products; clean profit from their production and use; increasing productivity; payback period and the like.

Economic subsystem of the economic mechanism of production management is a set of economic methods, forms, methods, criteria, which are economic processes and phenomena with the development of production.

References

1. The organizational and economic mechanism of innovative development of enterprise [Electronic resource]. – Mode of access: – https://booksforstudy.com/Innovation management/ – Date of access: 23.04.2020.

2. Economic Efficiency as an assessment of a wide range of things [Electronic resource]. – Mode of access: - https://fee.org/articles/economic-efficiency – Date of access: 23.04.2020.

UDC 621.431

LIVESTOCK FARMING WITH CARE: AN INTEGRATED AND CUSTOMIZED APPROACH AND TECHNOLOGICAL PERSPECTIVES

Master Degree Student – Liashok O.N., BMF;
Student – Akudovich N.S., 37 ts, 3d year, TSF
Scientific supervisor – Goroshchenya Z.M., senior teacher
EI «Belarusian State Agrarian Technical University», Minsk, the Republic of Belarus

Abstract. The article describes integrated and customized approach and technological perspective in livestock farming. It highlights precision livestock farming mechanism allowing real time livestock management focused on the intensification of production.

Keywords: precision livestock farming, intensive system, productivity, information technology, livestock management.

The concept of “Livestock Farming with Care” should not be applied as a global standard for livestock production, but has to be customized to the diversity of farming and production systems related to the various socio-cultural traditions and environmental constraints.

The main function of livestock farming in the Western world is production of animal-source food. The majority of these animals are kept in large-scale, intensive systems (i.e. high animal productivity per unit of land, labour or capital). In developing countries, however, mixed crop-livestock systems produce the majority of the cereal and livestock domestic products. The majority of

these mixed-crop livestock systems are small-scale, also referred to as smallholder systems. Livestock in these smallholder systems often fulfil additional functions to food production: e.g. fertilizer, traction and cost reduction.

There is no single solution (e.g., intensification) for achieving a sustainable supply of animal-source food. Basic solutions for an issue involving a trade-off with regard to any of the four areas mentioned previously, requires a more comprehensive and synergistic approach. For example, strategies aimed at improving layer hen or broiler welfare in conventional intensive systems, can increase land use requirements and emissions of greenhouse gasses (GHGs) within the production chain. Therefore, improvement of welfare together with environmental performance often requires an innovative adjustment at the system level.

Although increasing the productivity per animal can be useful in, certain areas, i.e. pasture-based beef production systems in Central America, this is less desirable from an animal welfare perspective in intensive broiler production system in the Netherlands. A smallholder in Sub-Saharan Africa might benefit more from increasing the survival rate of his stock, than from improving the productivity of his animals, as the number of animals is economically more important than their productivity. These considerations will result in different breeding and feeding strategies, tailored towards local conditions and incorporating both tangible and intangible benefits for animals.

Feeding the world with regard for our sustainable responsibility, therefore, should be directed to integrated and customized solutions built on the various strengths of the diversity in production systems worldwide.

Major innovations are anticipated within the domains of nanotechnology, genomics and information technology. These modern technologies have also become available for livestock farming, implementing the driving forces in ICT (computing power, wireless sensing, location awareness, internet access).

Inspired by precision agriculture, a farming practice of Precision Livestock Farming (PLF) is under development. PLF makes it possible to implement real time livestock management, conform the guidelines of “Livestock Farming with Care”, by allowing for the individual variation of animals within a herd, the spatial and temporal variation in conditions, and an integrative environmental, health and safety performance on farm. ICT based precision livestock farming allows farmers to address the needs of individual animals whenever or where ever it is needed. The animals are perfectly capable of asking for this attention, all the humans have to do is to learn to understand their signals.

The social innovation is that the farmer will have the tools to be transparent in providing the appropriate care for the individual animal assuming that the farmer becomes familiar with the signs of individual animals. This transparency then becomes part of the whole production chain and is not limited to a specific farming type or region. The actual “Credible Performance” with respect to “One Health, Customized Care and No Nuisance” can be recorded and traced in food chain quality assurance systems.

The international development of PLF technology will provide the tools for the necessary real time data acquisition and handling. The information technology tools can be differentiated between sensing ("extra eyes, ears and noses" by telemetries, sensor technologies and deductive tracers), data handling and storage techniques (web-based, wireless, broadband, Internet of the Future), dynamic decision support modelling ("extra brains" by smart computers and models) and manual or robotic implementation of routine decisions. The information gathered in precision livestock farming serves tracking and tracing opportunities in a transparent quality control of the whole chain of custody from farming up to retail. Prerequisite is to consider the social and political acceptance of the PLF methodology.

References

1. Livestock farming with care: an integrated and customized approach and technological perspectives [Electronic resource]. – Mode of access: – https://www.sciencedirect.com/science/article/pii/s15735214130001/ – Date of access: 27.04.2020.

2. The concept of livestock farming with care [Electronic resource]. – Mode of access: – https://www.sciencedirect.com/science/article/pii/s15735214130001 – Date of access: 27.04.2020.

3. The role of new technologies in global food security: Improving animal production efficiency and minimizing impacts [Electronic resource]. – Mode of access: – https://academic.oup.com/af/article/3/3/4/463863 – Date of access: 27.04.2020.

UDC 631.173

PREVENTATIVE MAINTENANCE FOR EXTENDING MACHINERY LIFE

Students – *Hlystun S.A., 42 ts, 1st year, TSF;*
Machulskaya K.I.,16 im, 2d year, BMF
Scientific supervisor – *Lybochko I.A., senior teacher*
EI «Belarusian State Agrarian Technical University»,
Minsk, the Republic of Belarus

Abstract. The article describes four strategies for farm machinery maintenance.

Keywords: preventative maintenance, lubrication maintenance, cleaning, recordkeeping.

A complete line of machinery is one of the largest investments that a farm business can make. Machinery must be constantly monitored, maintained, and eventually replaced.