

ESTABLISHMENT OF Highbush Blueberry and Large Cranberry Plantations in Degraded Peatlands



CULTIVATION of highbush blueberries *Vaccinium corymbosum* and large cranberries *Vaccinium macrocarpon* are among the most promising after-use types in peatlands damaged by peat extraction. It is also the most economically advantageous after-use solution if compared to other after-use types used in Latvia.

Both highbush blueberries and large cranberries grow well in peat, as there are suitable moisture, acidity and other conditions. The cultivation of these berries are economically justified, as the climate conditions of Latvia are favourable. In Europe, the production of these berries is low, largely due to unsuitable climatic conditions. However, the market and the demand is high.

AIM is to verify in practice the suitability, possibilities, advantages and disadvantages of berry planting as type of re-use of damaged peatlands after peat extraction in Latvia.



MATERIALS AND METHODS

TECHNICAL DESIGNS

- Design sketches are prepared prior to establishment of plantations and earth works
- Approvals received from respective authorities

LAND PREPARATION

- Removal of vegetation and stumps
- Levelling of the land with the adjacent fields and evening out of the surface
- Cleaning of ditches

FERTILISATION

- Application of mineral fertilisers to the prepared plantation fields
- Dosages are selected according to expert recommendations

PLANTING

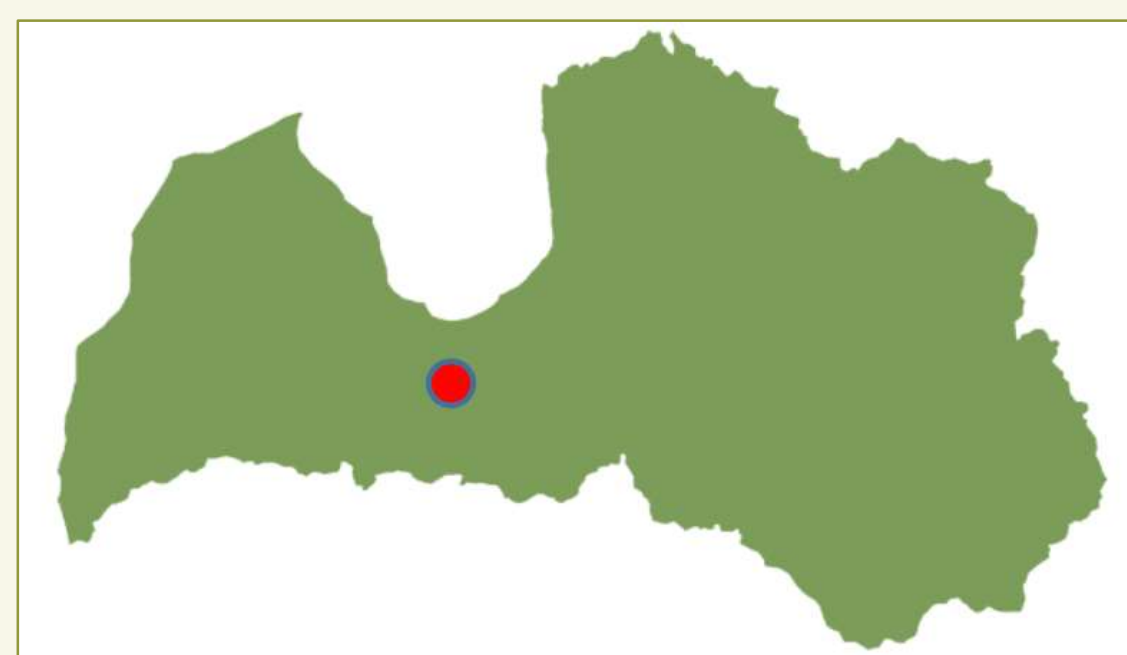
- Furrows are created and blueberries planted in the elevations
- Field is processed with peat miller and cranberry vines evenly distributed



Highbush blueberry plantation in Kaigu Mire demo site

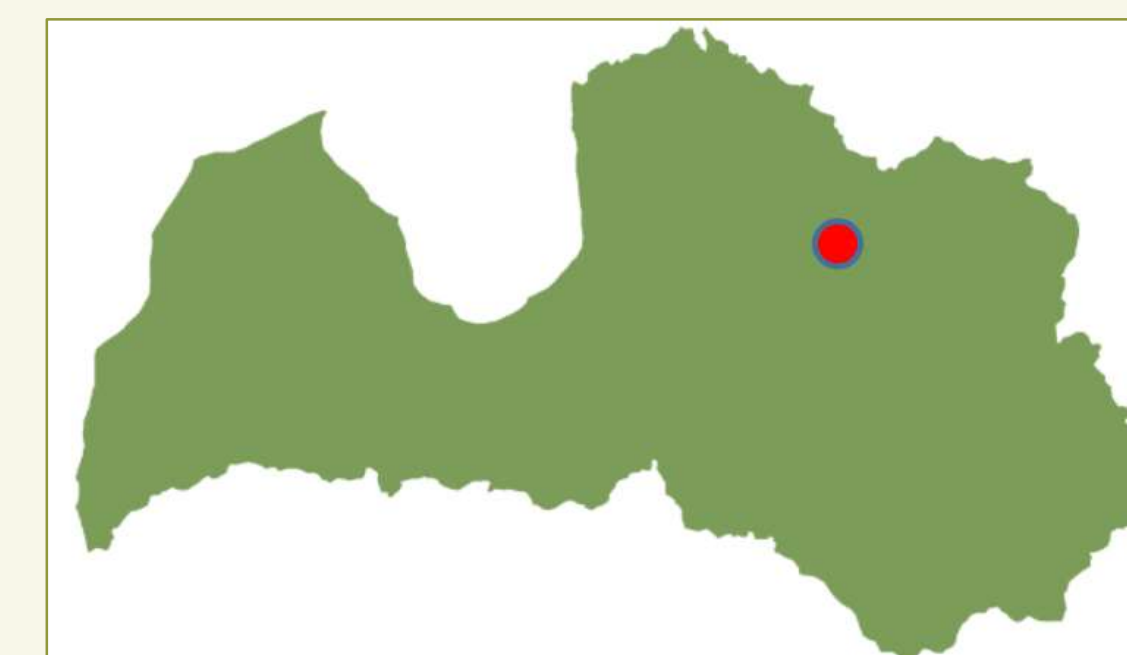
Highbush Blueberry Plantations

As a demonstration project within LIFE Restore the highbush blueberry plantations were established in the eastern side of Kaigu Mire, in Līvberze rural territory of Jelgava municipality, in a limited company-owned real estate.



Large Cranberry Plantations

Large cranberry plantations were established in Kaudziši Mire within Ranka rural territory of Gulbene municipality, in an area where peat extraction has been recently completed but is still ongoing in other part of the same land property.



SITE CHARACTERISTICS

Marginal fields of the peatland, used for placing the extracted peat and tree residues, initially considered unsuitable for berry planting.

- Peat type sphagnum peat
- Decomp. degree 14% – 25%
- Layer thickness > 0.5 m
- pH value 2.7–5.0
- Groundwater level 0.35–0.55 m
- Irrigation precipitation water accumulated in pits at the field edges
- Fertilisation superphosphate & potassium magnesium oxide, 100 kg/ha each

PLANTING June 12th -16th, 2017

Furrows were created with elevation of 0.5m, width 0.7m and distance 3m, and plants were planted manually in the elevations with 1–1.2m distance.

- Planting material origin – Poland, variety – ‘Blue Blue’, ‘Reka’, amount – 9777 plants
- Total area planted 4.2 ha, 3 plantation fields

- Area – 1.2 ha
- Length – 170 m
- Width – 70 m
- Variety – ‘Blue Blue’
- Seedlings – 3275

- Area – 1.8 ha
- Length – 200 m
- Width – 108 m
- Variety – ‘Reka’
- Seedlings – 4002

- Area – 1.2 ha
- Length – 263 m
- Width – 44 m
- Variety – ‘Reka’
- Seedlings – 2500

SITE CHARACTERISTICS

Territory has not been exploited for c.a. five years after the peat extraction and had started to overgrow with trees and shrubs.

- Peat type raised bog cotton grass-sphagnum (top), pine-cotton grass
- Decomp. degree 22% – 46%
- Layer thickness 0.1 – 0.5 m
- pH value 2.7–3.3
- Groundwater level 0.35–0.5 m
- Irrigation Watering system installed by the landowner
- Fertilisation superphosphate & potassium magnesium oxide, 100kg/ha each

PLANTING May 18th – 25th, 2018

Peat was cultivated to a depth of 0.4 m with peat miller. Then ~10 cm long large cranberry vines were evenly distributed and field processed with soil cultivator at a depth of 3 cm.

- Planting material: origin - adjacent large cranberry plantations and growers; variety - ‘Steevens’, ‘Bergman’; amount planted - 2 t/ha (6.8 t in total)
- Total area planted 3.4 ha, 7 plantation fields



RESULTS AND CONCLUSIONS

Highbush blueberries can be harvested in the 3rd or 4th year after planting. However, none of the plants have withered away; they grow larger and have new leaves every year. Large cranberries can be harvested in the 4th year after planting, therefore it is not yet possible to assess the quality of results. However, young seedlings already produce new leaves, indicative of the development of strong roots. Thus, it can be concluded that the planting of highbush blueberries and large cranberries for the re-use of extracted peatlands was successful.



Growing berries is the most profitable re-use type of extracted peatlands, as found by LIFE REstore project. If plantations are properly managed, seedlings are well cared for and berries are harvested, the investments may pay off in 8 to 13 years.

More info: restore.daba.gov.lv



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