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P-2

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Biometric variability of European cranberry (Oxycoccus palustris Pers.)

Oxycoccus palustris Pers. is an important edible and medicinal plant from the Ericaceae family. It has a wide, circumboreal range of occurrence in Europe, Asia and North America, growing on different types of Sphagnum bogs. This species is characterized by the large variability in respect of the size, shape and color of fruits as well as the size of leaves. Plants with fine leaves and fruits belong to the subspecies of O. palustris ssp. microphyllus (Lange) Löve et Löve, whereas large-leaved and large-fruited forms are sometimes included to the variety of O. palustris ssp. palustris var. macrophyllus Gug.

The aim of the present study was to determine the variability of some biometric features of European cranberry in the intra- and inter-population level. The field investigations were carried out on four peatlands located in Wielkopolska (Greater Poland). On each stand, five study areas of m² were established and then 30 randomly selected cranberry fruits and 9 shoots of this species were collected from each plot. Weight of fruits, number of seeds per fruit as well as length and width of leaves were determined.

O. palustris occupied different types of phytocoenoses from the Oxycocco-Sphagnetea and Scheuchzerio-Caricetea fuscae classes. Most often, it was documented in patches of Andromedo-Sphagnetum magellanici. Regardless of the size, type and phytosociological differentiation of these peatlands, the high level of intra-population variability of the cranberry biometric traits was noted. In addition, investigated features of O. palustris showed statistically significant differences between peat bogs. The smallest mean weight of fruits (0.22 g) and seed number per fruit (3.3) as well as the smallest mean size of leaves (length x width: 34.4 mm²) were determined in the case of population growing on poor oligotrophic peatland. On the other hand, cranberry developed larger leaves (to 47.5 mm², on average), fruits (to 0.33 g) and more seeds (to 8.8 per fruit) on stands with a higher share of transitional-bog communities.