AJPDIS
GLOBAL RESEARCH NETWORK

AMERICAN Journal of Public Diplomacy and International Studies
Volume 02, Issue 02, 2024 ISSN (E):2993-2157

Improvement of Personnel Training System in the Conditions of Innovative Development of Agriculture

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Abstract: This article discusses improving the personnel training system in the conditions of innovative development of agriculture. Requirements for personnel are also given for the innovative model of agriculture, capable of creating, maintaining and managing innovative agriculture.

Keywords: improvement, management, agriculture, innovative development, personnel training.

Changing economic relations in the field of agricultural production, processing and sale of finished products requires qualitative improvement of human resources. In this regard, the republic will have to quickly make major changes in the reproduction of personnel, move to a new professional and qualification structure of personnel and a new way of rural life. Behind all this are significant quantitative and qualitative changes in the formation of personnel, their training and retraining. Currently, the training of qualified personnel for agriculture is carried out through the following channels: in vocational educational institutions, colleges, technical schools, higher educational institutions and directly in production.

Requirements for the professional composition of the teaching staff for conducting the educational process are also set out in the professional standards of teachers. Professional standards present “generalized labor functions” and specific “labor functions” for different skill levels. The “generalized labor functions” present possible names of positions, professions (starting with assistant and ending with professor), requirements for education and training, and requirements for practical work experience. “Labor functions” define “labor actions”, “necessary skills”, “necessary knowledge” [2].

The material and technical base of an educational institution of higher education in agriculture can be formed in the following areas:

- equipment for educational laboratories, incl. virtual simulators;
- equipment of training parks;
- equipment for basic agricultural organizations;
- basic departments at enterprises in various sectors of the economy.

The result of the functioning of the personnel training system for innovative agriculture is a graduate who is able to adapt to new production conditions, use modern technologies, modern agricultural machinery and equipment. Therefore, an innovative model of agriculture requires personnel capable of creating, maintaining and managing innovative agriculture. In this case, the directions of innovative development of agriculture (not development trends) are important [1].

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Let us note the main ones:

1. The use of technologies that control the production process, both in crop production and in livestock production.

2. The use of technologies based on the principles of resource saving, i.e., minimal and zero tillage methods, the use of complexes of transport and technological machines with increased power and working width of the unit, the use of combined units, the use of “precision farming” technologies.

3. Use (return to ...) organic farming technologies.

4. Introduction and effective use of agricultural land mapping systems.

5. The use of technologies (technological machines) capable of monitoring yields during the harvesting of agricultural crops.

6. The use of technologies in animal husbandry based on automation, computerization, robotization, both of the main production processes and in matters of selection and assessment of the formed genetic potential.

I would also like to note the directions of innovative development adjacent to the agricultural sector, the agricultural engineering sector, on which the result of the innovative development of agricultural production in Uzbekistan largely depends:

1. Increasing engine power to 425-605 hp, with material consumption not higher than the best foreign models, while reducing and bringing fuel efficiency to levels corresponding to the best foreign analogues.

2. Production of a model range of modern agricultural machines with optimal performance properties, for use with tractors of various traction classes (various engine power).

3. Creation of modern equipment for sowing, planting, and harvesting agricultural crops, capable of using the results of crop programming, analysis of field weeds, ensuring maximum yield, high quality with minimal losses humor [4].

It is also necessary to consider the directions of innovative development of the technical service industry, as a connecting link in the system of forming and ensuring the technical readiness of the technical potential of the agricultural sector:

1. Effective forms and methods of constructing the production and technical infrastructure of technical service and agricultural enterprises that meet the requirements of innovative development of agriculture and the agro-industrial complex as a whole.

2. Development of technical services of the agro-industrial complex based on the introduction of 1T technologies, ensuring: an increase in machine reliability indicators; reduction in fuel and lubricant consumption; improving environmental performance of both individual transport and technological machines and the entire production and technical infrastructure of enterprises.

3. Creation and improvement of an effective dealer service, the secondary car market, development of leasing, rental and rental of machinery and equipment.

4. Creation and development of comprehensive engineering and technical services for livestock breeding facilities of agricultural organizations implementing innovative technologies. The innovative development of agriculture must correspond to a "personnel training system" [1].

But to employ a graduate in an agricultural organization, serious motivation is needed:

- the presence of a functioning industry (crop production, livestock production, engineering and technical services, relevant fixed assets);
- availability of social infrastructure (kindergartens, schools, medical institutions, creativity centers, availability of the Internet, mobile communications, etc.);
- use in agricultural production of technologies that meet the requirements of modern highly efficient production.

And modern technologies that meet the requirements of today in agriculture are, first of all, [3]:

1. Precision farming technologies.
2. Parallel driving systems.
3. Yield mapping systems.
4. Technologies for differentiated application of fertilizers.
5. Agricultural robots.
6. Unmanned vehicles and aircraft.
7. Cross-platform solutions.

Let's consider the main types of manufactured agricultural machinery used in the implementation of IT technologies in agriculture.

GPS (GLONAS) navigation, installed on tractors from foreign manufacturers: CNH Global, Deutz-Fahr, Fendt, John Deere, Massey Ferguson; domestic and Belarusian tractors: Belarus 82.1, Belarus 1221, Belarus 2522, Belarus 3022, Belarus 3522, tractors of the Kirovets family [1].

Using GPS navigation allows you to solve the following issues:

- reduction in the consumption of fuel and lubricants, consumption of seeds, fertilizers and chemicals as a result of optimizing equipment routes, eliminating repeated passages of units, and skips during sowing;
- the possibility of round-the-clock production operation of agricultural machinery;
- determine the actual location of agricultural machinery;
- determine the productivity of machine and tractor units;
- record operating time for organizing maintenance and repair;
- reducing production costs, increasing the efficiency of operation of equipment and all agricultural production.

Modern seeders and seeding complexes have unique dosing systems that ensure accurate, uniform distribution of seeds; the design of the seeders makes it possible to control sections of the seeder independently of others, which allows optimizing the technological process of sowing on headlands. Many seeding machines use tramline metering devices. In agricultural production technologies, seeders and sowing complexes from the following foreign manufacturers are used: PÖTTINGER (Austria), KVERNELAND (Norway), LEMKEN, AMAZONE (Germany), VÄDERSTAD (Sweden), AGCO-RM (CHALLENGER) (USA) [3]. And modern technologies that meet the requirements of today in agriculture are, first of all, [3]:

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- reducing production costs, increasing the efficiency of operation of equipment and all agricultural production. Plant protection machines from foreign manufacturers are mainly equipped with injection sprayers of various types, which can significantly reduce the consumption of pesticides without compromising the quality of spraying. Many companies use automatic devices for switching on individual sections, supported by a GPS system, regulating devices with the ability to select the required droplet diameter based on data on the condition of crops and weeds, as well as weather conditions.

Conclusions. When training personnel for an innovative model of agriculture, three generally accepted elements, or subsystems, of the general personnel training system are used. First of all, these are legal documents, then the professional composition of the teaching staff and the third component is the material and technical base of educational institutions. The teaching staff, material and technical base must meet certain requirements.

Modern technologies for the production of agricultural products should be based on the use of agricultural machines based on the use of IT technologies. Therefore, the primary task facing domestic science, agricultural engineering, and government bodies, in our opinion, is the task of increasing the production of agricultural machinery that meets innovative requirements.

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