



High-quality  
substrates  
for professional  
horticulture



**PINDSTRUP**



## WELCOME

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This is an invitation to learn more about Pindstrup, our processes and products.

Peat has been at the heart of Pindstrup since the company was founded by Mr. Johannes la Cour more than a hundred years ago. Today, as one of the world's leading producers of substrates, we honour the Pindstrup tradition of supplying high-quality products, while continuing to develop our expertise and know-how.

Illustrating the dedication to continuous development, in 2016 we opened a state-of-the-art wood fibre processing plant at our facilities in Latvia. This expansion is a major step forward as we now produce large volumes of Forest Gold – wood fibre mixed with fine-grade peat. This product has been developed and perfected over many years in close collaboration between Pindstrup and nurseries all over the world. Based on great results in trials and in daily use, we have introduced Forest Gold as part of our standard range.

Having close ties to our customers is another Pindstrup tradition. We take pride in having first-hand knowledge about our customers' requirements. We understand that trust is key when we supply the substrate that will nurture the plants, and we repay this trust by delivering consistent and high-quality products, every time.

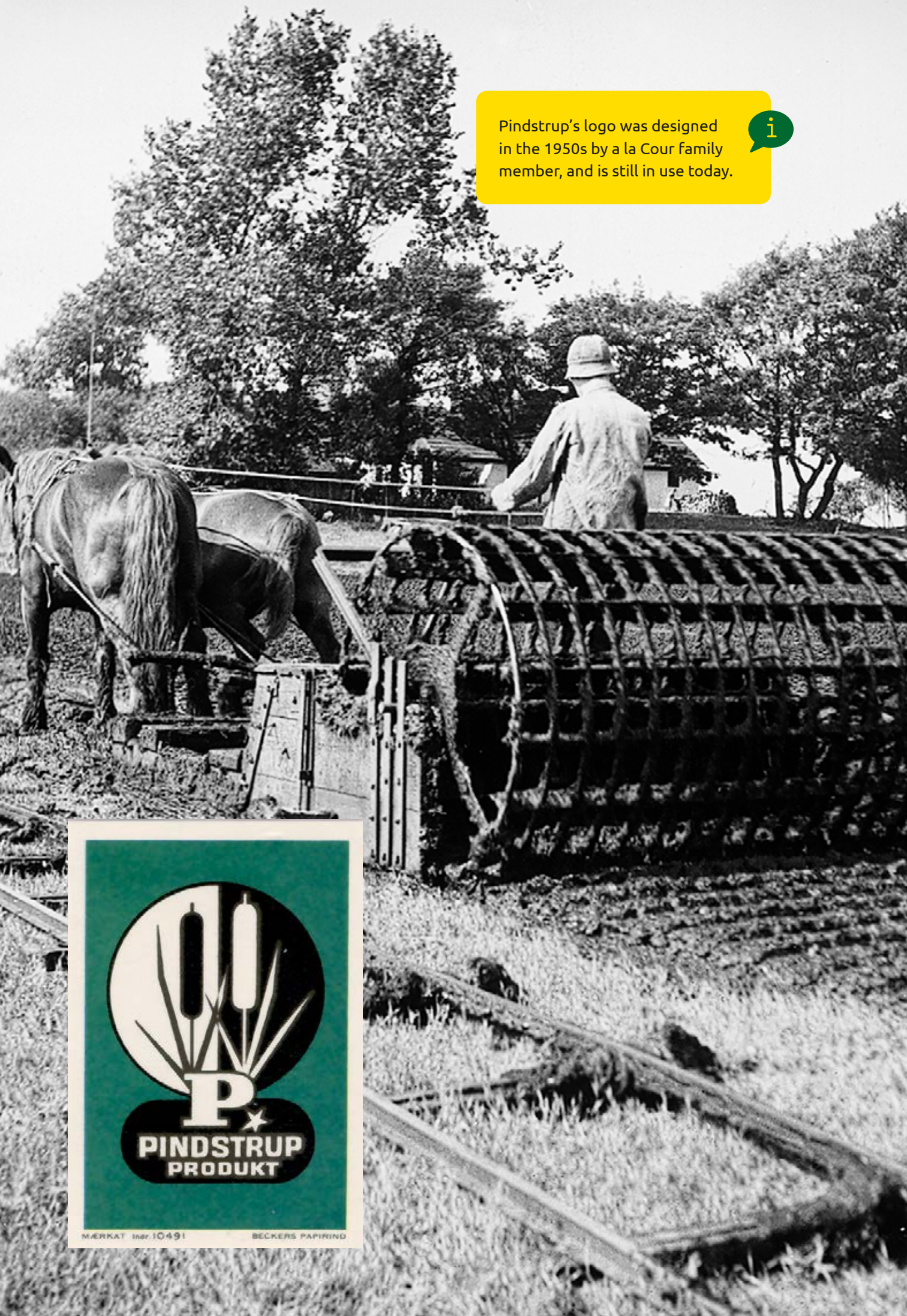
As we approach the 2020s, we at Pindstrup remain dedicated to supplying the best products to our customers.

Enjoy the read – welcome to Pindstrup!



Jan Astrup  
CEO

Pindstrup's logo was designed in the 1950s by a la Cour family member, and is still in use today.



## AROUND FOR MORE THAN A CENTURY

Pindstrup was founded in the village of Pindstrup, Denmark, by the entrepreneur Johannes la Cour in 1905. An industrious man of vision, Mr. la Cour was involved in many activities during the first decades, one of which was the manufacturing of peat blocks for heating. Peat was also sold as livestock litter.

As the use of peat for energy decreased in the 1960s, Pindstrup looked for alternative outlets for our products. At the same time, peat was found to be a great growing media for plants, and we began to develop and sell peat substrates, both in Denmark and for export. Over time, other company activities were divested, and our business has been substrates ever since.

### PINDSTRUP AROUND THE WORLD

In keeping with Mr. la Cour's entrepreneurial spirit, Pindstrup has always been open to expand and invest. From having peat bogs and plants in Denmark only, Pindstrup became an international group when we established a subsidiary in Northern Ireland in 1979, Bulrush Horticulture Ltd. Today, we operate in the Baltics, Russia and Spain, as well as in Denmark and the UK.

In addition to our production sites, Pindstrup has sales offices and consultants in many countries across the globe, catering for customers in more than 100 countries.

Still family-owned by the descendants of Mr. la Cour, Pindstrup is stronger than ever, as a company and as a well-known brand in the horticultural industry. It is our people who make Pindstrup – their knowledge, ideas and commitment. On this foundation, we will continue to build for the future.

## ACTING RESPONSIBLY

Acting responsibly and with respect for others and our surroundings has always been a core value for Pindstrup. In our everyday business, we strive to do what is reasonable and responsible in each case.

### RESPONSIBLY SOURCED PEAT

Peat has been harvested for hundreds of years, mainly for energy purposes. Earlier, when a bog was no longer in use, the area would be turned into agricultural land or simply abandoned and often become a forest.

Today, we have taken the initiative to work actively with restoration projects. Put simply, we re-introduce live sphagnum plants and carefully regulate the water level in the bog, and while it will take time for the bog to restore, we are pleased to see the sphagnum plant thriving in the harvested areas.

After just a few years, the areas are active bogs with biodiversity. Following the results in restoration projects, we have been invited to help the Danish Nature Agency on similar projects restoring drained bogs and we are happy to share our knowledge for the benefit of nature.

### WOOD CHIPS FROM SUSTAINABLE SOURCES

For Forest Gold, our wood fibre product, we source FSC-labelled wood chips from coniferous trees. Thus, we can be sure that the wood chips stem from sources that are grown sustainably, adding to our environmental credentials.

Pindstrup is currently running bog restoration projects in Denmark, Ireland and Latvia. We take great pride in returning live bogs to nature.



# ACTING RESPONSIBLY



MEMBER OF  
GROWING MEDIA  
EUROPE



ECOCERT  
Pindstrup products manufactured at  
Pindstrup Latvia for organic production  
are inspected by ECOCERT



MEMBER OF  
INTERNATIONAL  
PEAT SOCIETY

In 2003, a bog body – the Old Croghan Man – was found in one of our peat bogs in Ireland. The body is considered one of the most well-preserved in Ireland.



## RAW MATERIALS

Using the right raw materials for our substrates is fundamental to us. That is why we place such great importance on sourcing.

### PEAT

At the core of our business for more than 100 years, sphagnum peat still remains the most important raw material for Pindstrup substrates. The combination of experience and being on the forefront of development when it comes to peat harvesting technology enables us to have the best possible basis for design and production of high-quality substrates: carefully harvested peat of the very highest quality.

### FOREST GOLD

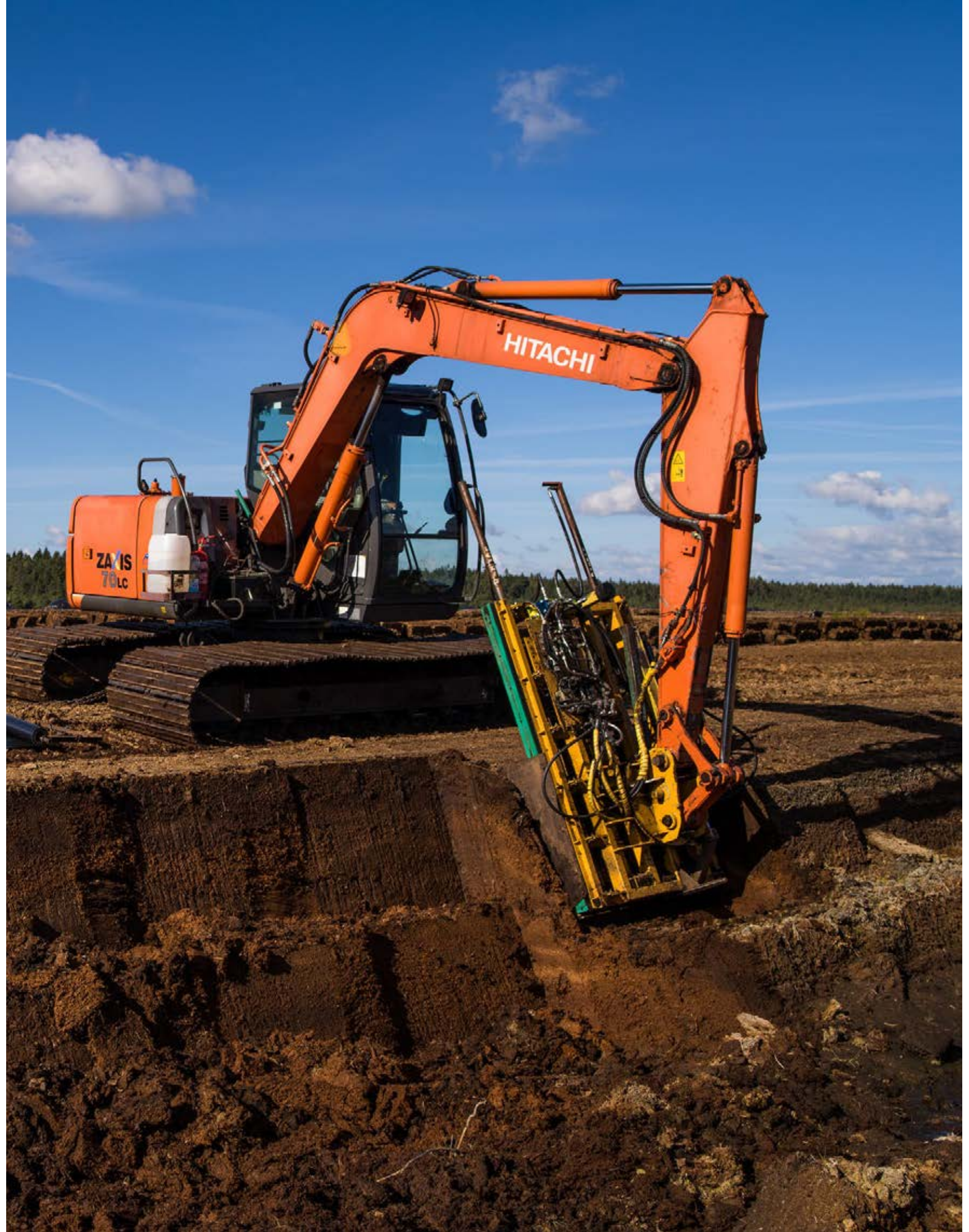
We are continuously searching for raw materials that can enhance our options in substrate design. Forest Gold, which is based on wood fibre, is such a material. It improves characteristics such as air/water ratio, distribution of water and moisture of the surface. Forest Gold is a consistent and lightweight raw material of natural origin that can be successfully incorporated into most substrates.

### OTHER RAW MATERIALS

Some customers may have preferences for special characteristics in a substrate, such as the addition of perlite, expanded clay, coco pith and fibres, compost or bark. Typically, we mix these materials with peat to add the required technical characteristics.

### RESEARCH FOR THE FUTURE

What will the substrates of the future contain? As a major player in the horticultural industry, we stay ahead of the developments within the industry and the needs that growers see today as well as tomorrow. We are continuously researching and evaluating new alternative constituents through tests and trials with customers, as well as through cooperation with universities and industry partners.





## PEAT FOR HIGH-QUALITY SUBSTRATES

### WHY DOES PEAT MAKE A GREAT SUBSTRATE MATERIAL?

The optimum substrate material should create the ideal root environment allowing plants to thrive and grow. Furthermore, it must be easy to work with, of high, uniform quality, in sufficient quantities and of course be available at an acceptable cost. Sphagnum peat lives up to all these criteria, and for that reason it has been the material of choice for growers all over the world, ever since its introduction during the 1960s and 1970s.

### HARVESTING PEAT

At Pindstrup, we harvest peat using two different methods: block cutting and vacuum harvesting (also called milled peat). We have perfected the harvesting methods as well as bog management over many decades.

### BLOCK CUTTING

Peat blocks are cut with a mechanised cutter and left on the bog to freeze over the winter. The dynamic action of freezing and thawing opens the compressed peat mass. The following summer, the dried blocks are collected and placed in stock piles.

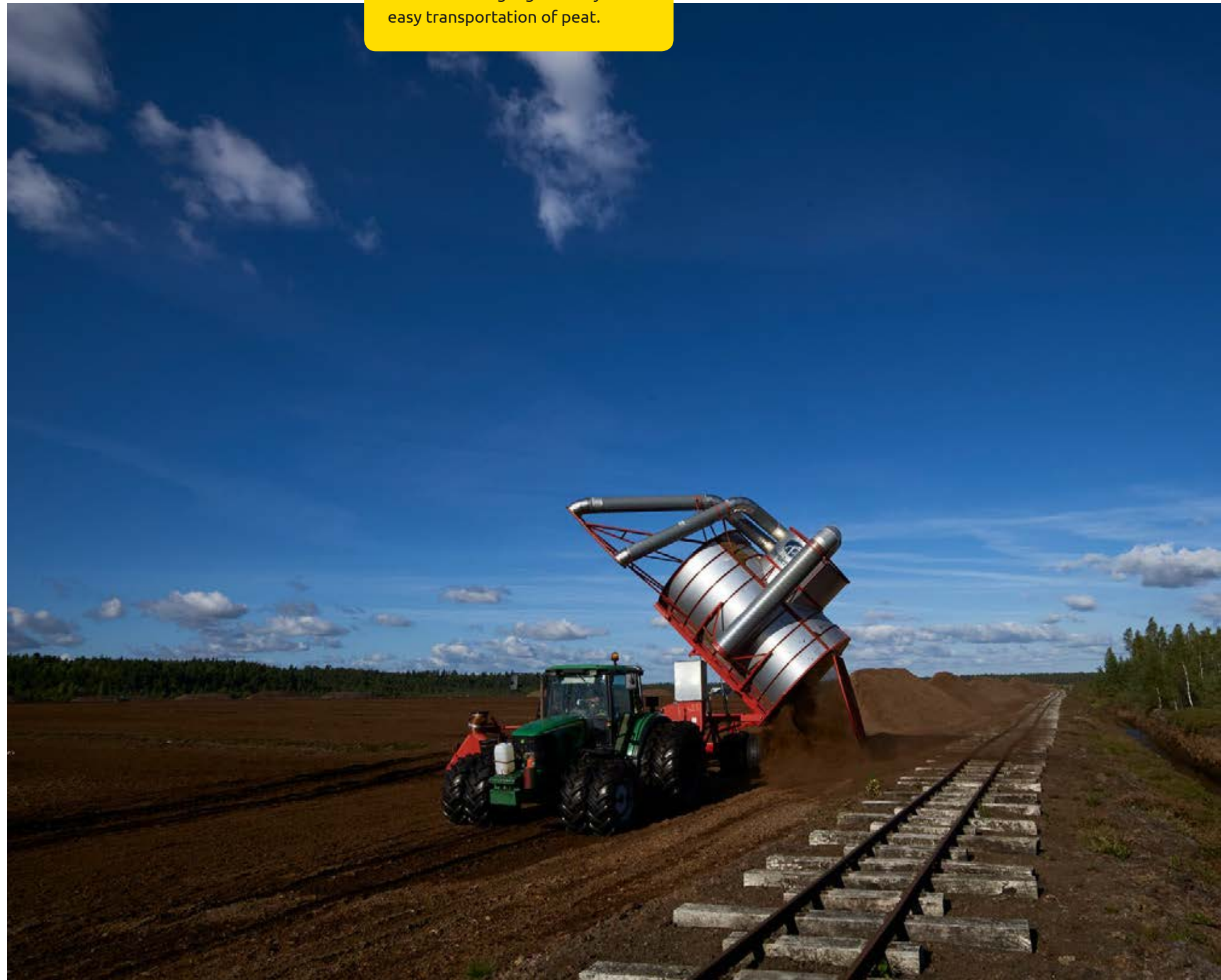
The stock piles are covered to keep dry during the winter. From the stock piles the blocks are transported to the factory for further processing. Block peat is the perfect basis for coarse screenings and is typically used in high-quality substrates for plant breeding and pot plant growing.

### VACUUM HARVESTING

Vacuum harvesting is a method where the upper layer (2-3 cm) of the bog is milled, and after drying the peat is gathered using a vacuum harvester. This method results in peat with a greater proportion of fine particles than block peat.

Pindstrup peat is harvested in 27 different bogs in Denmark, Estonia, Ireland, Latvia, and Russia.

In our bogs, we have a total of 62 km narrow-gauge railways for easy transportation of peat.





## PEAT TYPES

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Sphagnum peat is formed over thousands of years, coming in many varieties depending on geography, climate and flora, as well as the age, type and layer of the bog. This makes it difficult to have a clear and simple description of sphagnum peat.

### HOW PINDSTRUP CATEGORISES PEAT: BLOND AND DARK

Technically, peat can be described by using the von Post scale, which categorises according to degree of decomposition. At Pindstrup, we find the scale too complex to use for commercial purposes, so we distinguish between two types of peat only: blond and dark peat.

Blond peat has a dry matter content of 55-75 kg/m<sup>3</sup> and is found in the top layers of the bog. Relative to dark peat, blond peat is characterised by low weight and a lower buffering capacity for nutrient availability and pH. Thus, it offers better opportunities in terms of steering and controlling the root zone environment. Furthermore, you often find better structure in blond peat.

Dark peat is found in the lower layers of the bog and has a dry matter content of 95-125 kg/m<sup>3</sup>. Dark peat has a higher buffering capacity and conditions in the root zone are therefore more stable. When controlling the growth environment is more difficult, for instance in a warmer climate, plants react more positively when grown in dark peat mixes.

The proportion of blond and dark peat in a substrate mix depends of what the substrate will be used for. Generally speaking, mixes with a high proportion of blond peat are easier to control and offer better structure.





## FOREST GOLD

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For several years, Pindstrup has worked with wood fibre as a constituent in our mixes. Our product is called Forest Gold and consists of wood fibre mixed with fine-grade peat. Forest Gold was first developed, refined and introduced in the UK, and today we sell Forest Gold products all over the world.

Forest Gold mixes demonstrate significant benefits over 100% peat mixes with improved buffering capacity, much easier wettability and lower density. The blend is much more open with better drainage and higher air-filled porosity around the root zone.

As Forest Gold improves the physical characteristics of a substrate, it allows us to design even better substrates to suit our customers' crops and growing conditions.

### PRODUCING FOREST GOLD

Wood chips for the production of Forest Gold wood fibre are sourced locally, and only chips from FSC-certified softwood trees are used. The chips go through a defibration process where they are cooked under pressure and forced to expand into wood fibres. The fibres are then chopped and trimmed to the desired length and subsequently stabilised by mixing the fibres with a small amount of fine-grade peat.

The high pressure and high temperatures of the process ensure that the material is free from weeds, diseases and harmful organisms.

Pindstrup's Forest Gold plant in Latvia was opened in September 2016 by the Finance Minister of Latvia, Dana Reizniece-Ozola.







## SCREENING

An important part of Pindstrup's expertise lies in the screening of the peat. The screening is important for the overall quality of the substrate. From individual pots to delivery after delivery, the substrate needs to be fully uniform to ensure consistent and stable growth.

### SCREENS FOR EVERY PURPOSE

In our state-of-the-art screening plant, raw peat passes through several screens to divide it into fractions with well-defined distribution of particle sizes. This precise processing leads to a consistent product that ensures a predictable performance in the growers' pots.

For each job, we select the screens suitable for the raw material as well as the output. Rotating star-wheels are used for producing medium to coarse grades while vibrating sieves are used for fine material.

With the right combination of screens and sieves, we can separate the raw peat into many different fractions, ranging from very fine (0-3 mm) to very coarse material (>40 mm). With the option of mixing these fractions in different ways, we are able to always supply the exact screening that suits the specific needs of each customer.

In our factory in Latvia, we produce 18 different screenings of peat.





## MIXING

Another vital step in the production of high-quality substrates is the mixing. Pindstrup takes great pride in our mixing process, which is truly unique for the industry.

When we have prepared the required volume of carefully screened peat for a specific order, it is mixed in batches of just 1 cubic metre. For each cubic metre, we weigh and dose the exact quantity of limestone, fertiliser and any other additives. All of these additives are supplied automatically via computer-controlled weighing systems and the exact quantity of each additive is recorded for every batch of material produced.

This set-up guarantees thorough, efficient and careful mixing that in turn leads to uniform mixes while preserving a good structure.

### ADDITIVES

#### LIME

We add calcitic and/or dolomitic lime to adjust the pH to an optimum level for the plants to be grown in the substrate.

#### WATER-SOLUBLE FERTILISERS

For most purposes, plants will benefit from easy access to nutrients. Different plants have different needs, so we offer 8 different water-soluble fertilisers to choose from.

#### CONTROLLED-RELEASE FERTILISERS

In many situations it is preferred to feed the plant with controlled-release fertilisers. Pindstrup offers a wide range of products from different suppliers.

#### ECO

Pindstrup offers organic fertilisers to mix into standard substrates as well as customised mixes.

#### OTHER

Pindstrup has many other additives available in order to add specific biological, physical or chemical characteristics to the substrate. Never hesitate to forward requests to our experienced sales team.



All Pindstrup substrates are mixed in batches of 1 cubic metre at a time.



In 2016, Pindstrup Quality Control analysed almost 40,000 samples of raw, screened and finished products.



## QUALITY CONTROL

Pindstrup has a long tradition of dedication to constantly refining the quality of our products. Our high demand for quality is ensured by comprehensive product control in all parts of the production process.

In the bogs we test the raw peat for dry matter, water content, pH and conductivity. At this stage we also test for weed seeds.

During production, samples are continuously taken for analysis within our own laboratory. Tests include:

### DISTRIBUTION OF PARTICLE SIZE

We screen the samples to know the distribution of particles, from the finest fraction (0-1 mm) to the coarsest fibres and lumps. Every product has its own standard in order to ensure a uniform structure from one delivery to another.

### WATER UPTAKE

Substrate samples are placed in a pot, where its ability to take up water is measured in an ebb and flood system. It is important that the substrate takes up water immediately when first irrigated at the nursery.

### PH AND CONDUCTIVITY

Adjustment of pH with lime and addition of fertilisers is controlled by measuring pH and conductivity in each order as soon as it has been produced.

### DRAIN CAPACITY AND WATER-HOLDING CAPACITY

We have set standards for these characteristics for each type and screening of peat. Correct water/air ratio has significant influence on plant performance.

A substrate only leaves the factory when we are certain that it meets our quality standards. A production code is printed on all bagged products. This code gives us full traceability of the production process.

Control samples of each production are stored for later reference, if needed. The laboratory produces a control report of each production on the values mentioned above.





## PACKAGING

Pindstrup offers many different unit sizes, including 80 l bags, 300 l bales and 4-6 m<sup>3</sup> big bales. In certain areas it is also possible to deliver substrates in bulk.

All packing sizes are filled in fully automated packing lines. Bags and bales are stacked on pallets and then hooded with a thin plastic cover that adds to the stability of the pallet.

- 80 l bags are loose-filled and lightly compressed. Weight: 15-20 kg.
- 300 l bales are heavily compressed, and designed to have the optimum size for maximising the container volume. Weight: 55-75 kg.
- Big bales of 4-6 m<sup>3</sup> are also compressed to optimise transport. A big bale has a good size in terms of handling with a forklift and other machinery in the nursery. Weight: 800-1,200 kg.

Each bag and bale is marked with a unique number for traceability. Via the production log we can see full data on the production and packing processes.



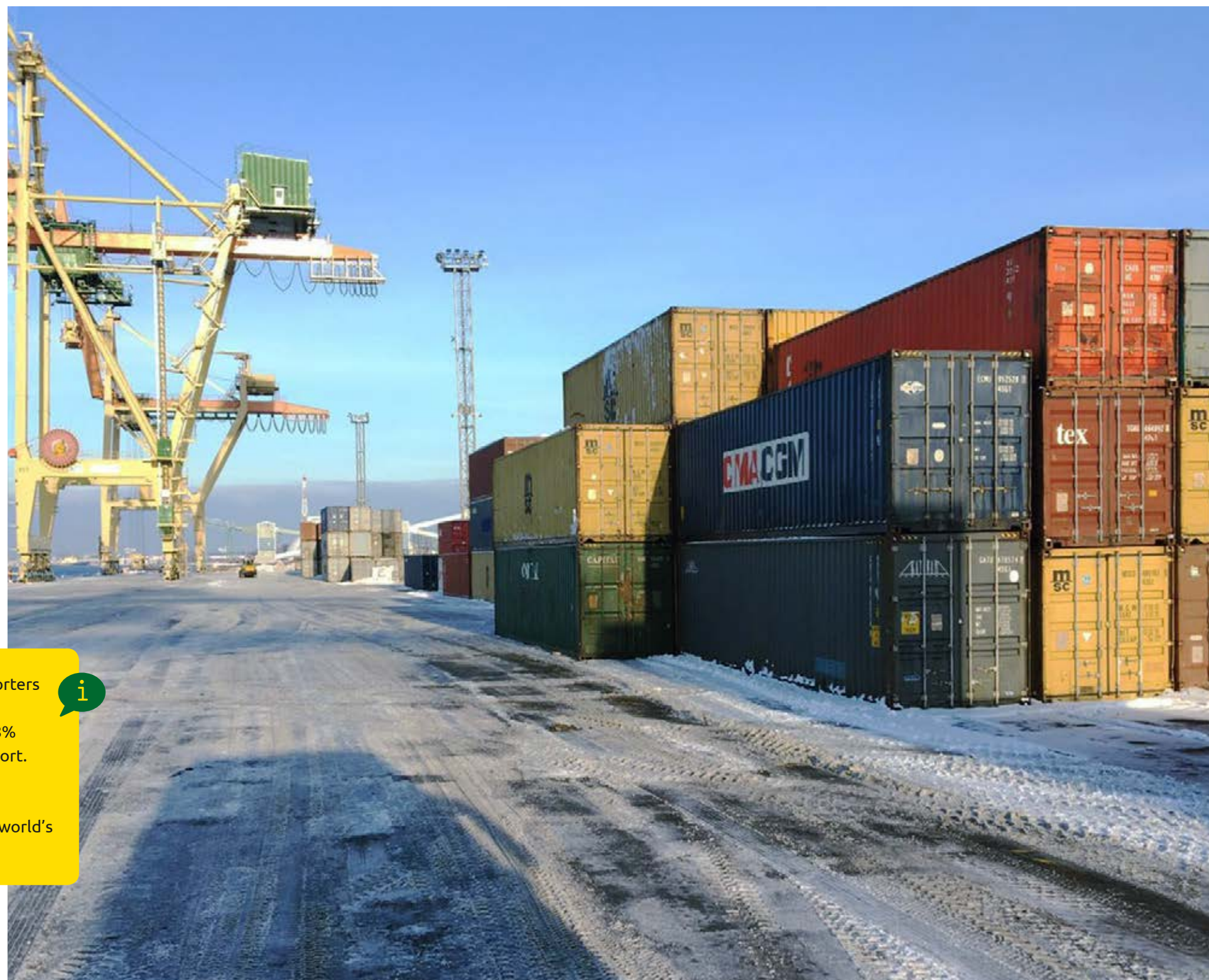
## TRANSPORT

We know how important it is to be able to trust the delivery promise of a supplier. Our dedicated and experienced staff are continuously in contact with shipping companies to make sure we deliver all over the world, on time.

In order to provide the best service and the fastest deliveries at the lowest cost, we source the most appropriate means of transport in each situation – whether it is via sea, road or railway.

We can make door to door delivery in existing markets and we find optimum ways for delivery to customers in new markets.

To ensure the best service, we communicate with all involved parties – transport companies, customers and authorities – on a regular basis.



As one of the two largest exporters out of the Port of Riga, Latvia, Pindstrup alone accounts for 8% of the annual container transport.

The annual production of the Pindstrup Group could fill the world's largest container ship – twice!



"We switched to Pindstrup for the uniformity and consistency of the product. They blend it to our specs and specific requirements, and we get very little dust and no sticks. The quality of our finished product is more uniform with Pindstrup."

**KENT COLLUM**  
PLANT ODYSSEY, TEXAS, USA

"The structure in Pindstrup substrates is very good and the price/quality ratio is the best in the market. At the same time we appreciate good personal relations and flexibility in corporation, and Pindstrup always supplies according to agreement."

**SEBASTIAAN HOOGENRAAD**  
HOOGENRAAD HANDELS-  
KWEKERIJEN BV, HOLLAND

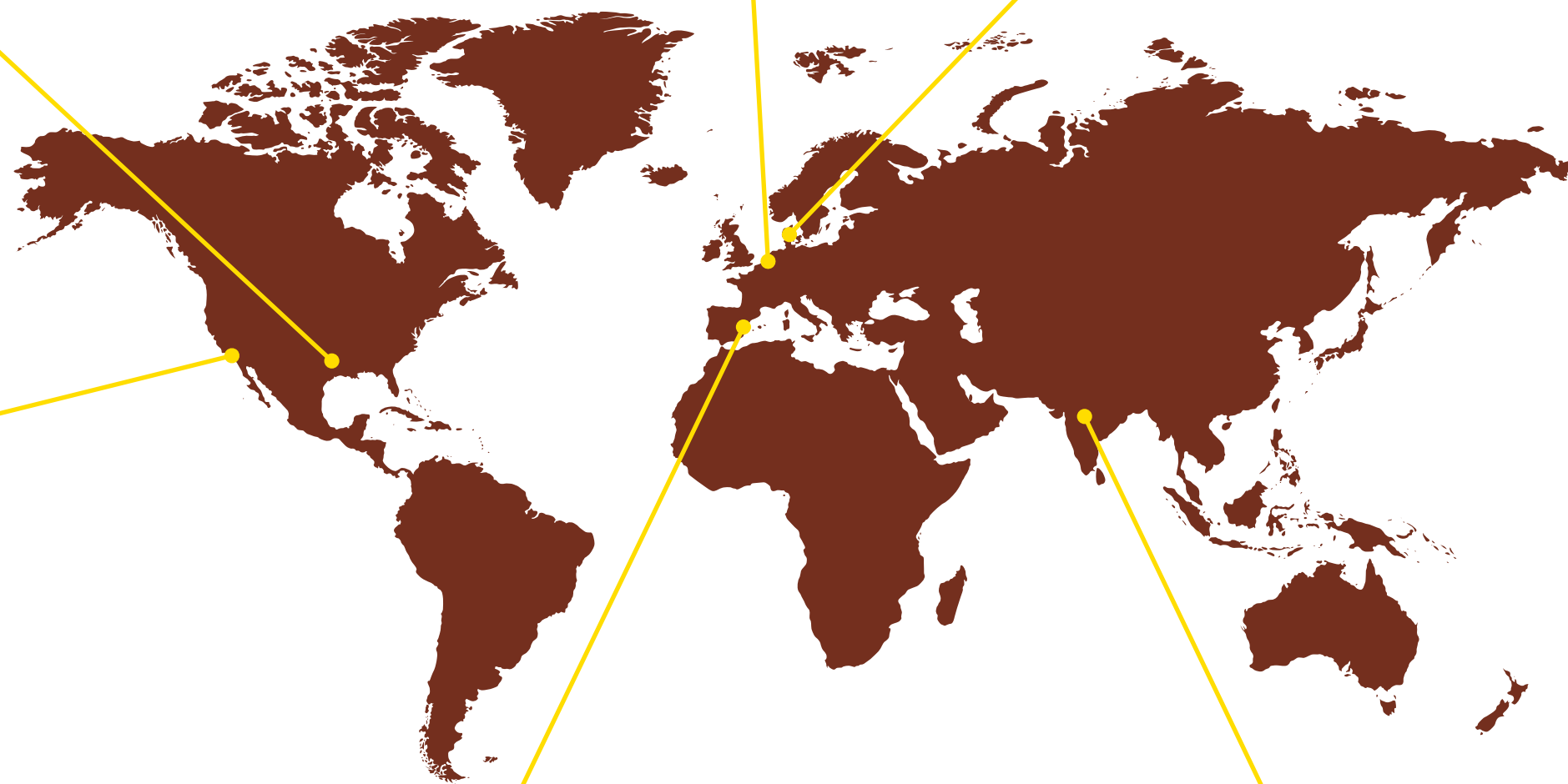


"To ensure a uniform and high quality in mini roses week after week, we always advise our licensed growers of Roses Forever worldwide to use only top quality of peat. Culture time is short so the right peat is one of the top priorities. We are very satisfied with the mix from Pindstrup, as it is always the same. Delivery after delivery."

**ROSA AND HARLEY ESSELUND**  
ROSES FOREVER APS  
[WWW.ROSES-FOREVER.COM](http://WWW.ROSES-FOREVER.COM)  
DENMARK

"Reiter Brothers likes Pindstrup substrate mixes because they offer a premixed blueberry substrate product that cultivates an ideal growing condition for substrate blues at a competitive price. The consistency of their product has been a value in providing a uniform, healthy, and productive plant and crop."

**NICK ALLEN**  
REITER BROTHERS, CALIFORNIA, USA



"We like Pindstrup propagation products as they assure a uniform quality throughout the year. Pindstrup propagation products are well-balanced with good water retention and good air capacity. This enables us to produce strong plants with healthy roots."

**JOSÉ MARIA AND ANTONIO**  
SEMILLEROS VEGAPLANT S.L.,  
DOLORES (ALICANTE), SPAIN



"Jain Irrigation Systems Limited is associated with Pindstrup for past more than a decade. They have been supplying us plant growth substrates for growing nursery plants (banana and pomegranate). We are very happy with the product quality and service support."

**DR. ANIL B. PATIL**  
JAIN IRRIGATION SYSTEMS LTD., INDIA



## PRODUCT RANGE

Pindstrup offers a wide range of products, based on blond and dark peat and Forest Gold, a large variety of screenings, and the additives requested. Standard products are available for propagation, general potting, crop-specific and organic production, and any product can be customised.

Each customer has different needs that are influenced by crop, climate and conditions, which is why we always advise customers to speak to a consultant who can help develop the right solution.



Most Pindstrup products are used for growing plants, but they are also used for other applications, for instance:

- As animal bedding in Moscow Zoo
- To add extra effect when filming explosions for motion pictures
- For a large work of art with flowers by pop artist Jeff Koons
- To produce whiskey
- As breeding ground for rare and exotic crickets in a research project
- To build golf courses and turf on football stadiums

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# PRODUCT RANGE





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