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GENETIC DIVERSITY IN SOME *OXYTROPIS* SPECIES IN THE NORTH-EAST ASIA**A.B. Kholina, O.V. Nakonechnaya***Institute of Biology and Soil Science of Far Eastern Branch of Russian Academy of Sciences,
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Oxytropis is a large and diverse genus comprising about 300 species, among them a lot of rare, endemic and medicinal plants are in danger of extinction due to natural cataclysms and human pressure. To conserve of genetic resources of these species, it is necessary to assess its genetic diversity. We explored allozyme variation in eight *Oxytropis* species from North-East Asia - sect. Arctobia: *O. kamtchatica*, *O. revoluta*, sect. Orobia: *O. ochotensis*, *O. erecta*, *O. retusa*, *O. hidakamontana*, *O. calcareorum*, sect. Baicalia: *O. chankaensis*. Electrophoretic analysis of the leaf tissue was carried out using 20 enzyme systems.

Usually high P and A values are characteristic of species with wide geographic range, while in rare species with restricted range parameters of genetic diversity are rather low. Low level of allozyme polymorphism in rare plants - *O. retusa*, an endemic species of the Kurils, and *O. hidakamontana*, restricted to the Hokkaido (Japan) and the southern Kurils (P = 14.3% for both species) reveals the typical connection between restricted status and genetic polymorphism. The low genetic polymorphism in these species studied may be connected with present population size and genetic drift. High levels of genetic variability were found in all the rest species (P from 38.5% to 61.9%). Among them the lowest values of polymorphism were estimated in two diploid species - *O. kamtschatica* and *O. revoluta*. It is known that sometimes plants with small fragmented range display relatively high polymorphism (Gitzendanner, Soltis, 2000). For this reason, the range size can be considered as important, but not an absolute indicator of the intraspecific diversity. In addition to the range size, a definite contribution to the variation level is made by the species biology and life strategies (Hamrick, Godt, 1989), among which the reproduction system plays an important role. However, it seems that in *Oxytropis* species studied the most important factor that prevents in the decrease of the polymorphism level and genetic depletion is the increased ploidy level. The species are a polyploid - tetra-, hexa- and octoploid. The high values of genetic variation agree with those expected for polyploids. Polyploids are generally characterized by the increased variation levels, the presence of a great number of polymorphic loci, the increased number of alleles per locus, and higher heterozygosity levels, compared to their diploid progenitors (Soltis, Soltis, 1995). The multiplicity of the enzymes, increased heterozygosity, and allelic diversity in polyploids result from polysomic type of inheritance. Polysomic genetic structure is characterized by substantial rigidity, since many loci for a long time exist in the heterozygous state. This is extremely important for the species existing in small isolated populations, where the effect of gene flow is compensated by "additional" heterozygosity. Thus, high variation level in these *Oxytropis* species can be explained by a number of reasons, among which the polyploid origin of the species, probably, plays the key role.