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The XXI International Grassland Congress / VIII International Rangeland Congress took place in Hohhot, China from June 29 through July 5, 2008.

Proceedings edited by Organizing Committee of 2008 IGC/IRC Conference

Published by Guangdong People's Publishing House

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## The results of analysis of *Allium* genus of Mongolia

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**Key words :** Chromosome, karyotype, population, polyploidy

**Introduction** There are a lot of factors influencing the evolution and heredity of live organisms. One of its branches is the field of karyology that studies the specifics of chromosome structure composition and form, is considered to be material basis for organism heredity and modification. Over thirty species of wild *Allium* that grows on the territory of Mongolia. In addition in fact that these are the constant members of the dry steppe plant community, they grow in high mountains, forest steppe zone, desert and deserted-steppe and Mongolian plateau. *Allium mongolicum* and *Allium polyrrhizum* that grow in Mongolian Gobi-desert zone are of a high nutritional quality and is considered to be one of the main plants of Mongolian grass lands.

**Materials and results** We studied Khubsugul, Bulgan and Biger populations. In Khubsugul and Bulgan population satellite chromosome is located at 6<sup>th</sup> st chromosome's short arm. SM chromosome is located at the third pair of chromosomes. But there is difference in the Gobi-Altai of Biger population karyotype.

We are the first to discovered B chromosome in *A. altaicum* in Mongolia. As a result of this, we see that there is a numeric change of SM chromosome, which in can that there is a polymorphism in the Biger population. But all three populations have a lot of similarities as well. All of them are of 2A karyotype, relative length of chromosome are close and have very clear satellite chromosome. Morphologically there are very similar, although the Biger population *A. altaicum* bulb is bigger than the other population. This is due to polymorphism in the Biger population.

Our comparison of karyotypes *A. altaicum* and *A. fistulosum* has revealed a high degree of similarity, indicating a close relationship. Therefore we can conclude that the cultivated species *A. fistulosum* originated from the natural species *A. altaicum*.

**Conclusion** We can conclude the following from our study:

Basic number of chromosomes increase: its diploids, tetraploids, pentaploids and hexaploids. There is a karyotype differentiation *A. bidentatum*, *A. amphibolum* and *A. mongolicum*. They all belong to 2B karyotype. We have studies several populations of *A. altaicum*. Namely, it is remarkable that in this country under the extremely diversified environmental conditions, specific karyotype patterns may appear in the more or less isolated populations of often low individual number, as a result of natural selection, genetic drift, geographical or ecological isolation. Factors causing and maintaining such karyotype variations or even polymorphism maybe in Mongolia the following physico-geographic conditions: The average 1580 m high above sea level; the cold continental climate; the highly diversified topographic forms and because of this very great microclimate differences within small distances; the ecological isolation in the great closed basins on the moving or semi-fixed sand-dunes, on the ridges and plateaux of inselbergs; the overlapping and mosaic pattern of vegetation zones; on the southern slopes the absence of vegetation characteristic of certain altitudes; in general, the increased fragility of the arid ecosystems.