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Міжнародна науково-практична конференція

АГРАРНА ОСВІТА ТА НАУКА: ДОСЯГНЕННЯ, РОЛЬ, ФАКТОРИ РОСТУ

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використання соски Calf Baddy Teats для випоювання молока телятам раннього віку є більш економічно вигідним й раціональним, оскільки кількість випадків захворювання тварин на шлунково-кишкові хвороби з ознаками діареї є значно нижчою порівняно з випоюванням молока традиційною соскою.

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«BROILER FARM MANAGER» AS A TOOL FOR DIGITAL MONITORING OF VETERINARY AND PRODUCTION INDICATORS IN BROILER CHICKENS

This paper presents the developed Android-based application **"Broiler Farm Manager"**, designed for the systematization and analysis of veterinary and production indicators during broiler chicken rearing.

Keywords: veterinary monitoring, digitalization, livestock farming, productivity, information system, AI.

Modern industrial poultry production is characterized by the high growth intensity of broiler chickens belonging to commercial high-performance crosses. Under conditions of intensive metabolism, even short-term disturbances in microclimate parameters, technological management protocols, or feeding regimes may result in technological stress, reduced resistance of the birds, and impaired flock survival [1]. At the same time, a considerable proportion of poultry farms still rely on fragmented paper-based records or local electronic spreadsheets, which complicates timely access to comprehensive data directly within production facilities [2].

The modern concept of Precision Livestock Farming (PLF) is based on the use of digital tools for continuous data collection and analysis in order to support evidence-based management decisions. In poultry production, such solutions are primarily regarded as platforms for monitoring the physiological condition, welfare, and productivity of livestock [3]. Within contemporary approaches, particular importance is attributed not only to the isolated recording of individual parameters, but also to their centralized integration within a single information system, including the combination of data on feed and water consumption, microclimate parameters, and body weight dynamics [4].

The aim of this study was to substantiate the prospects and functional capabilities of using the mobile application «Broiler Farm Manager» as a specialized digital tool for veterinary and production monitoring in industrial broiler chicken production.

«Broiler Farm Manager» was designed according to a modular principle using a mobile architecture that enables primary recording of production parameters by the operator directly inside the poultry house, followed by synchronization of the data for analysis and long-term storage.

The initial stage of operation involves mandatory registration and characterization of the production facility. This includes entering the technical characteristics of the poultry house and technological equipment, as well as the initial registration of the bird flock, including cross, age, number of birds placed, and feed deliveries. On a daily basis, the operator records mortality and

culling dynamics, including diagnoses verified by a veterinarian, control body weight, actual feed and drinking water consumption, as well as key microclimate parameters, including temperature and relative humidity (Fig. 1).

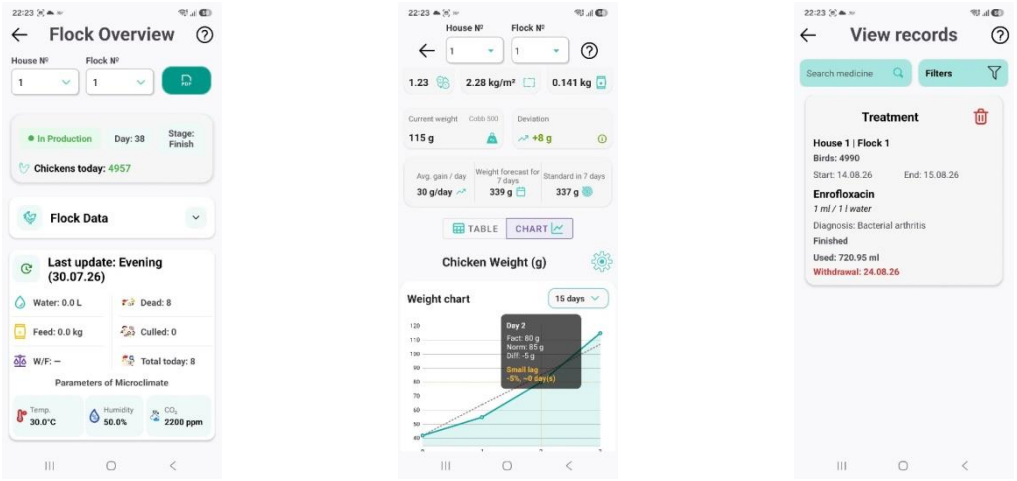

Fig. 1. **Modular structure of the "Broiler Farm Manager" mobile application.**

The functional modules of the application provide individualized recording of specific preventive measures, including vaccination, therapeutic and prophylactic interventions, sanitation and disinfection of poultry houses, as well as the movement and use of feed and veterinary medicinal products. Integration of the veterinary module with the inventory management module prevents the entry of incorrect records regarding the use of pharmacological products that are not available in the farm inventory, thereby increasing the transparency and traceability of veterinary drug use.

A key analytical component of the system is the formation of a digital flock record. Linking individual records to a specific flock and poultry house makes it possible to assess parameters over time and compare them with reference standards for the respective commercial cross and age of the birds. For a veterinarian, an isolated change in a single indicator does not always represent a pathognomonic marker of disease. However, a simultaneous deviation in several interrelated indicators – for example, a sudden decrease in water consumption accompanied by an increase in ambient temperature or a change in the water-to-feed ratio – may serve as an early signal of a preclinical disturbance of homeostasis requiring immediate clinical examination of the flock.

The developed system is not intended to replace the professional activities of a qualified veterinarian but rather to function as a Clinical Decision Support System (CDSS) by structuring and providing rapid visualization of diagnostically relevant data. A promising direction for the further development of "Broiler Farm Manager" is the implementation of direct real-time data integration with automated microclimate monitoring stations and electronic weighing systems using Internet of Things (IoT) protocols.

Conclusions. The centralization of technological, veterinary, and zoohygienic indicators within the "Broiler Farm Manager" application enables the formation of a continuous digital history of the flock throughout the entire broiler production cycle. Comprehensive comparison of flock survival, body weight, water and feed consumption data with veterinary intervention protocols facilitates the early detection of technological and biological risks and contributes to the optimization of veterinary monitoring in industrial poultry production.

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