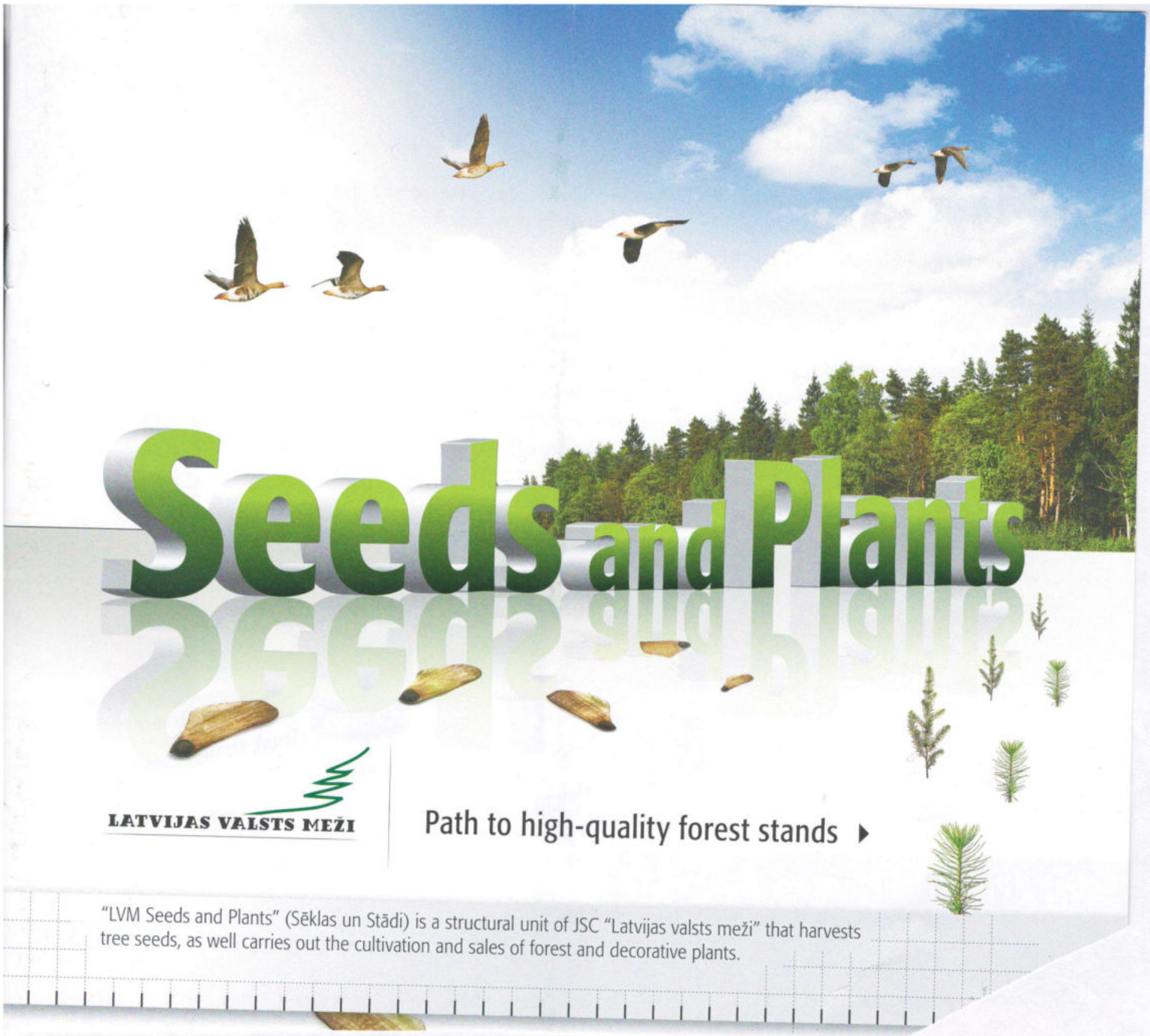


Seeds and Plants

LATVIJAS VALSTS MEŽI

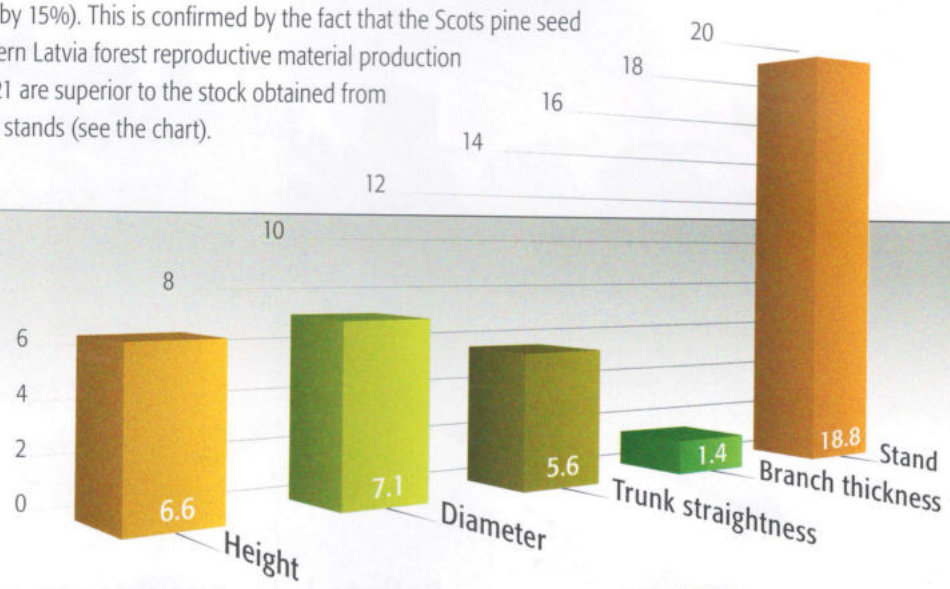
Path to high-quality forest stands ▸

"LVM Seeds and Plants" (Sēklas un Stādi) is a structural unit of JSC "Latvijas valsts meži" that harvests tree seeds, as well carries out the cultivation and sales of forest and decorative plants.

Forest Seeds

Thanks to the research in forest tree breeding of the past 50 years headed by the Latvian State Forest Research Institute "Silava" the structural unit "LVM Sēklas un stādi" (Seeds and Plants) of the Joint Stock Company "Latvijas valsts meži" is now running forest seed orchards throughout the country. Therefore genetically valuable seed material of local origin is available for cultivating the nursery stock for reforestation uses.

Thus, by using the advances in tree breeding it is possible to create healthier and more beautiful forests with increased total yield (at the cutting age the standing volume may be higher by 20% and sometimes higher by 25–30%, with the total sawlog yield that is higher by 15%). This is confirmed by the fact that the Scots pine seed orchard progeny of the eastern Latvia forest reproductive material production region at the age of 21 are superior to the stock obtained from average forest stands (see the chart).



Production process

Cultivation in seed orchards ▸


Cone harvesting
Drying

Containerised stock

The nursery stock of pine, spruce, birch, and black alder are cultivated in special container trays with cells.
The process begins by automatically filling the HIKO V120 SS trays with peat substrate, at the same time sowing one seed into each cell.
The air openings on each side of the tray ensure precise orientation of the seedling roots in vertical direction during growth.

Production process

Filling and sowing ▸

Transportation to a greenhouse ▸

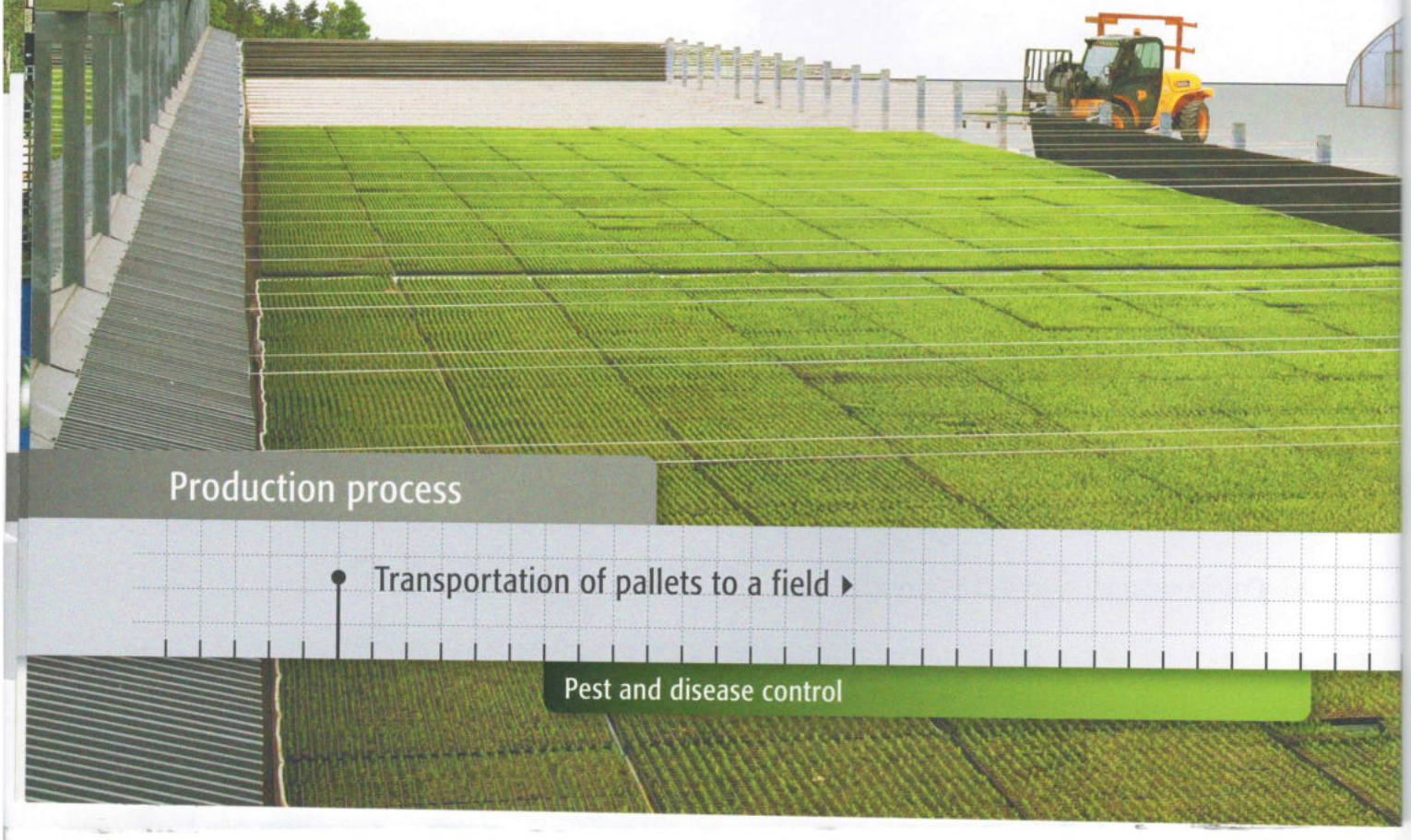
Substrate mixing and filling stage


Control of acidity and nutrients
Moisture control
Temperature control
Cultivation in a greenhouse
Full capacity watering!

First, the pallets with trays are transported to greenhouses where the seeds germinate and sprout up in controlled, favourable conditions. One month later the pallets with cassettes are transported to the field grounds and placed according to the tree species and age. Greenhouses don't stay empty – such rotation of plants is performed three to four germination cycles per season.

Water and nutrients are supplied to the plants through overhead irrigation pipes equipped with dosing units. The so-called long-night method is used to accelerate the maturing of seedlings and even off the average height of container plants, acquiring seedlings of higher quality with greater resistance within a shorter period of time.

In late autumn the plants are sorted, packed in cardboard boxes, and stored in freezing chambers for overwintering at -4 °C in order to start planting in spring as soon as the ground thaws. The substrate filling in containers protects the roots from damage during transportation and planting, and maintains the necessary levels of humidity and nutrients for tree roots to protect against replantation shock during the first year of growing.




MANITOU
Control of acidity and nutrients
Cultivation in outdoors
Moisture control
Transportation to a warehouse
Plant maturing – average diurnal temperature

Commendable practices for ensuring good intentions:

- Region of origin of the planting stock is of great importance. When ordering the plants from a nursery, inquire about which of the offered stock is suitable for your situation.
- Timely procure planting tubes (55 mm in diameter) that match the containerised plants, and also backpacks for carrying the plants and planting belts with straps for placing the containers in order to ensure ergonomic work for quickly and accurately planting from 1500 up to 2000 plants per day.

Production process

Plant packing ▸

Cold storage in a refrigerator ▸

Moisture control

- When the boxes with plants are delivered to a planting site, place them in shade. Start planting immediately without unnecessary delay.
- Make sure the substrate is moist! Don't plant if the substrate is frozen, otherwise the roots will fail to revive in soil and won't be able to absorb water and nutrients.
- Plant the tree 1–2 cm lower than the upper layer of the soil, carefully tread down the ground around it to eliminate air gaps and to prevent roots from drying-out.
- Collect empty boxes after planting!

Bareroots with improved root system

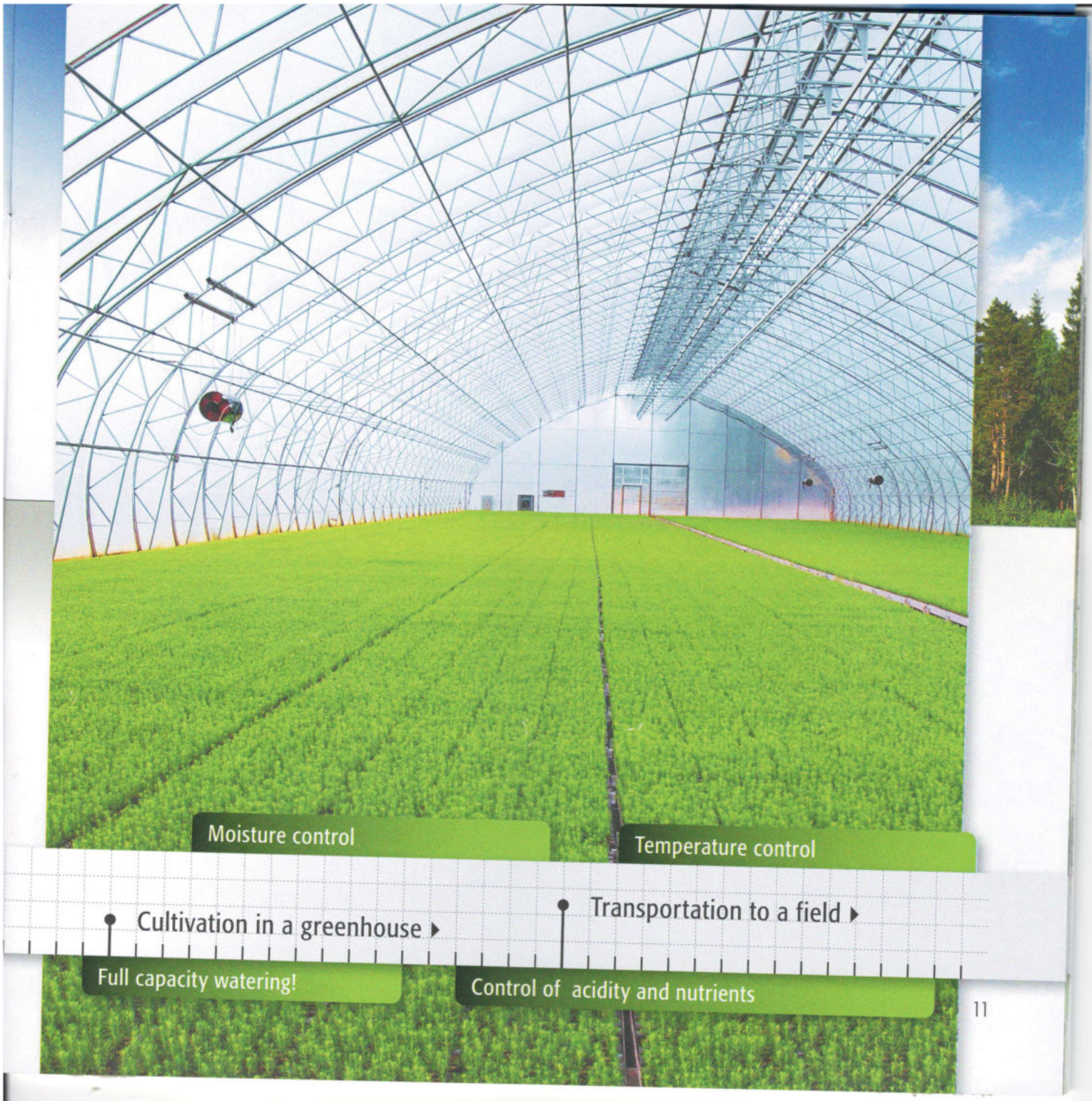
Bareroots with improved root system – spruce, birch, and black alder in particular – are more vital than the conventional bareroot stock. The cultivation of these also starts by filling the HIKO V50 SS trays with peat substrate and inserting one seed in each cell. Then the trays are kept in a greenhouse for a month. Spruce is germinated at the beginning of the growing season (two cycles per season), while birch and black alder – in autumn.

Production process

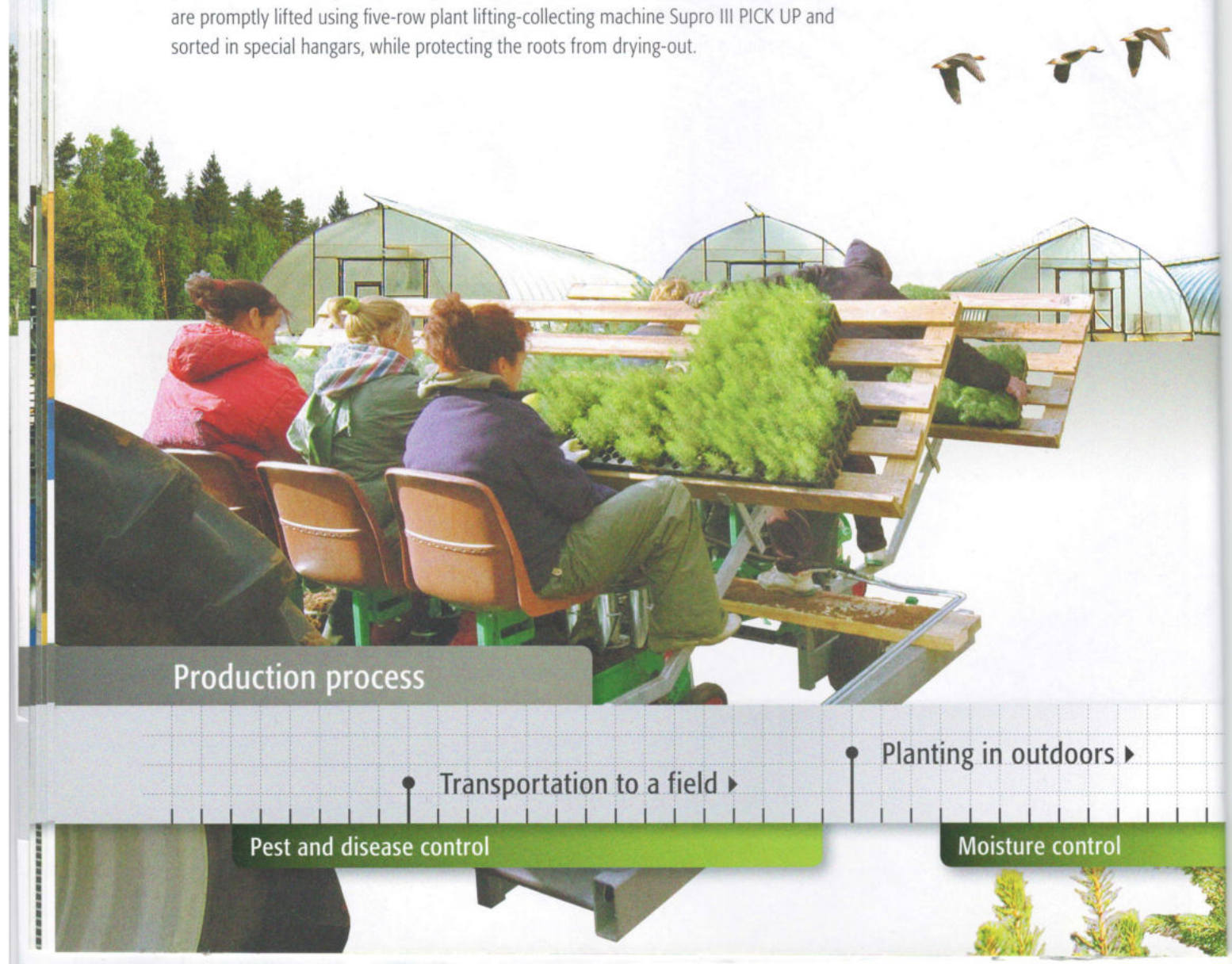
Filling and sowing ▸

Transportation to a greenhouse ▸

Substrate mixing and filling stage


Moisture control
Temperature control
Cultivation in a greenhouse
Transportation to a field
Full capacity watering!
Control of acidity and nutrients

Major replanting begins in the first half of July. Spruce seedlings are replanted onto an open field by using the LANNEN SK-10 tree planter. Replants undergo 1,5-year long intensive course instead of four years long when using conventional methods. The growing is stimulated by motorized loosening of soil between the rows, by nutrition and watering, if necessary. When the desired size of plants is achieved, the plants are promptly lifted using five-row plant lifting-collecting machine Supro III PICK UP and sorted in special hangars, while protecting the roots from drying-out.



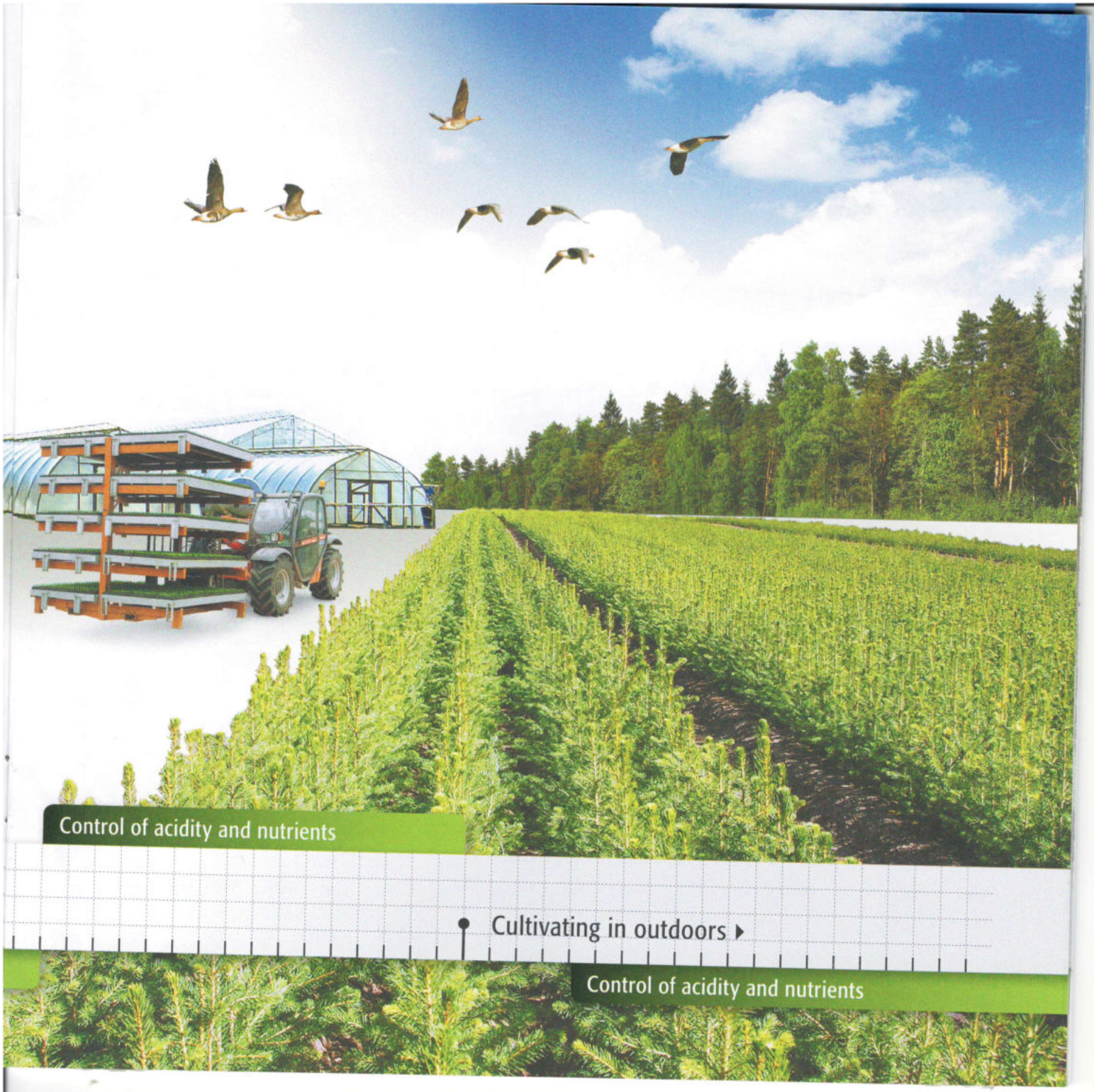
Production process

Transportation to a field ▸

Planting in outdoors ▸

Pest and disease control

Moisture control

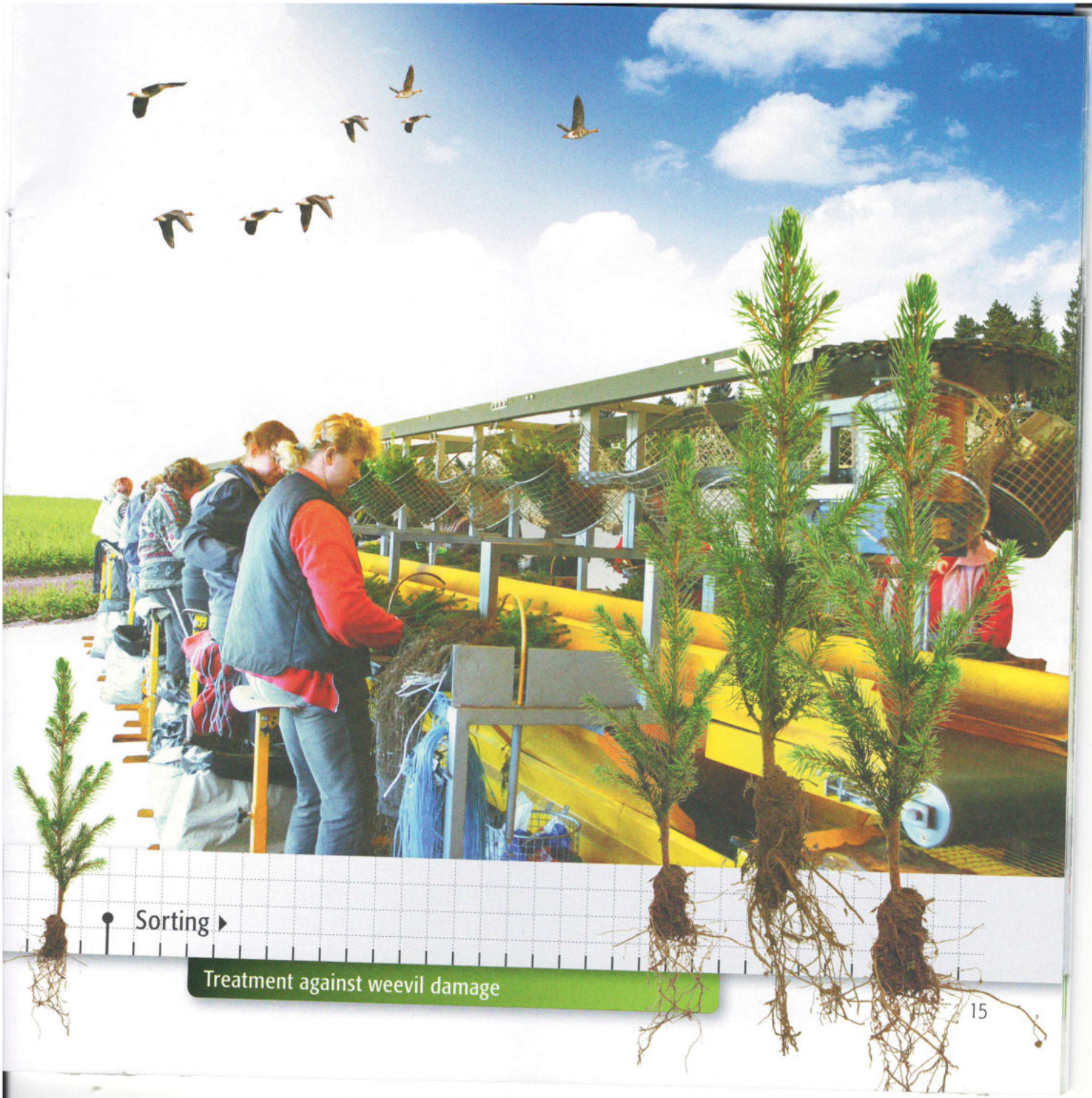

Control of acidity and nutrients
Cultivating in outdoors
Control of acidity and nutrients

In spring and autumn the plants are packed in bags and placed in cold storage for overwintering at -4 °C. In spring, as soon as the soil thaws, they can be taken outside and planted in a permanent forest site.

Production process

Lifting from a field ▸

Moisture control



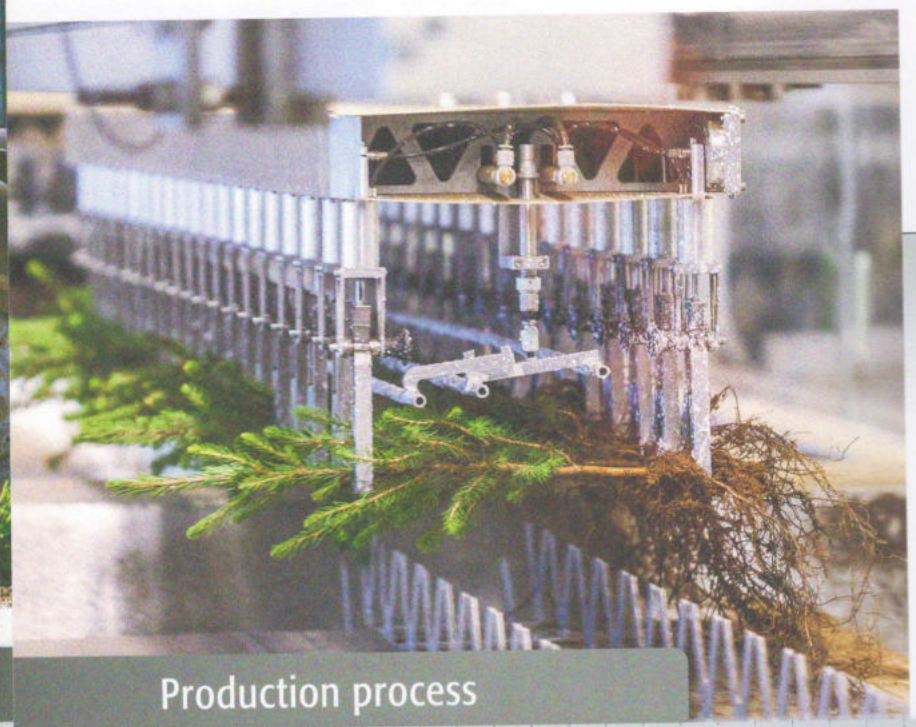
Sorting

Treatment against weevil damage

Treatment of plants

To protect conifer tree plants against damage from large pine weevil (*Hylobius abiet*), plant protection agents and two alternative protection methods are used:

- Treatment with vax – in Podiņi and Strenči tree nurseries.
- Treatment with *Conniflex* (mixture of sand and glue) in Mazsili tree nursery.



ISO 9001
BUREAU VERITAS
Certification

New protection methods, for example *Woodcoat*, are also tested in tree nurseries each year.

Production process

Treatment with wax ▸

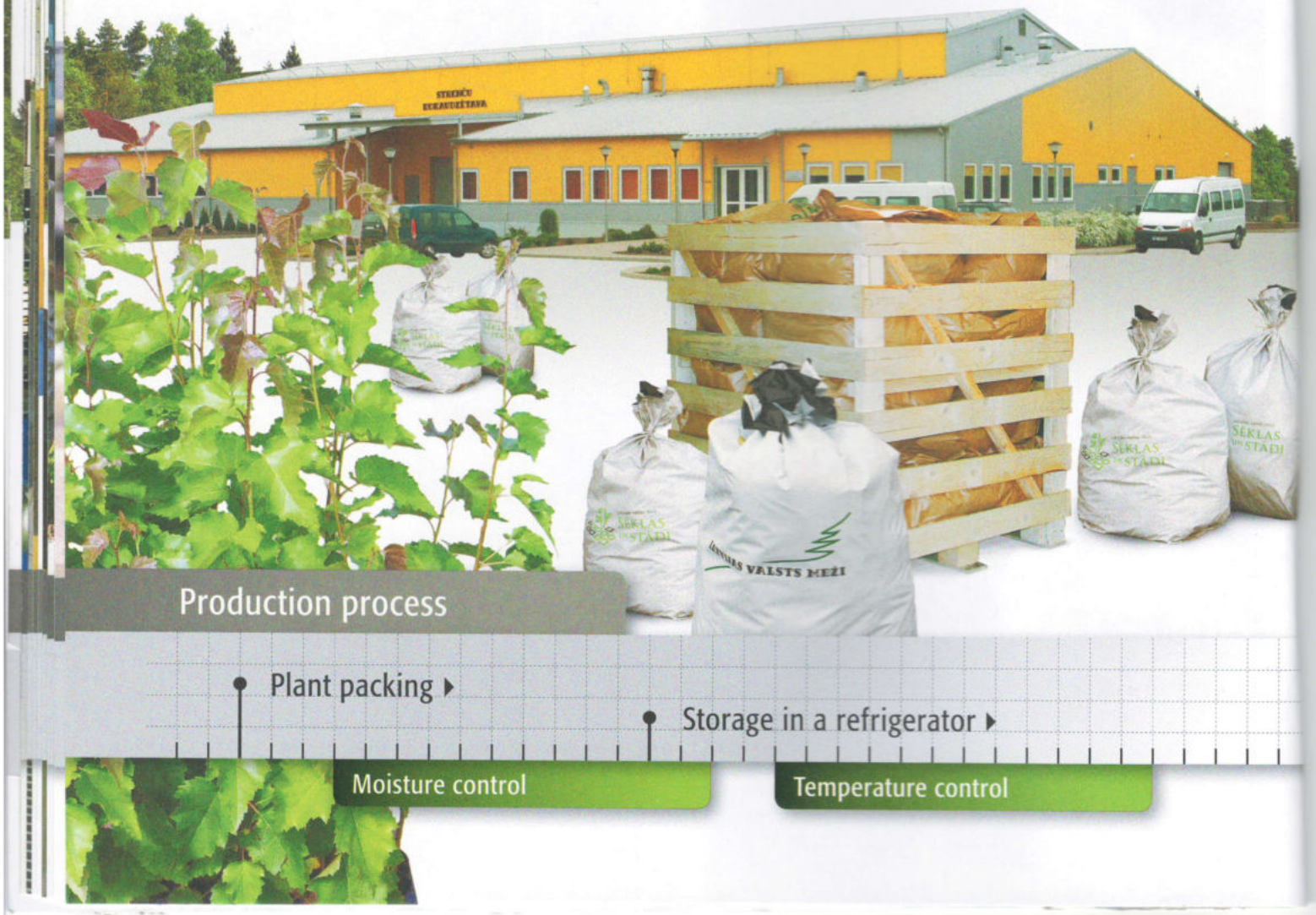
Treatment with mixture of sand and glue ▸

Treatment against pine weevil


Plant protection agents
Sales

Commendable practices for ensuring the growth of a new forest:

- Region of origin of the planting stock is of great importance. When ordering bareroots with improved root system from a nursery, inquire whether the stock offered is of the appropriate origin.
- When ordering bareroots with improved root system from a nursery, inquire about which of the offered stock is suitable for your needs.
- In case the bareroots were kept for more than two days after delivery from a nursery, put them into water for 12 hours to let the plants absorb water. It will definitely pay off!



Production process

Plant packing ▸

Storage in a refrigerator ▸

Moisture control

Temperature control

- When planting, dig a sufficiently large hole to contain the roots (including fibrous roots) without bending them. Make sure that the tree stem is standing upright, and carefully tread down the soil around it.
- Collect boxes after planting – they don't belong in the forest!

Transportation to planting site ▸

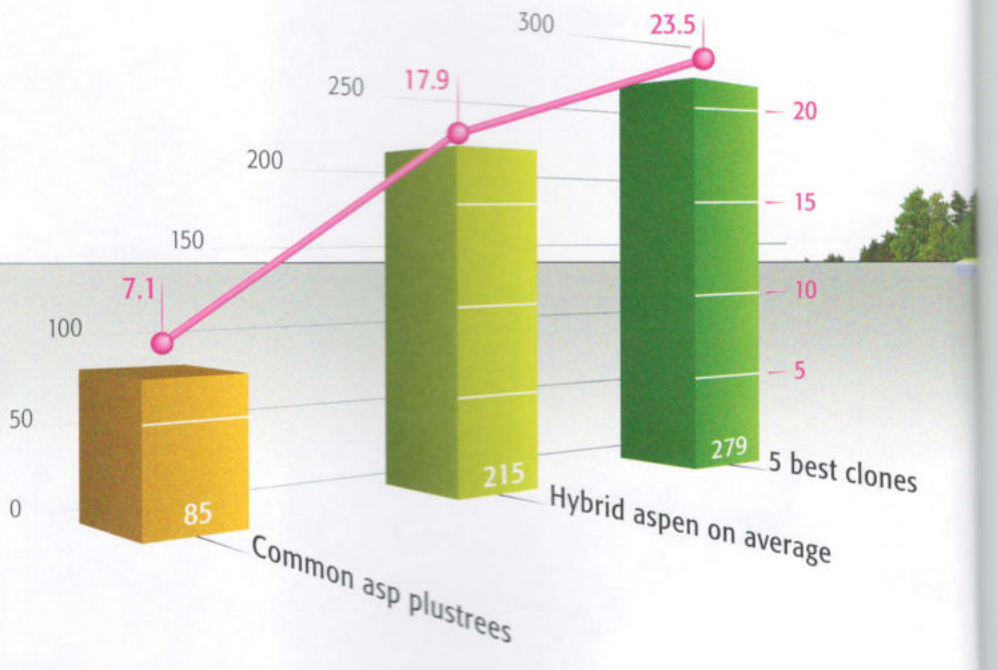
Agrotechnical tending

Planting ▸

Control of wildlife and pest damage

Hybrid quick-growing aspen

A hybrid quick-growing aspen that is an interspecies hybrid of common aspen (*Populus tremula*) and American aspen (*Populus tremuloides*) is recognized as a perspective in the field of renewable energy crops. Once planted, three rotations of trees can be harvested (the second and third rotations are coppice growth). Positive aspect includes the variety of possible uses – not only for wood fuel, but also for pulpwood and sawn timber.



Production process

Preparation of growth medium ▸

Cultivation in laboratory conditions ▸

20

Temperature control

Cultivation in a greenhouse ▸

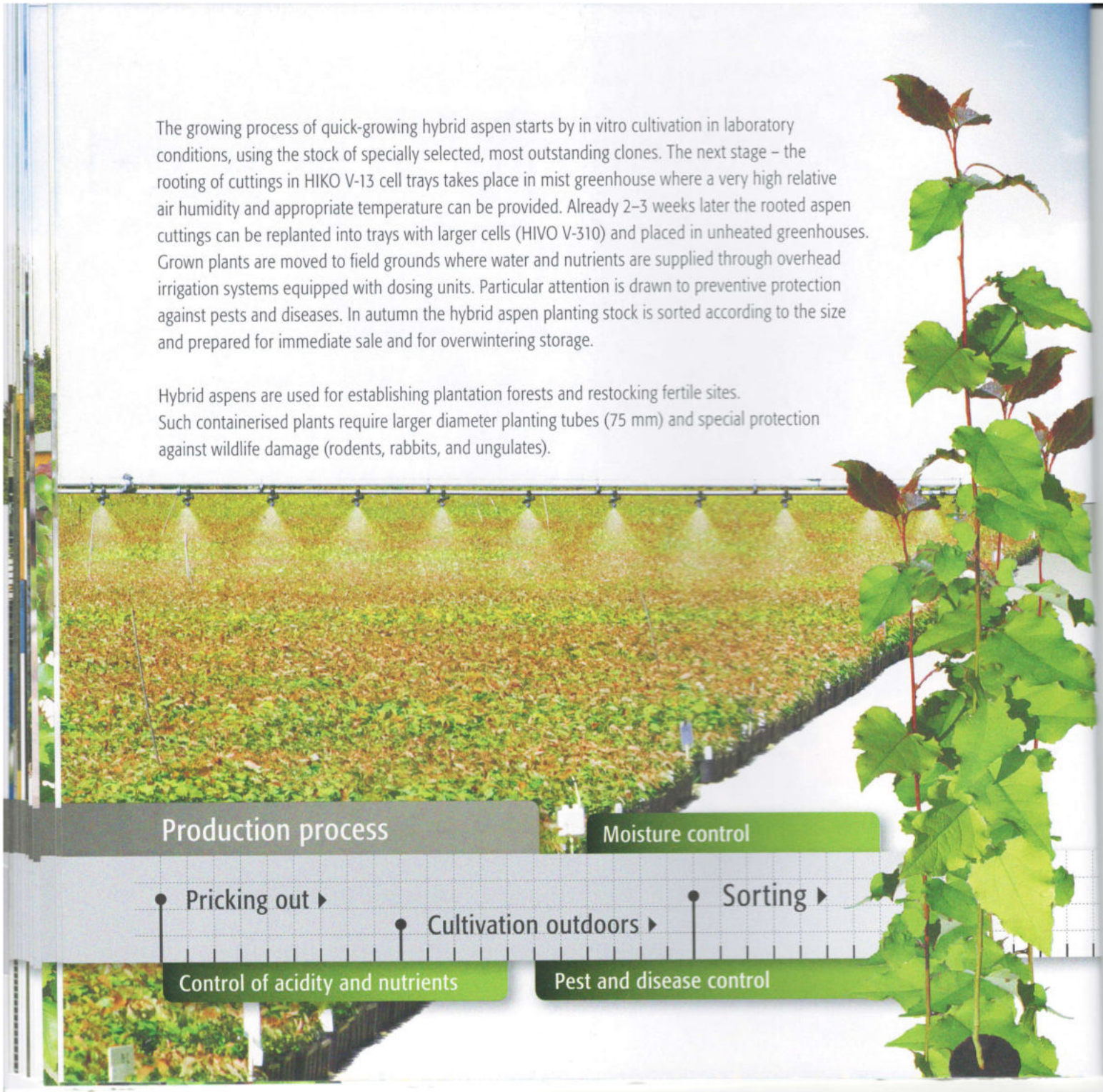
Full capacity watering!

Transportation to a field ▸

Control of acidity and nutrients

The growing process of quick-growing hybrid aspen starts by in vitro cultivation in laboratory conditions, using the stock of specially selected, most outstanding clones. The next stage – the rooting of cuttings in HIKO V-13 cell trays takes place in mist greenhouse where a very high relative air humidity and appropriate temperature can be provided. Already 2–3 weeks later the rooted aspen cuttings can be replanted into trays with larger cells (HIVO V-310) and placed in unheated greenhouses. Grown plants are moved to field grounds where water and nutrients are supplied through overhead irrigation systems equipped with dosing units. Particular attention is drawn to preventive protection against pests and diseases. In autumn the hybrid aspen planting stock is sorted according to the size and prepared for immediate sale and for overwintering storage.

Hybrid aspens are used for establishing plantation forests and restocking fertile sites.
Such containerised plants require larger diameter planting tubes (75 mm) and special protection against wildlife damage (rodents, rabbits, and ungulates).




Agrotechnical tending
Transportation to planting site
Planting
Plant protection

Ornamentals

People will always have an eye for anything unusual in a garden or forest –
that's why ornamental plants help creating an environment that is appealing to us.

By using the Kalsnava Arboretum's wide selection of frost-hardy trees and shrubs, "LVM Seeds and Plants" specialises in cultivating ornamental plants that are also suitable for the local conditions. Most of the stock is propagated by using cuttings and grafting, and the plants are cultivated in pots. A special machine that prevents plant damage is used for potting the stock.

Production process

- Substrate mixing and filling
- Filling and planting
- Transportation to a greenhouse
- Rooting the cuttings
- Grafting

Three thorn-free species of Maule's quinces (*Chaenomeles japonica*) 'Darius', 'Rasa', and 'Rondo' are propagated in the Kalsnava arobrteum for the commercial gardens of Latvia.

We offer a wide selection of Tunberg's barberry species for ensuring the colourfulness of gardens during all seasons.

Each buyer will be pleasantly surprised by the offered variety of hydrangeas available in tree nurseries.

Most suitable for evergreen hedges in the climate of Latvia are western white cedars (*Arborvitae/Thuja occidentalis*) – we offer thujas of various heights, shapes, and needle colour tones.

Different plant rarities are available for collectors.

Pest and disease control

Full capacity watering!

Cultivation in greenhouse ▸

Control of acidity and nutrients

Wide selection of decorative trees and shrubs and the consultations of experts are available in all nine "LVM Seeds and Plants" nurseries in different regions of Latvia and also in the Daugavpils and Salaspils sales outlets. We offer ornamental deciduous trees and shrubs (a variety of maples, rowan trees, lilacs, magnolias, park roses, barberries, prairieweeds (*Potentilla fruticosa*), meadowsweets, etc.) and conifers. Kalsnava Nursery is notable for a wide array of grafted conifers suitable to the growing conditions of Latvia – low junipers of various tones (green, yellowish, silver) growing in thick clumps, thujas of different colours and heights, rare species of spruce, fir, and pine with interesting shapes, branching habits or colour, which, of course, is not inherited in seedlings.

A special event for plant growers and buyers is the annual "Parade of Latvian Plants" (Latvijas Stādu parāde) in which the "LVM Seeds and Plants" always takes part.

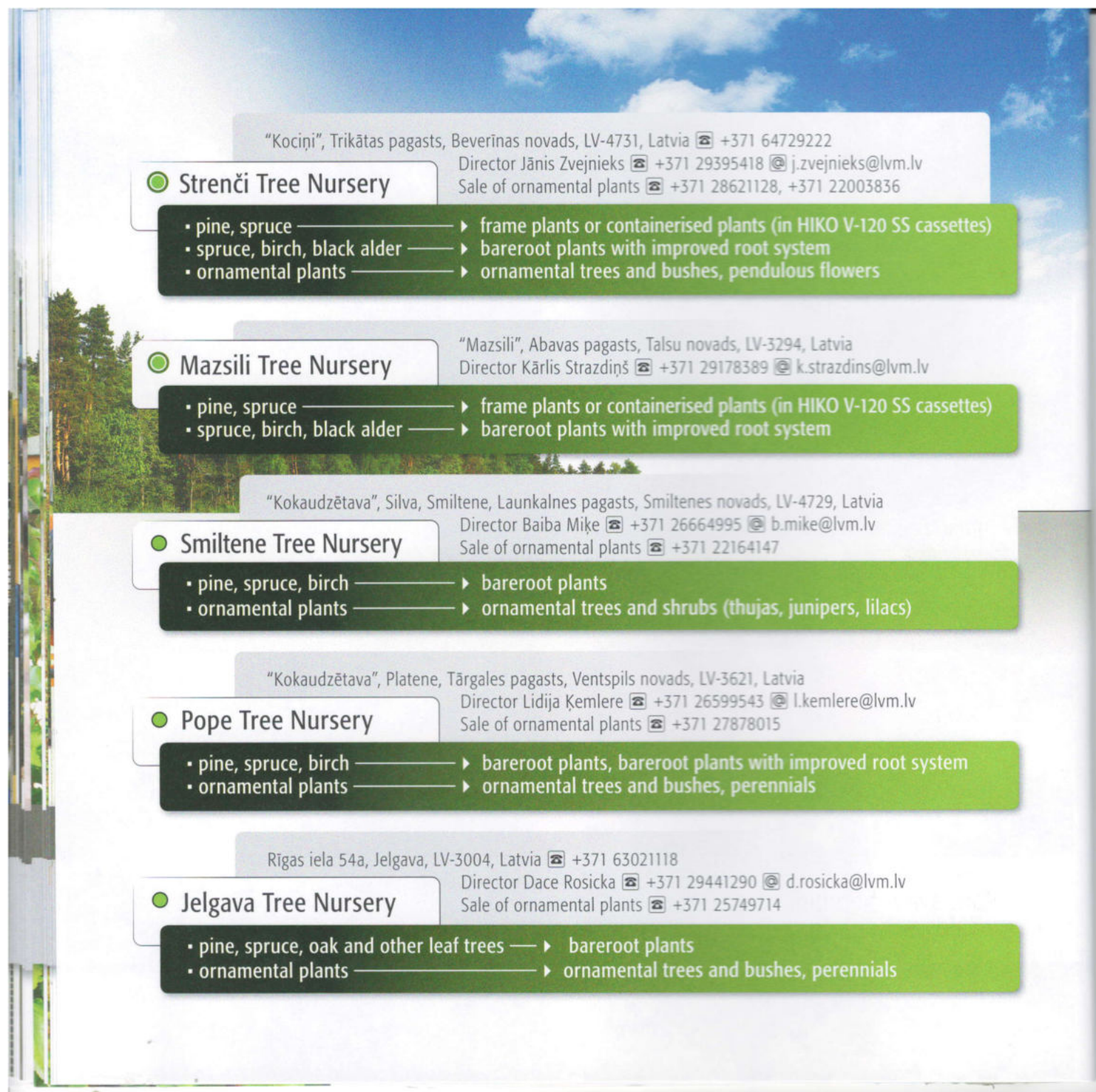
Production process

Replanting to pots ▸ Transportation to a field ▸ Cultivation outdoors ▸

Moisture control

Temperature control


Sales



Strenči Tree Nursery

"Kociņi", Trikātas pagasts, Beverīnas novads, LV-4731, Latvia ☎ +371 64729222
Director Jānis Zvejnieks ☎ +371 29395418 @ j.zvejnieks@lvm.lv
Sale of ornamental plants ☎ +371 28621128, +371 22003836

- pine, spruce → frame plants or containerised plants (in HIKO V-120 SS cassettes)
- spruce, birch, black alder → bareroot plants with improved root system
- ornamental plants → ornamental trees and bushes, pendulous flowers

Mazsili Tree Nursery

"Mazsili", Abavas pagasts, Talsu novads, LV-3294, Latvia
Director Kārlis Strazdiņš ☎ +371 29178389 @ k.strazdins@lvm.lv

- pine, spruce → frame plants or containerised plants (in HIKO V-120 SS cassettes)
- spruce, birch, black alder → bareroot plants with improved root system

Smiltene Tree Nursery

"Kokaudzētava", Silva, Smiltene, Launkalnes pagasts, Smiltenes novads, LV-4729, Latvia
Director Baiba Miķe ☎ +371 26664995 @ b.mike@lvm.lv
Sale of ornamental plants ☎ +371 22164147

- pine, spruce, birch → bareroot plants
- ornamental plants → ornamental trees and shrubs (thujas, junipers, lilacs)

Pope Tree Nursery

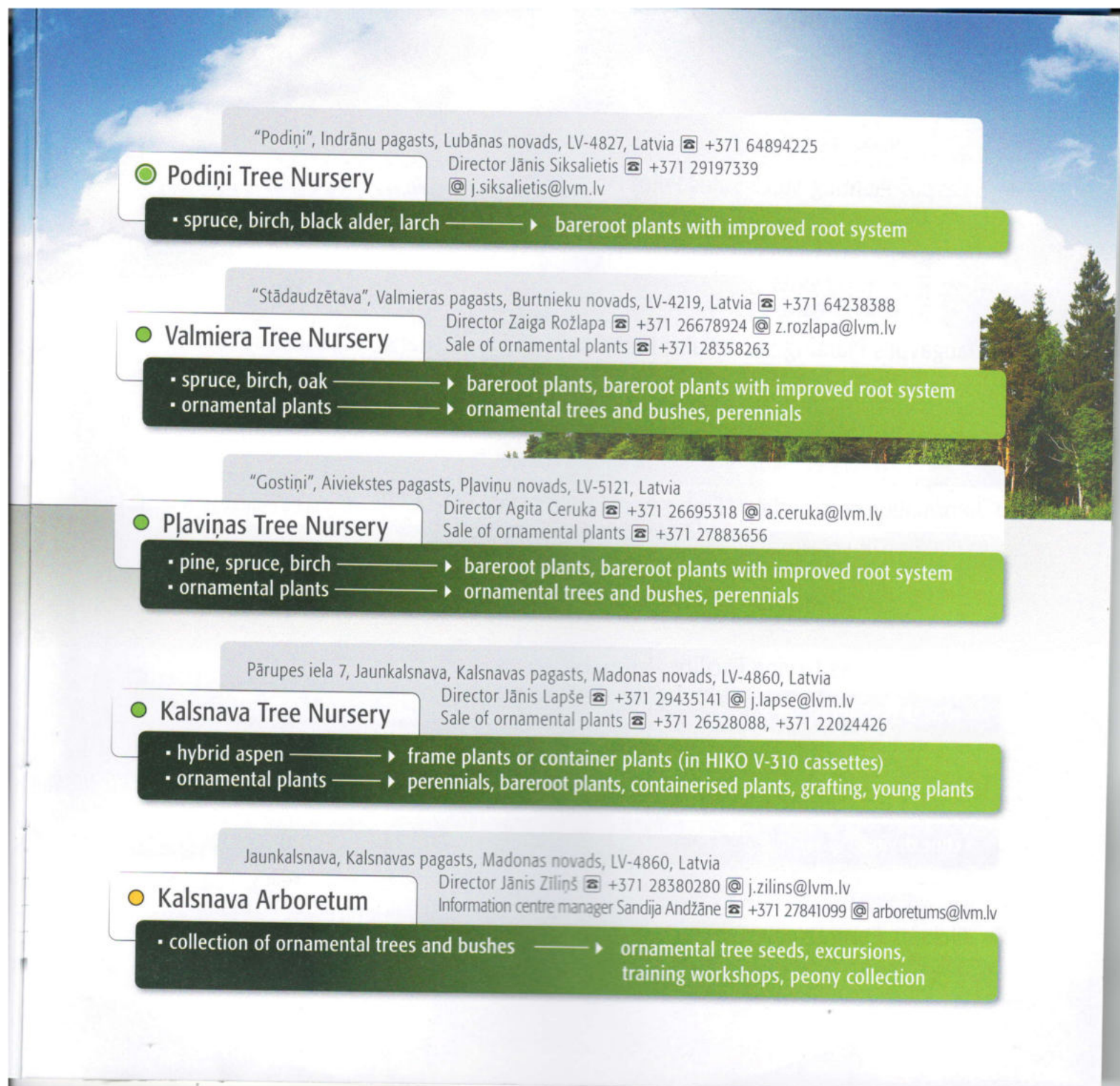
"Kokaudzētava", Platene, Tārgales pagasts, Ventspils novads, LV-3621, Latvia
Director Lidija Ķemlere ☎ +371 26599543 @ l.kemlere@lvm.lv
Sale of ornamental plants ☎ +371 27878015

- pine, spruce, birch → bareroot plants, bareroot plants with improved root system
- ornamental plants → ornamental trees and bushes, perennials

Jelgava Tree Nursery

Rīgas iela 54a, Jelgava, LV-3004, Latvia ☎ +371 63021118
Director Dace Rosicka ☎ +371 29441290 @ d.rosicka@lvm.lv
Sale of ornamental plants ☎ +371 25749714

- pine, spruce, oak and other leaf trees → bareroot plants
- ornamental plants → ornamental trees and bushes, perennials



"Podiņi", Indrānu pagasts, Lubānas novads, LV-4827, Latvia ☎ +371 64894225

Podiņi Tree Nursery

Director Jānis Siksalietis ☎ +371 29197339
@ j.siksalietis@lvm.lv

- spruce, birch, black alder, larch → bareroot plants with improved root system

"Stādaudzētava", Valmieras pagasts, Burtnieku novads, LV-4219, Latvia ☎ +371 64238388

Valmiera Tree Nursery

Director Zaiga Rožlapa ☎ +371 26678924 @ z.rozlapa@lvm.lv
Sale of ornamental plants ☎ +371 28358263

- spruce, birch, oak → bareroot plants, bareroot plants with improved root system
- ornamental plants → ornamental trees and bushes, perennials

"Gostiņi", Aiviekstes pagasts, Pļaviņu novads, LV-5121, Latvia

Pļaviņas Tree Nursery

Director Agita Ceruka ☎ +371 26695318 @ a.ceruka@lvm.lv
Sale of ornamental plants ☎ +371 27883656

- pine, spruce, birch → bareroot plants, bareroot plants with improved root system
- ornamental plants → ornamental trees and bushes, perennials

Pārupes iela 7, Jaunkalsnava, Kalsnavas pagasts, Madonas novads, LV-4860, Latvia

Kalsnava Tree Nursery

Director Jānis Lapše ☎ +371 29435141 @ j.lapse@lvm.lv
Sale of ornamental plants ☎ +371 26528088, +371 22024426

- hybrid aspen → frame plants or container plants (in HIKO V-310 cassettes)
- ornamental plants → perennials, bareroot plants, containerised plants, grafting, young plants

Jaunkalsnava, Kalsnavas pagasts, Madonas novads, LV-4860, Latvia

Kalsnava Arboretum

Director Jānis Ziliņš ☎ +371 28380280 @ j.zilins@lvm.lv
Information centre manager Sandija Andžāne ☎ +371 27841099 @ arboretums@lvm.lv

- collection of ornamental trees and bushes → ornamental tree seeds, excursions, training workshops, peony collection

Miera iela 1, Salaspils, Salaspils novads, LV-2169, Latvia

Salaspils Planting Stock Sales Point

Sales manager Silvija Apšiniece
☎ +371 29354440 @ s.apsiniece@lvm.lv

- ornamental plants → ornamental trees and bushes, perennials, summer flowers

Vizbuļu iela 4b, Daugavpils, LV-5401, Latvia

Daugavpils Planting Stock Sales Point

Sales manager Renāte Magazniece
☎ +371 28354429 @ r.magazniece@lvm.lv

- ornamental plants → ornamental trees and bushes, perennials, summer flowers

Vaiņodes iela 1, Rīga, LV-1004, Latvia ☎ +371 23280001, Director Dace Martinsone

Information center–shop "Embassy of Latvia's State Forests"

☎ +371 29288377
@ d.martinsone@lvm.lv

- ornamental plants, thematic events and typical Latvian gifts

Pārupes iela 4, Jaunkalsnava, Kalsnavas pagasts, Madonas novads, LV-4860, Latvia

Kalsnava Cone Drying Facility

Director Jānis Auziņš ☎ +371 26599755
@ j.auzins@lvm.lv

- cone drying, forest seeds

Renda Cone Drying Facility

Renda, Rendas pagasts, Kuldīgas novads, LV-3319, Latvia ☎ +371 63354407
Director Dainis Ābols ☎ +371 29197397 @ d.abols@lvm.lv

- cone drying

Vijciems Cone Drying Facility

Mežmuiža, Vijciema pagasts, Valkas novads, LV-4733, Latvia
Director Ivars Palejs ☎ 2+371 6478620 @ i.palejs@lvm.lv

- cone drying, excursions, historical museum

LVM Seeds and Plants

Pārupes iela 4, Jaunkalsnava
Kalsnavas pagasts, Madonas novads, LV-4860, Latvia ☎ +371 64826568

We sell forest and ornamental plant materials in 9 Latvian nurseries and 2 Planting stock sales points. We conclude plant material cultivation agreements

Director – Guntis Grandāns
☎ +371 29184977 @ g.grandans@lvm.lv

Executive Director for Sales – Irēna Aleksejuka
☎ +371 26566165 @ i.aleksejuka@lvm.lv

Executive Director for Production – Laima Zvejniece
☎ +371 29476556 @ l.zvejniece@lvm.lv

Latvijas valsts meži
SĒKLAS UN STĀDI

Joint Stock Company "Latvijas valsts meži"
Vaiņodes iela 1, Rīga, LV-1004, Latvia

"LVM Seeds and Plants"
Pārupes iela 4, Jaunkalsnava, Kalsnavas pagasts, Madonas novads, LV-4860, Latvia
☎ +371 64826568
www.lvm.lv

Each tree, even the biggest one, has grown from a tiny seed.
And the lifetime mission of man is to love and care...
Then add the energy and determination of a sprouting seed to this positive thought and plant a tree!