



EXCURSION GUIDE



Premier Tech's peat moss comes from bogs that are certified under the Veriflora Program. This certification ensures the application of good management principles in all aspect of sustainable development. The criteria include environmental assessment, social engagement and product quality.

WHAT IS PEAT MOSS?

THE FORMATION OF PEAT MOSS

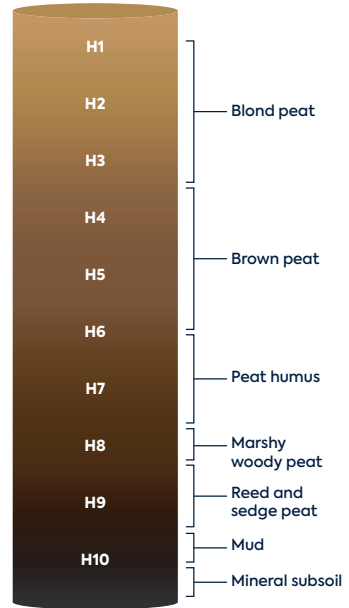
The peat moss that is used in horticulture is made up of partially decomposed Sphagnum mosses. Peat moss is formed by the accumulation of plant debris found in a specific type of wetlands, called peatlands. In North America, these wetlands developed following the retreat of the last glaciers and have continued to develop for the past 5,000 to 10,000 years.

Nature needs approximately one century to make peat moss 2-4 inches thick. Sphagnum growth rates can reach 1 to 5 inches per year, depending on peatland characteristics. However, since plant residues are decomposed and compacted as they accumulate, peat accumulation is 1/64 to 3/64 inch per year.

THE DIFFERENT TYPES OF PEAT

In its natural state, peat is a light, spongy and fibrous substance. The color of peat varies from pale to dark brown and even to black depending on its age and carbon content. For horticultural use, peat is categorized according to the degree of decomposition (Von Post Scale).

VON POST SCALE



PEATLAND OPERATIONS

The first step in the process is to clear the impacted portion of the bog. Then, shallow ditches are dug so that the peat dries and the necessary equipment can operate on the field.

Once a bog is ditched, the recurring operations begin. Harrows loosen the top layer of peat moss which then dries in the sun for two to three hours before being vacuumed into large harvesters. It is transported from the field to the plant where it is screened, graded and baled for storage or shipment.



THE USES OF PEAT

Within North America, peat is used in the horticulture sector. Peat serves both as a growing mix and as a soil amendment.

Thanks to its large cell structure that enables it to absorb air and water like a sponge, peat stimulates plant growth by regulating moisture, improving root development, increasing soil buffering, and preventing the leaching of nutrients. Peat moss is also an approved component in the production of organically certified products.

Food security and well-being can be said to characterize our products. Peat plays an essential role in food production. Peat is also a primary contributor to billions of seedlings used annually for reforestation. Governments across North America deemed the industry essential during the COVID-19 pandemic!



RESPONSIBLE PEATLAND MANAGEMENT

PEATLANDS IN NORTH AMERICA

North America's overall peatland resource base is estimated over 350 million acres. Of this land, less than 0.03% has been or is currently used for peat moss production. Over 95% of the North American merchantable peat comes from Canada.



RESEARCH – THE KEY TO INTEGRATED SUSTAINABLE MANAGEMENT

The Peatland Ecology Research Group (PERG) was formed through the partnership of Canadian universities, the Canadian peat moss industry and federal and provincial government agencies. The common objective of these partners is the integrated sustainable management of Canadian peatlands. The research conducted in Canada also extends in the U.S. where partners like the Natural Resource Institute (Duluth University) contributes to implement the best practice available.

Over the past 25 years, the team of researchers headed by Dr. Line Rochefort, of the Department of Plant Science at Université Laval (Québec City, Canada), has carried out several studies addressing:

- Development of restoration techniques.
- Biodiversity, hydrology, geochemistry and microbiology of natural, harvested and restored peatlands.
- Sphagnum ecology and productivity.
- Peatland conservation strategies.

Since 2003, these projects have been carried out under the aegis of the NSERC Industrial Research Chair in Peatland Management.

The peat industry is continually improving its environmental performance. In addition to the program mentioned above, the industry has participated in numerous research projects with different partners (INRS, UQAM, CIRAIG, ...) such as water quality management, carbon mitigation, etc.



PEATLAND RESTORATION

GOAL AND OBJECTIVES OF PEATLAND RESTORATION

Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed. In the case of peatlands, the goal of restoration after peat harvesting is to re-establish self-regulatory mechanisms that will lead back to naturally functioning peat accumulating ecosystems. This includes the re-establishment of typical peatland plant cover, the hydrological regime needed to maintain the system and the return of the long-term carbon sequestration function.

RESTORATION APPROACH

The restoration approach developed in Canada - the “moss-layer transfer technique” – is based on active reintroduction of peat bog plant species and hydrological management in order to raise and stabilize the water level. It consists of the following operations:

1 SURFACE PREPARATION



A leveller is used to flatten the domed field, scrape the peat surface and build berms.

2 PLANT COLLECTION AT A DONOR SITE



- Surface vegetation is shredded to a maximum depth of 4 inches using a rotovator.
- Plant fragments are then collected and transported to the restoration site.
- Donor site recovers rapidly since only the upper layer is harvested, and it can be used more than once on a sustainable basis.

3 PLANT REINTRODUCTION



A manure spreader is used to spread the plant fragments over the restoration site.

4 APPLICATION OF A PROTECTIVE STRAW MULCH COVER



Shredded straw is applied to protect the newly introduced plant fragments, especially Sphagnum mosses.

5 FERTILIZATION (OPTIONAL)

A low phosphorous fertilization may be used to encourage plant establishment and growth.

6 REWETTING BY DITCH BLOCKING



Blocking drainage ditches rewets the peatland, encouraging the regrowth of Sphagnum.

MONITORING

Monitoring is a necessary step in the restoration process because it is the only way to assess the success or failure of restoration and to determine if the objectives are met. Following peatland restoration, the most important characteristics that are monitored are:

Vegetation

- Typical bog plant cover establishes within a few years following restoration and is dominated by Sphagnum mosses.
- Restoration is successful in returning the organic matter accumulation to values that are comparable to those of natural systems.

Hydrology

- The water table rises quickly after ditch blocking and hydrological conditions necessary for moss establishment are improved.
- However, water table fluctuates more than in natural peatland. Research suggests that it will take between 10-15 years to accumulate a thick enough moss layer that will again regulate the water.

Carbon cycles

- Research suggests that annual carbon balance can be returned to near natural conditions within 7-14 years following restoration.



After 1 year



After 10 years



PT Growers and Consumers

World Headquarters
1, avenue Premier
Campus Premier Tech
Rivière-du-Loup (Québec)
G5R 6C1 CANADA

PTHORTICULTURE.COM

Sources : www.horticulturalpeatmoss.com & www.peatmoss.com