тріщиностійкості (K_{IC}) вздовж прутків, що можна пояснити різним структурним станом на різних ділянках прутків в результаті дії термосилового діяння (нерівномірного нагріву);

Бібліографічний список

- 1. Гнідець Б.Г., Завадяк П.П., Щеглюк М.Р. Залізобетонні конструкції з електротермічним попереднім напруженям. Київ: Техніка, 1996. 240с.
- 2. ДСТУ 3760-98. Прокат арматурний для залізобетонних конструкцій. Загальні технічні умови. Київ: Держстандарт України, 1998. 20с.
- 3. Савицький М.В., Пунагін В.М., Приходько А.П. Довговічність бетонних та залізобетонних виробів і конструкцій. Київ: УМК ВО, 1988. 112с.
- 4. Когут М.С., Гуменюк Р.В. Тріщиностійкість термонапруженої арматури і вплив на неї коливань температури. *Проблеми міцності*, м. Київ №5 11.10.11р., С. 82 89. DOI:10.1007/S11223-011-9326-5
- 5. Когут М.С., Гуменюк Р.В. Визначення тріщиностійкості (K_{1C}) металу шва стальної термо-напруженої арматури на циліндричному зразку з кільцевою тріщиною. *MOTROL. Commision of Motorization and Energetics in agriculture*. Львів; Lublin, 2012. Vol. 14. P. 28-31.
- 6. Щеглюк М.Р. Математична модель електротермічного напруження арматури в умовах будівництва. Зб. наук. праць: Діагностика, довговічність та реконструкція мостів і будівельних конструкцій. Львів: Каменяр. Вип.6. 2004. С.170-178.
- 7. Humenyuk R., Wójcik A. Impact of scale factor on cracking resistance of thermostressed and output reinforcement steel. *Teka. Commission of motorization and energetics in agriculture*. Lublin-Rzeszow 2017, vol. 17, №1. P. 49-54.

FEATURES OF THE TRAINING OF AGRICULTURAL INDUSTRY SPECIALISTS IN THE CONDITIONS OF SUSTAINABLE DEVELOPMENT

N. Dotsenko, Doctor of Pedagogical Sciences, Professor Mykolayiv National Agrarian University, Mykolayiv, Ukraine

Ukraine has significant potential in the production of agricultural and food products, and technologists play an important role in its realization. An important aspect in the professional training of technologists in the field of production and processing of livestock products and food technologies is their contribution to the development of the national economy and ensuring the country's food security. There are described the features of the professional training of technologists in specialized higher educational institutions. Taking into account modern requirements and trends, as well as involving the latest technologies and practices, these specialists have every chance to become competitive on the international market and ensure the quality and safety of food products for the Ukrainian population.

Keywords: professional training, agricultural industry, sustainable development.

In Ukraine, agriculture and the food industry are important branches of the national economy. Production and processing of livestock products and food products are of great importance for providing the population with high-quality and safe food, as well as for export to international markets. However, success in these industries depends significantly on the availability of highly qualified technologists who possess modern knowledge and skills in the production and processing of food products. In accordance with the growing demands of consumers, as well as global standards of quality and safety of food products, specialists must be constantly ready to improve their knowledge and skills. Professional training should include not only the basic technical aspects of production and processing of livestock and food products, but also ethical, ecological and social aspects, which are increasingly important in today's world.

In the modern conditions of the development of agriculture and food industry in Ukraine, the issue of professional training of technologists in the production and processing of animal husbandry products and food technologies is becoming particularly relevant. The quality and safety of food products consumed by the population, as well as the competitiveness of Ukrainian agricultural and food enterprises in the world market, depend on these specialists [1].

One of the main features of the professional training of technologists in Ukraine is the presence of specialized higher educational institutions that offer programs in accounting and auditing in the food industry, food production technologies, meat processing, milk processing, poultry farming, food technology, biotechnology and other specialties, related to the production and processing of livestock products and food technologies. The second important feature is the availability of current programs and training methods that take into account modern requirements and standards of production and processing of livestock products and food technologies. Specialists must have knowledge in the fields of food safety and quality, production organization, use of modern technologies and innovative developments. The third feature is the practical orientation of education. Technologists should have the opportunity to acquire practical skills at modern productions and enterprises of the food industry. For this, it is important to ensure practical training of students on the basis of enterprises, as well as to conduct master classes and trainings with industry specialists. The fourth feature is active interaction with industry enterprises and organizations. This allows students to gain practical experience and know the needs of the labour market, and also contributes to the implementation of innovative solutions in production.

Disadvantages of professional training of technologists in Ukraine are the lack of a sufficient number of modern equipment and laboratories for practical training, as well as instability in the financing of educational institutions. One of the promising trends in the training of technologists is the introduction of digital technologies and the Internet of Things in the field of production and processing of livestock products and food technologies. This will allow students to gain practical experience in working with modern equipment and production management systems that meet modern requirements and trends.

It is important to support the internationalization of professional training, to promote the exchange of experience and knowledge with other countries, as well as to attract foreign experts to teach relevant subjects and conduct master classes. In general, the professional training of technologists in the production and processing of livestock products and food technologies is an important element of the development of agriculture and the food industry in Ukraine.

An additional important component of the professional training of technologists in the field of production and processing of livestock products and food technologies is the development of research and scientific and technical activities. High quality scientific research and innovative development can significantly improve production efficiency, reduce costs and improve product quality. For this, it is important to promote active cooperation between higher education institutions, scientific and research institutes, as well as industry enterprises. Involvement of students in research activities and publication of their results can contribute to the formation of new ideas and technologies in the field of production and processing of livestock products and food technologies. Another important aspect is the study and implementation of modern environmental standards and practices in the field of production and processing of livestock products and food technologies [2]. Preservation of natural resources and compliance with environmental standards are becoming increasingly important tasks for modern enterprises. Equally important is the preparation of specialists for the challenges and changes brought about by globalization and international cooperation. Specialists must be ready to compete in the global market, as well as to adapt to different standards and requirements of different countries.

Thus, the professional training of technologists in the production and processing of animal husbandry products and food technologies in Ukraine requires a comprehensive approach and taking into account modern trends in the industry [3]. Ensuring the quality and safety of food products, the development of innovative technologies and research activities, as well as readiness for international cooperation are the main tasks in this area. Another important aspect of the

professional training of technologists in Ukraine is a balanced approach to the theoretical and practical component of training. Students should receive high-quality theoretical training, but also have the opportunity to practically apply their knowledge in real productions and enterprises. In addition, it is important to improve the system of internships of students at enterprises of the industry. This will help them gain valuable work experience, learn modern technologies and production processes, and see how theoretical knowledge is applied in practice. It is also important to consider current trends in consumer demand for food products. Technologists must be ready to develop new products and technologies that meet modern tastes and consumer demands, as well as take into account effective trends in the food industry, such as organic production, vegetarian and gluten-free products.

In general, the professional training of technologists in the production and processing of livestock products and food technologies in Ukraine is a complex and multifaceted process that requires a combination of theoretical knowledge and practical skills, as well as taking into account modern trends and market requirements. These specialists play a key role in ensuring the quality and safety of food products, and their knowledge and skills are of great importance for the development of the industry in Ukraine.

References

- 1. Batsurovska, I., Dotsenko, N., Soloviev, V., Lytvynova, S., Gorbenko, O., Kim, N., and Haleeva, A. Technology of application of 3d models of electrical engineering in the performing laboratory work. CTE Workshop Pro-ceedings. 2022. 9. P.323–335.
- 2. Chumchuen, N., Klinbumrung, K., and Meesomklin, S. Professional teaching practice through miap based integrated learning activities for electrical engineering education. 2020 5th International STEM Education Conference (iSTEM-Ed). 2020. P. 95–98.
- 3. Lucas M., Bem-Haja P., Siddiq F., Moreira A., Redecker C. The relation between in-service teachers' digital competence and personal and contextual factors: What matters most? *Computers* & *Education*. 2020. 160 URL: https://www.sciencedirect.com/science/article/pii/S0360131520302505

ДОСЛІДЖЕННЯ ЕФЕКТИВНОСТІ ПРОРІЗАННЯ ПОЖНИВНИХ РЕШТОК ДИСКОВИМИ СОШНИКАМИ

М. Заєць, к.т.н., А. Дідковський, магістр Поліський національний університет

Adoption of no-till or no-till seeding technology has a number of economic and environmental benefits, such as improved soil properties, reduced erosion and soil degradation, and savings in labor time and fuel. Theoretical studies substantiate the dependence of the diameter of the disc coulter on the depth of penetration of the disc, the depth of the layer of plant remains and the angle of compression. Experimental studies have established that different shapes and types of disc coulters with a diameter of 380 mm best cut winter wheat straw with natural moisture (W=10.1%) and field moisture (W=22.3%). Research has confirmed that limiting the rotation of the active disc coulter at high speeds (speed coefficient λ >1.37 and λ =1.58) leads to an increase in the amount of chopped straw, compared to the passive rotation of the disc coulter in contact with the soil (λ =1.0). Notched disc coulters cut more straw than smooth disc coulters. The dependence of straw cutting on its moisture content was established.

Keywords: disc coulter, speed coefficient; harvest residues; no-till; distribution of straw.

Основною дилемою сьогодення для аграріїв, які займаються технологіями No-till, Strip-till або Mini-till по дотриманні глибини заробки насіння сошниками посівних машин [1]. Даний параметр один із важливіших критеріїв, який впливає на врожайність