sphagnum biomass - up to 100% - is a suitable raw material for horticultural growing media.

#### Sphagnum

##### • propagation

...which *Sphagnum* species are suitable both for growing media and for Sphagnum farming and which not.

*generative*: Spores germinate well and build first plantlets in the greenhouse, but not in the field.

*vegetative*: Small fragments produce more capitula. Fresh propagules are best suited for Sphagnum field establishment.

##### • establishment

Large propagules started increasing in length and cover faster than small propagules.

Establishment can be accelerated by low straw mulch coverage at the beginning and by maintaining continuously high water levels.

##### • productivity

A high and stable water level is the most decisive factor for *Sphagnum* growth whereas fertilisation has only minor effect.

Productivity values mainly range between 3 and 6 t dry mass ha<sup>-1</sup> yr<sup>-1</sup>.

##### • regeneration

6 months after cutting the peat mosses to a length of 2 to 5 cm only 15% had regenerated new capitula, after 12 months 80%.

#### Mechanisation

...how Sphagnum farming on rewetted peat areas and deeper water works and which risks are to be expected.

#### Profitability

...that farming Sphagnum biomass is already profitable for niche markets, but so far cannot compete with low-priced white peat.

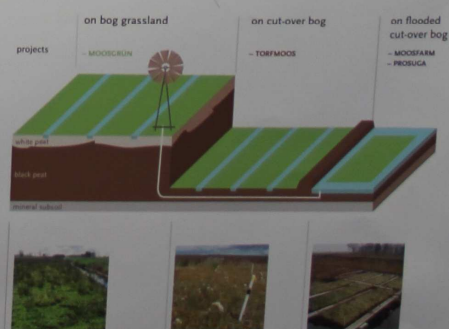
### Challenges for the future

**Growing media** In future new and adapted *Sphagnum* based substrates have to be developed for further applications in horticulture.

***Sphagnum* species** So far we used only mosses of a few origins. Further selection is needed to find better provenances.

**Mechanisation** The future challenge is to mechanise the entire production process to foster broad implementation of Sphagnum farming. Machines and methods have to be developed for mass production of *Sphagnum* propagules and for managing and harvesting Sphagnum fields.

**Profitability** Payments for ecosystem services re-established by transforming drained bogs into Sphagnum farming fields can improve profitability and facilitate the sustainable production of this promising, renewable raw material.



Mosaic of different Sphagnum farming types on degraded bogs.

[www.sphagnumfarming.com](http://www.sphagnumfarming.com)

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