



Early settlers thought the cranberry blossom resembled the head of a crane and called them «crane berries»

# CULTIVATION OF LARGE CRANBERRY IN PEAT BOG IN LATVIA

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Cranberry in peat bog, in Latvia

The large cranberry (*Vaccinium macrocarpon* Ait.) is evergreen *Ericaceae* plant. The berries of *Vaccinium macrocarpon* contain many vitamins and minerals (C, B1, B2, B3, Fe, Na, K, Ca, etc.) and other biologically active substances (antocyanins, flavonoids, pectin, benzoic acid, etc.). The large cranberry has been cultivated since 1816 in North America, but in Latvia first plantations started to plant at the end of the 1990s and now producing cranberry plantations exceed 170 ha in Latvia. The climate is suitable for growing of large cranberry in North America and Latvia as well, but growing conditions are different and it affect the berry quality. The optimal soil for large cranberry is acid - pH KCl 4–5 (can grow also at pH 3,9–5,9).

**Aim.** To compare growing conditions of large cranberry in North America and Latvia.

## North America (USA, Canada )



Planting with rooted cuttings  
www.cranberryvine.com



Cranberries are harvested in water because it makes picking easier. Cranberry vines form a dense ground cover. Flooding floats the cranberries out of the tangled vines, making them easier to pick.  
www.cranberry.ca



Cranberry plantation  
www.cranberry.ca



Marsh  
www.cranberryvine.com



Harvest - rounding up the berries  
www.cranberryvine.com



Harvest  
www.cranberryvine.com

- Artificial beds – “bogs” - use any type of mineral soil as basic (sandy loam, loamy sand or clay) and 20-30 cm organic soil layer (peat, muck, renovation sediments, yard compost, decomposed wood waste).
- High developed cultivation technologies, but expenses are very high
- The large number of pathogens makes a problem to understand the biology of the disease. Fruit rot is the most serious yield-limiting disease problem and is associated with more than 15 causal agents, but more than 150 pathogens are known.
- More than 80 species of weeds have been found in plantations, many herbicides are registered and used for weed control.
- Over 20 insects cause injury to the cranberry and three are direct fruit pests.
- More than 40 pesticides are registered in North America.
- In North America cranberries cannot be grown without pesticides.
- In North America the growers use wet-harvesting method - the field is flowed at a height of 40-50 cm and hold a water for many days covering the cranberry vines. The field is flowed at a height of 40-50 cm and hold a water for many days, covered the cranberry vines. The special combine plucked the berries and then berries come to the surface of the water. Then by a conveyor, the berries are bundled into trailers and transported.

### Wet harvesting

- + harvesting process is faster
- high labor costs and difficult technology
- poor berry quality
- high incidence of storage rot, berries are not suitable for store
- harvested berries are necessary to freeze or process



Fresh berry harvest



Harvest process



Harvest workers

Wisconsin cranberries, www.wiscran.org

## Latvia



Mechanical vine pruning and removing



Planting - use cranberry vines



New plantation in peat bog



Weeding



Dry harvesting in Latvia



- Use areas in raised bogs (peat moss) after peat extraction, if a peat layer is at least 50-60 cm after peat cutting.
- In Latvia is needed studies to improve cultivation technologies
- Fruit rot is not very common on field in Latvia. The serious yield losses are occurred after more than 3 months in storage. 9 pathogens are found in cranberry plantations in Latvia, but only two of them can cause serious damages – upright dieback and fruit rot at harvest and storage. Only 3 fungicides are registered.
- Weeds are removed by hand from the fields in Latvia, no herbicides are registered.
- Only few species of insect are found in cranberry plantations. Only under optimal conditions, pests can cause serious damages, no insecticides are registered in Latvia.
- In Latvia only few farmers use fungicides (1-2 applications per season), but is needed studies to find a better time for application of fungicides. The best time of using fungicides to reduce the diseases is still unclear.
- Latvian growers use dry-harvesting method, berries are picked by hands or use combines



Picking berries by hands



### Dry harvesting

- + less undamaged berries
- + longer storage period (3-4 months)
- slower harvesting process



Mulching cranberries with sawdust



Large cranberry plantation in Latvia



Large cranberries

Photo: Dace Silina, Līga Vilka

## Conclusions:

- The climate and growing conditions are suitable for large cranberry in Latvia and berries are healthier than grown in North America.
- Latvia is the only country in the European Union where large cranberry is cultivated, this would be good export opportunities.
- In Latvia is needed studies to improve cultivation technologies of large cranberry to increase the yields as North America.