

Ministry of Agriculture of the Republic of Kazakhstan
S.Seifullin Kazakh Agrotechnical Research University

Reviewed
at the meeting of the Faculty Council
Protocol No. 11 dated «18» 04 2024

«APPROVED»

Acting Dean of the Agronomy Faculty of
NJSC «S.Seifullin Kazakh Agrotechnical
Research University»


" 19 " 2024



**DEVELOPMENT PLAN
DOUBLE DIPLOMA EDUCATIONAL PROGRAM
6B08102 "BREEDING AND SEED PRODUCTION"
for 2024 - 2028 years**

Reviewed at the extended meeting of the Department of Agriculture and Plant Growing
Protocol No. 7 dated «08» 04 2024

Astana, 2024

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1 Passport for the development plan of the EP

Passport for the development plan of the educational program 6B08102“Breeding and Seed Production” for the period of 2024 - 2028

1	Reasons for developing an EP plan	The development of the educational program is based on the Agreement on the implementation of the joint educational master program "Agrobiotechnology" (direction "Agronomy") between the Peoples' Friendship University of Russia (RUDN) and the NJSC "S.Seifullin Kazakh Agrotechnical Research University" dated 02.20.2023.
2	Main developers of the EP development plan	Academic Committee (order № 374-N from 18.10.2023) - Kipshakbaeva G.A., Rysbekova A.B., Dyusibaeva E.N., Bazilova D.S. - PhD, SNA of the laboratory of genetic resources of LLP “NPTSZH named after A.I.Baraev”, Gabdola A. A.I.Baraev", Gabdola A. - Doctoral student of the 2nd year of the OP “Genetics and breeding of agricultural crops”. Invitees: Irina Zhirnova, M.Sc. (Agricultural Sciences), Head of the Department of selection of cereals, legumes, grain-forage and oilseed grasses of "A.I. BARAYEV RESEARCH AND PRODUCTION CENTRE FOR GRAIN FARMING » LLP; Pavel Lushchak, Director of “Naydorovskoye”.LLP
3	Time frame for implementing the development plan	2024 – 2028
4	Volume and sources of financing	Thestatebudget
5	Expected final results of the implementation of the EP development plan	Training of specialists in the direction of crop breeding and seed production, possessing general cultural, basic and professional competencies and meeting the requirements of employers in the agro-industrial complex and related industries.

2 Analytical substantiation of OP “Breeding and Seed Production”

2.1 Information about the educational program

The department of agriculture and plant growing of agronomic faculty of Kazakh Agrotechnical University named after S.Seyfullin is the graduating one. Training of specialists of agronomic profile has been conducted since 1958. In connection with the introduction of the new NAP educational program of bachelor's degree - 6B08102 “Breeding and Seed Production” was developed and implemented from 2019 academic year.

The educational program “Breeding and Seed Production” is developed in accordance with the classifier of directions of training of personnel with higher and postgraduate education and agreed with the Dublin descriptors and the European Qualifications Framework.

The educational program is focused on providing comprehensive and quality training of competitive, highly qualified specialists in the field of breeding and seed production of agricultural crops, capable of solving theoretical and practical problems of professional activity in modern conditions.

The uniqueness of the educational program lies in the fact that at present there is an acute shortage of personnel in the field of breeding and seed production of agricultural crops. This educational program is aimed at providing qualified personnel for scientific and production institutions. The basis for the development of the educational program is taken into account the world experience of leading universities.

The educational program is developed on the basis of a modular system of disciplines and consists of 15 modules. The educational program contains theoretical training, including the study of cycles of general education, basic and profile disciplines, as well as final certification.

Creation of educational program 6B08102 “Breeding and Seed Production” on bachelor's degree is created on the basis of the high demand of domestic research institutions in specialists in the direction of breeding and seed production of agricultural crops.

To date, the relevance of directions of breeding and seed production is obvious, in connection with which the Government approved the program “Comprehensive plan for the development of breeding and seed production of agricultural crops of the Republic of Kazakhstan for 2023-2027 years”.

Target employers of the graduates of these programs are research institutions of Kazakhstan.

2.2 Information about students

The department of agriculture and crop production of agronomic faculty of Kazakh Agrotechnical Research University named after S. Seifullin is the graduating department in the direction of training 6B081- Agronomy.

The total contingent of students for the current academic year is 285 people, of which 223 - grant the Ministry of Education and Science of the Republic of Kazakhstan, 61 students are trained on a contractual basis.

In 2023-2024 academic year on the EP 6B08102 “Breeding and seed production” entered 19 people, a total of 50 people are trained on this EP.

2.3 Internal conditions for the development of OP “Breeding and Seed Production”

Non-profit joint stock company “Kazakh Agrotechnical Research University named after S.Seifullin” is a subject of higher professional education of the Republic of Kazakhstan and acts on the basis of the Charter, approved by the decision of the sole shareholder of the non-profit joint stock company and “National Agrarian Scientific and Educational Center” № 2 from 05.02.2018, certificate of state re-registration of the legal entity № 27738-1901-AK from 10.07.2007.

Today Kazakh Agrotechnical Research University is a multidisciplinary university, which has its own established scientific schools, thanks to which the basis of the current faculty has been created.

Research activities of students of the Department of Agriculture and Crop Production are carried out continuously within the framework of scientific programs and projects. As a result, the quality of training of specialists with higher education, meeting their needs in the market economy; skills of creative professional thinking are formed by mastering scientific methods of knowledge and research, as well as provides the unity of education (study and education), scientific and practical process; conditions are created and developed (legal, economic, organizational, resource, etc.), providing the opportunity for each student to realize their right to the creative development of personality, At the republican competition of scientific research works of students, organized by the Ministry of Education and Science of the Republic of Kazakhstan 2nd year student, OP 6B080102-“Breeding and Seed Production” Perdebek S. distinguished among other participants received the second place (supervisor Rysbekova A.B.).September 22, 2023 the International scientific-practical conference “Problems of desertification of the territory of the Republic of Kazakhstan and ways of their solution” dedicated to the 80th anniversary of the candidate of biological sciences of Al-FarabiKazNU, Associate Professor. Professor AmetovAbibullaAmetovich, “Breeding and seeds” of the Faculty of Agronomy, Department of Agriculture and Plant Industry SamalAskharkvina, a 3rd year student of group BBB 01-077-21-02, made a report on “Features of Development of the first root system of wheat varieties under drought conditions” and took 1st place. On March 14, 2024 the competition of Kazakh Agrotechnical Research University named after S. Seifullin “Zhigit Siultany-2024” was held, where our 1st year student ErgeshDanial, surprising the jury members with his talent, took the 1st place.

Over the years of its existence, the University has trained over 60 thousand highly qualified specialists for various branches of the agro-industrial complex of the country, who by their selfless labor have made and continue to make a worthy contribution to the development of the economy of the state. The University is rightfully proud of its graduates, among them are employees of the Presidential Administration and the Office of the Prime Minister, deputies of the Senate and Majilis of the Parliament of the Republic of Kazakhstan, ambassadors, prominent scientists, candidates and doctors of sciences, Heads of regions, cities and districts, heads of large enterprises and agro-formations, specialists in various spheres of national economy.

2.4 Characteristics of the surrounding society

The priority direction in the development of the educational program is training, focused on the student's personality, revealing his individual abilities, turning the student into an active and interested participant of the educational process.

The educational environment in which the formation of future specialists in soil science and agrochemistry takes place is an interrelation of conditions that ensure the formation of a personality capable of active creativity in various areas of fundamental and applied sciences.

The basis of the educational environment is its social component, with regard to educational programs of “Agronomy” - it is more than 65 years of traditions and image of Kazakh Agrotechnical Research University named after S. Seyfullin, mutual responsibility, moral and emotional climate; social support of students, extracurricular activities (creative teams, sports sections, scientific communities, etc.). One of the key components is also intellectual-developmental environment: modern technologies of developmental learning (interactive teaching methods), a system of elective courses (business games, excursions), a system of elective courses in different areas of educational programs to acquire knowledge on a particular topic, a system of intellectual competitions at various

levels (subject and interdisciplinary Olympiads, contests, tournaments, intellectual marathons, games, etc.), a system of support for gifted students.

All components of the structure of the educational environment are open, there is an opportunity to realize oneself, which leads to increased motivation for learning activities, works out communicative skills.

2.5 Information about teaching staff implementing the educational program

The total number of faculty members who teach classes at the department, total: 2023-2024. - 29. Including those with academic degrees and titles: 2023-2027 - 75.0% (taking into account the teachers of the general disciplines cycle). The classes are conducted by 24 teachers in the state language. The average age of the teaching staff is 48 years, including 1 teacher under 35 years old, 15 teachers 35-50 years old, 8 teachers over 50 years old. The average age of full-time faculty with academic degrees and titles amounted to 52 years for the reporting period.

The staffing of the faculty of the department according to the staff schedule is 100%. The staffing of the faculty is 87.0%.

The availability of basic education at the faculty in the profile of the department - 100%.

The teaching staff of the department is constantly improving, raising its scientific and pedagogical level through the system of professional development. During the reporting period, the department has been constantly working to improve the qualification level of its young employees - through master's and doctoral programs. In 2023-2024 academic year Doctor of Philosophy (PhD) in the specialty "Agronomy" teacher of the department Nogayev A.A. was awarded the title of associate professor, and he was the winner of the competition "The best teacher of the university" 2023.

From the number of faculty members, leading classes for students of the specialty, 5 people are the owners of the state grant "The best teacher of the university" (professors Stybaev G.Zh., Musynov K.M., Khassanov V.T., senior lecturer Baitelenova A.A., Nogayev A.A.).

The analysis of the personnel potential of the department showed its high professional level with its aspiration for improvement.

2.6 Characteristics of the achievements of "Breeding and Seed Production" EP

To the achievements of the program can be attributed and the number of contracts concluded with specialized research institutes on the students' practical training. At the Department of Agriculture and Plant Industry in recent years concluded contracts with LLP "Karaganda Research Institute of Plant Industry and Breeding", LLP "Kazakh Research Institute of Agricultural Products Processing", LLP "South-West Research Institute of Animal Husbandry and Plant Industry", LLP "Kaz Research Institute of Rice Breeding", LLP "South-West Research Institute of Animal Husbandry and Plant Industry", LLP "Atameken-Agro", LLP "Agrofirma TNK", JSC "Akmola-Phoenix", LLP "Research Institute of Potato and Vegetable Growing", LLP "Greenhouse Technologies of Kazakhstan", LLP "Kazakh Research Institute of Agriculture and Plant Industry, LLP 'Kazakh Research Institute of Livestock and Fodder Production', LLP 'Izet green house', LLP 'Astana Eco Standard', LLP 'Kazakh Research Institute of Plant Protection and Quarantine named after J.Zhienbaev', LLP 'Kazakh Research Institute of Plant Protection and Quarantine named after J.Zhienbaev'. Zh.Zhienbaev" LLP 'Baimyrza Agro' LLP, 'El Dana' LLP.

For training of practice-oriented specialists dual training is important. In 2023-2024 academic year, students in the specialty had practical training on the basis of "Kazakh Research Institute of Plant Production Processing" LLP, "Led System media" LLP, "Scientific and Production Center of Grain Farming named after A.I.Barayev" LLP.

Methods of conducting professional practices: stationary, on-site, on-site-field.

For the disabled and persons with disabilities, the choice of places of practice is consistent with the requirement of their accessibility for these students and the state of health.

Graduates who have mastered the bachelor's degree program of educational program "Breeding and Seed Production" can work at enterprises, agro-industrial complex, in subdivisions of the Ministry of Agriculture of the Republic of Kazakhstan and scientific institutions.

In addition, to date on the kaephdra realized scientific projects GF, MU, leaders - Kipshakbaeva G.A., Amantaev B.O., Rysbekova A.B., Zotova L.P., in which as performers include and students of OP "Breeding and Seed Production".

3. Characteristics of the problems that the development plan of the "Breeding and Seed Production" EP is aimed at solving, and justification for the need to solve them

- harmonization of the content of educational programs with educational programs of leading foreign and Kazakhstani universities and improvement of the quality of education through the introduction of effective pedagogical technologies, integration of educational and research and production environment, involvement of highly qualified practitioners;

- competence-based approach in education, providing variability and diversity of educational programs and educational services;

- focus on meeting the needs of the state, stakeholders and students, and alignment with national development priorities and the development strategy of the university.

- transparency of the educational program management system and participation of representatives of stakeholders (employers, faculty, students) in the collegial management bodies of the educational program.

- to provide equal opportunities for students, including regardless of the language of instruction to form an individual educational program aimed at the formation of professional competence. providing opportunities for students to receive a wide range of additional education and additional educational services, including paid services;

- ensuring a high level of social and professional competence and education of graduates as a result of traditionally high quality of education;

- reforming the educational process in accordance with the practice of the world's leading research agrarian universities and strengthening the material and technical base.

Students of "Breeding and Seed Production" EP have the opportunity to undergo training practice in many profile disciplines, the organization of training practice should be carried out in and the acquired skills are very important in the study of disciplines in practice, including in the framework of dual training, in this regard, it is necessary to organize trips to production bases for visual training practice.

4 The main goals and objectives of the development plan of the "Breeding and Seed Production" EP indicating the timing and stages of its implementation

The aim of the educational program is to train specialists in the direction of crop breeding and seed production, possessing general cultural, basic and professional competencies and meeting the requirements of employers in the field of agro-industrial complex and related industries.

Objectives of the educational program:

1. Formation of universal and socio-personal values of the graduate;

- 2 Formation of theoretical knowledge and practical skills necessary professional competence in the field of breeding and seed production of agricultural crops;

- 3 To form the graduate's readiness for professional activity, mobility, continuous professional and moral improvement and growth throughout life.

The purpose of the development plan of OP “Breeding and Seed Production” is to develop various types of activities aimed at creating conditions for the successful development of the educational program.

5 Measures to reduce the impact of risks for the “Breeding and Seed Production” EP

№	Risks	Risk mitigation measures
1	Social (dismissal of leading teachers, industrial conflicts)	1. Creating a system of employee motivation. 2. Including them in the work on the development program of the institution 3. Motivation 4. Creation of a favorable moral and psychological climate 5. Social support
2	Financial and economic risks (increase in the number of alternative services, decrease in the solvency of consumers, increase in taxes, prices for public utilities, etc.).	1. Strengthening the image activity of the HEI and EP 2. Measures to select the leadership
3	Production and technological risks (wear and tear of equipment, novelty of technologies)	1 Updating the material and technical base 2 Improvement of pedagogical skills, language and professional qualification of teaching staff 3 Introduction of modern teaching technologies 4 Informatization of the educational process and accordingly the cost of projects
4	Force majeure circumstances (threats of terrorist acts, natural and man-made disasters)	Allocating a block of activities in the plan, the cancellation of which will not significantly affect the achievement of new educational results
5	Absence of a laboratory for studying specialized disciplines	Establishment of a training laboratory

6 Action plan for the development of the educational program “Breeding and Seed Production”

№	Name of events	Implementation timeframe	Responsible	Expected results	Resource support
1	Improving master's degree programs by updating the content of specialized disciplines, with the involvement of stakeholders - RUDN partners, employers, students	2024-2028	Head department, members of the Academic Committee	An improved educational program, with updated disciplines, the results of which meet the requirements of the time, including in production and science	Legal acts, recommendations of partners, employers and other stakeholders

2	Development of a new UML in the state, Russian and English languages	2024-2028	Head department, teachers of the department	A new UML will be developed in the state, Russian and English languages, taking into account the need to ensure	Developments of scientists, teaching staff, etc.
3	Increase in the number of teaching staff who speak a foreign language, people.	2024-2028	Head department, teachers of the department	Increase in the number of teaching staff who have passed an international exam with a confirming certificate, 10% annually	Studying English in courses organized by the university and at your own expense
4	Classroom equipment	2024-2028	Head department	A laboratory will be equipped in the field of EP	Due to scientific projects and s/s of the university
5	Increase in the number of scientific projects and agreements with business entities	2024-2028	Head department, teachers of the department	Applications will be submitted for the Global Fund competition	PPP potential
6	Conducting dual forms of training at manufacturing enterprises in the country	2024-2028	Head department	At least 1 discipline per year will be organized as part of dual training	In accordance with plans and contracts
7	Publication of scientific articles in journals included in the Thomson Reuters, Scopus and Springer databases, in scientific journals with an impact factor	2024-2028	Head department, teachers of the department	At least 1 article will be published per year	As part of the implementation of scientific work
8	Involving leading scientists from near and far abroad countries to give lectures, conduct seminars, etc. students	2024-2028	Head department	A scientist will be invited to give guest lectures, at least 1 per year	As part of the invitation of foreign scientists on scientific projects and other sources
9	Passing independent national specialized accreditation	2024	Head department	EP will be accredited	-//-
10	International and national scientific and industrial internships for teaching staff, incl. young scientists of the department	2024-2028	Head department, teaching staff	At least 1 teacher will undergo internship	At the expense of the project, or from the university

11	Monitoring of graduates' employment	2025-2028	Head department, resp. for employment of graduates	Employment monitoring will be carried out annually	Analysis of student data
12	Concluding agreements on undergraduate research internships	2025-2028	Head department, resp. for practice	Concluding agreements, if necessary, on research internships, depending on the number of undergraduates	Analysis of support for both students and the organization's capabilities for completing research internships

7 Mechanism for implementing the development plan of the educational program "Breeding and Seed Production"

1. Message of the President of the Republic of Kazakhstan - Leader of the Nation Nursultan Nazarbayev to the people of Kazakhstan "Strategy 'Kazakhstan-2050'"

2. Legislative and normative acts, in accordance with which Kazakh Agrotechnical Research University named after S. Seifullin carries out its activity: the Law of the RK "On Education" from July 27, 2007 № 319-III.

3. Development program of NAO "Kazakh Agrotechnical Research University named after Saken Seifullin" for 2024-2029.

4. License for the right to conduct educational activities Kazakh Agrotechnical Research University named after S. Seifullin

5. Regulatory documentation developed by Kazakh Agrotechnical Research University named after S. Seifullin

6. Mastering by students of the basic educational program in accordance with the Work Study Plan.

7. Providing students with the opportunity to test themselves in different directions: social and moral, artistic and aesthetic, research, scientific, cognitive in interrelation.

8. Creating an appropriate developmental environment: educational, creative, social, etc.

9. Providing a favorable moral and psychological climate.

8 Assessment of the socio-economic efficiency of the implementation of the development plan of the "Breeding and Seed Production" EP

As a result of realization of the OP development plan it is supposed to ensure socio-economic effects:

- Improving the quality of professional education and, as a consequence, the competitiveness of specialists in the field of soil science and agrochemistry;

- Improving professional literacy of graduates and better meeting the needs of potential employers;

- increased role of employers in training of professional staff;

- increasing demand for qualified personnel, optimizing their age structure;

- improvement of the system of training specialists of all levels;

- increasing the number of educational services;

- Expansion of opportunities for professional self-realization of young people;

- Increasing the level of income of education workers;
- preventing the outflow of promising pedagogical personnel to other sectors;
- increase in the number of young people employed in the economy (increase in the number of graduates employed or transferred to the next level of education);
- growth of academic mobility of students, academic and administrative;
- growth of export of educational services (increase in the number of citizens of other states studying in institutions of higher professional and postgraduate education of the Republic of Kazakhstan);
- renewal of educational and material base (teaching and laboratory, computer and technological base, corresponding to modern requirements and norms).

9 Model of EP graduate by level of study

The Bachelor's program graduate model includes competencies: general educational competencies, basic competencies and professional competencies.

General educational competences. To know the prerequisites of formation of statehood of modern Kazakhstan; general principles of being and cognition, relations of a person and the world, regularities of formation of a personality of a specialist with higher professional education, regularities of occurrence of political phenomena (institutes, relations, processes), ways and forms of their functioning, methods of management of political processes, consciousness, structure of society, norms and values, ways and features of functioning of elements of society, peculiarities of processes of individuals and their role in the development of the society.

Must be able to argue his/her own assessment of everything happening in social and industrial spheres on the basis of world outlook positions; to choose methodology and analysis in the field of such activity; to evaluate situations in different spheres of interpersonal, social and professional communication; to operate public, business, cultural, legal and ethical norms of the Kazakhstani society; to use in personal activity different types of information and communication technologies; to build a personal image of the Kazakhstani society.

To possess skills of application in practice of knowledge in the field of social, social and humanitarian sciences; to communicate orally and in writing in Kazakh, Russian and foreign languages, to solve problems of interpersonal, intercultural and professional communication.

Basic competences. Know and understand: the basics of the legislation of the Republic of Kazakhstan in the sphere of professional activity; structure and functioning of biological objects, the essence of biological processes, the cycle of substances and energy transformation in the cell, organism; nomenclature of inorganic and organic compounds; structure of the main classes, classification and regularities of organic reactions; classification of soils, methods of fertility assessment and soil reproduction; epiphytic, phytopathogenic and pathogenic microflora of plants and soil, ways of regulation of its life. Show skills: to form professional ideas with critical argumentation; to coordinate professional activity on the assigned area with the activity of other areas; to assess the prospects of farm development in market conditions; to use agrometeorological information in the production of products; to adjust agricultural machinery, equipment, to establish the rate of seeding of seeds, fertilizers, to determine the method of assessment of soil fertility and its regulation on the basis of fertilizer application; to diagnose pests and diseases.

To possess skills: to use modern IT, including database and software packages for crop production; to work with microorganisms, microscopy, identification, microbiological analysis of soils, soils and plants; in legal issues to resolve emerging disputes in the team, with economic entities; oral and written professional communication in Kazakh, Russian and foreign languages; protection in emergency situations; to work with regulatory and legal literature, labor legislation.

And professional competencies, who have completed training within the educational program "Breeding and seed production" to know and understand: the main directions and methods of breeding of agricultural crops and evaluation of source material; the importance of isolated cell and tissue culture of plants for breeding, seed production and crop production; methods of creation and evaluation of source material; laws of agriculture and crop production; system of crop rotations, systems of soil cultivation for crops of crop rotation taking into account fertility; main types of agricultural crops, their economic values, morphological and biological features; modern technology of cultivation of agricultural crops; varieties of agricultural crops and their selection for specific conditions of the region according to the level of intensification of farming, preparation of seeds for sowing, methods of determining the quality of seed; requirements of State Standards to seed and quality of plant products; basics of storage, primary processing, processing of plant products; ability to: be able to develop, implement, control, evaluate and correct components of the technological process in crop production; use methods of growing seed and planting material of agricultural crops; make technological maps of cultivation and organize field work in accordance with them; calculate the needs of the farm in seeds, fertilizers, pesticides, fuels and lubricants, agricultural machinery, tools and equipment, labor resources; document and keep records of the farm's needs in the following areas; have skills: in solving organizational and economic issues; application of modern technology of cultivation of agricultural crops; methods of cultivation of cells and tissues of plants, obtaining regenerants and their cytogenetic analysis; to perform basic laboratory experiments; to make adjustments in agrotechnical methods and develop recommendations for effective and rational use of land, bioclimatic resources of the zone; to distribute labor resources, to give clear and effective instructions, observing the progress of work in the production of crop production; to organize work on the cultivation of high-quality varietal seeds and planting material, as well as on the creation of the necessary amount of seed stock; to ensure the establishment of seed plots, agronomic measures to care for them in order to obtain high-quality seeds; in the application of advanced progressive technology of growing crops, taking into account the world's.

Head of Department
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