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## **KazNU Geneticist, Leading Country Reader of Genetics in Kazakh and Known Wheat Breeder All in One**

Posted By [Zaure G. Aytasheva](#), 1 minute ago

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As we recently posted information on the Round Table (see our previous post before intellectual games article at <http://my.aspb.org/blogpost/1148317/al-Farabi-Kazakh-University-News>), it was inspired by 50 years of research and teaching activities of Prof. Kulziya Shulembayeva.

Upon graduating from high school in 1963 Kulziya K. Shulembayeva entered the School of Biology of a S.M. Kirov Kazakh State University.

As Prof. K.K. Shulembayeva says today the meeting with Kazakh SSR AS Corresponding Member, D.Sc. , Prof. Nadezhda L'vovna Udol'skaya was a turning point in her life. Prof. N.L. Udol'skaya invited Kulziya K. to her scientific research and imparted the skills of a professional breeder. Success in the chosen field, new ideas, her mentor's support and advice were instrumental in making an important decision to continue her research at the V.R. Williams Kazakh Institute of Agronomy and Plant Breeding (KIZ). Here Kulziya K. started working as a junior researcher in the department of wheat breeding. This period, clearly indicated the personal qualities of the young genetics as a future great scientist – an analytical mind, perseverance, dedication to work, ability to clearly and correctly set up an experiment, to work in a team, and most importantly, to see in the final term, an economically-significant result.

Getting acquainted and highly praising cytogenetic studies of an American wheat geneticist E.R. Sears, for the first time in Kazakhstan Shulembayeva under the guidance of Prof. N.L. Udol'skaya, started the production and analysis of aneuploid wheat resources. This work has identified Kulziya K. Shulembayeva scientific profile, defining research in the coming years. In 1971, upon enrolling in the graduate school, Kulziya K. Shulembayeva successfully presented her thesis on the topic: “Creating a series of monosomic lines of Kazakhstanskaya 126 wheat variety”.

For the first time in Kazakhstan' breeding history Kulziya K. Shulembayeva undertook extensive work to radically change hereditary traits of wheat by employing the methods of chromosome engineering. These advances towards the creation of monosomic lines are well known in the world and are registered in the European organization for enrichment of aneuploids (EWAC, European Wheat Aneuploid Co-operative). Later, at Prof. N.L. Udol'skaya insistence, Kulziya K. Shulembayeva started working at the University as a senior fellow in the laboratory of the Department of Genetics and Darwinism. At the same time, Kulziya K. Shulembayeva becomes the Head of the Laboratory of Genetics and Breeding at the same Department, then the Head of the Department.

Due to significant knowledge and experience, and a large number of scientific ideas Kulziya K. Shulembayeva, worthily continued the direction of genetic research outlined by Prof. N.L. Udol'skaya. By employing the methods of chromosome engineering Kulziya K. Shulembayeva created red seeded analogue of an earlier Kazakhstanskaya 4 variety and called it “Nadezhda” in honor and in memory of her mentor. Also, together with known breeder and plant physiologist E.D. Bogdanova, another variety – “Miras” was created. A number of valuable original forms that passed the breeding test were transferred to the plant gene pool division of JSC “AgroInnovation” and LPE “Kazakh Research Institute of Agriculture and Crop Breeding”.

The result of many years of fruitful research work conducted by Prof. K.K. Shulembayeva was summarized in form of a doctoral thesis defended in 1998.

Prof. K.K. Shulembayeva is the author of more than 150 published scientific works, including the book “Aneuploidy in Breeding and Wheat Genetic Studies” (2005), textbooks and guides “Chromosome Engineering” in Kazakh and Russian (2006-2014), Extensive Practice in Cytogenetics (2002), “Biological Statistics” (2013) and “Minor Practice in Course of General

Genetics” (2014). Prof. K.K. Shulembayeva has also co-authored 2 dictionaries – “Concise Russian-Kazakh Glossary of General and Molecular Biology” (1997), “Explanatory Dictionary of Kazakh Terminology” (2002). Scientific outcomes obtained by Prof. K.K. Shulembayeva are accomplished as a number of patents: 20602/ 1122.1 “The compositive substance controlling crops growth” (2006); 24266/ 05 “A method of wheat generation” (2009). Along with large teaching load, Prof. K.K. Shulembayeva is a leading researcher and principal investigator in several research projects supported by grants of the National Science Foundation of RK; she also supervises Ph.D. doctoral fellows in fields of biology and biotechnology.

Prof. K.K. Shulembayeva takes special care of the scientific staff training. She has taught a new generation of plant geneticists composing the backbone of our department. This is a remarkable output of fair and consistent work in science. Kindness, sincerity, commitment to help the youth and share knowledge, well thought out opinions and reasonable scientific conclusions attract both scholars, as well as ordinary people of different ages and life aspirations.

In 2008-2009 Prof. Kulziya K. Shulembayeva was named as "Honorary Worker of Education of the Republic of Kazakhstan" for outstanding achievements in the field of education.

On January 28, 2015 the Department of Molecular Biology and Genetics, School of Biology and Biotechnology, al-Farabi Kazakh National University has successfully organized a special round table "Current state and prospects of breeding and genetic research in Kazakhstan", dedicated to 50<sup>th</sup> jubilee of research and teaching activities of its Professor Kulziya K. Shulembayeva.

Communicated by Drs S.B. Dauletbayeva, A.I. Zhussupova and Z.G. Aytasheva



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