

Studies on Cranberry Cultivation of Historical Perspective

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The scientific research on the European or Latvian local cranberries (*Vaccinium oxycoccus* L.) was started in the 1970s by the Department of Horticulture of the Faculty of Agriculture, Latvia University of Agriculture. The studies show that the advantage of these cranberries lies in the growing season, since it is shorter. Besides, they require a lower sum of the effective temperatures than the large berry cranberries. The berries are better protected from autumn frosts, and the berry texture is gentler. It is impossible to apply mechanisation in harvesting this species of cranberries.

Productive wild clones were found not only in the bogs of Latvia but also in Karelia (Russia) and Estonia using both physical and chemical mutagenesis. Consequently 172 cranberry genotypes were covered by the study.

The research was carried out applying woody and soft wood cuttings, investigating planting density, substrates, morphological, and biological characteristics of the plant and other issues.

The main task of research is improving of less productive areas of cranberry bogs with high-value varieties as well as on recovering with the cranberry degraded bog areas. It was decided to continue selection on cranberry clone test conditions in order to breed crops, and to test their suitability in re-cultivated bogs. It was also decided to develop elaborated technologies for the propagation and cultivation of the specific genotype.

The most valuable clones were chosen in the selection work. Having analysed the organic harvest of the best cranberry genotypes, it can be concluded that the greatest number of inflorescence - 800 m⁻², the largest flower number 1420 m⁻², and berry mass were calibrated with the genotype V-63583 (Gronskis and Liepniece, 2004.)

The most valuable genotype seeds were sown in the re-cultivated cranberry bogs areas covering 40.8 ha of land and selected in different places of Latvia. The seed sowing was done by plane. Studying the re-cultivated cranberry areas it was found that cranberry growing was very uneven ranging between 10% and 30%. In some places it was associated with deep groundwater levels, sulphur spring effluence and open places in the array as well they were damaged by frost.

The American large cranberry (*Vaccinium macrocarpon* Ait.) is relatively new cultures in Latvia. The first commercial cranberry plantations were established in 1985. Nowadays, the area of large cranberries covers approximately 100 ha and takes the third place in the world. The most popular varieties of cranberries are 'Stevens', 'Bergman', 'Ben Lear' and others, while 'Franklin', 'Pilgrim', 'Hoves' and 'Lemynion' are less popular varieties.

Due to the high costs involved to establish cranberry fields, most (65%) of the farms are small - with 0.1-5.0 ha of land, 21% of farms – with 5.1-10. 7% with 10.1-15.0, and 7% - with 15.1- 20.0 ha of land.

Three planting technologies are used for large cranberries in Latvia. First - in the prepared field, cranberry tendrils are evenly spread on the soil surface and imbedded in peat with a disc harrow. Second - imbedding tendrils by power harrow. The speed of the power harrow should be reduced not to damage the plants. Plants should not be imbedded too deep or too shallow. Third – manual planting using a planting stick. The drawback - a labour consuming process, yet it can be used for planting a small area.

Weed control as an essential part of cranberry management was done in two ways - manually and by using glyphosate pesticides as a replant treatment by weed wipers on bicycle wheels.

Sand, used as a mulching material, was spread with a specially constructed spreader, though there were problems with sand pH and weeds. Therefore, sanding is not popular. The breeders use high moss peat, while some - sawdust or sawdust mixed with peat especially those without a sprinkler irrigation system.

Up to 10% of the harvest was lost in autumn frosts on the farms of the Western area of Latvia from the analysed varieties of late cranberries in the autumn frost.