УДК 631.23

Омачону Кема Соломон,
магистрант, Байкальский государственный университет, Нигерия,
e-mail: kemasolomon@gmail.com
Свердлова Ольга Леонидовна,
к.т.н., доцент, Ангарский государственный технический университет,
e-mail: olgasv273@mail.ru

РОЛЬ ПАРНИКОВ И ТЕПЛИЧНЫХ КОНСТРУКЦИЙ В КРУГЛОГОДИЧНЫХ СЕЛЬСКОХОЗЯЙСТВЕННЫХ РАБОТАХ

Omachonu Kema Solomon, Sverdlova O.L.

GREENHOUSE FARMING AND ITS IMPORTANCE

Аннотация. В работе рассматриваются функциональные особенности парниково-тепличных конструкций и их значение во всесезонном земледелии.

Ключевые слова: тепличное земледелие, сельское хозяйство, круглогодичное и внесезонное выращивание тепличных культур и рассады, отапливаемые и автономные парники.

Abstract. The article examines the functional characteristics and significance of greenhouse farming.

Keywords: greenhouse farming, agriculture, cover materials and climate-control systems, year-round and off-season cultivation of greenhouse crops and seedlings, heated and autonomous greenhouses.

The transformation of the agricultural and food sector is an important contributor to employment generation in rural areas of low-income generating countries. Although, little to no focus has been taken to the question of how technology affects the quality and quantity of employment in this sector.

Greenhouse (commonly referred to as glasshouse, hothouse, screen house, shade house and crop top structure) is a system for modifying and controlling environmental factors to artificially create a favorable climate for the plants development and growth.

Greenhouse farming enhances growing conditions, protects the crops from adverse weather effects, pests and diseases, and enables effective crop management. In the 17th – mid 19th century, greenhouses were commonly made of brick or timber with normal proportion of window space and some means of heating.

Greenhouses are important in agriculture, horticulture and botanical science. The modern greenhouse is usually a glass or plastic enclosed frame structure, used for the production of fruits, vegetables, flowers and any other plants that require controlled environment for its survival. Components such as cover materials, climate-control systems, and irrigation and fertilization equipment are regularly evaluated by growers, designers and researchers, to improve their efficiency, lower inputs, and reduce undesired environmental effects [4].

There are different types of greenhouses, however, Polyethylene sheets, fiberglass, transparent and semi-transparent covers are commonly used as covering materials, while the framework typically consists of aluminum, galvanized steel or wood such as redwood, cedar, or cypress. A greenhouse can become too hot or cold, some type of ventilating system is usually needed to provide optimum environment for growth and production of given plant. The plants cultivated in greenhouses fall into several broad categories based on their temperature requirements during nighttime hours. For example, in a cool greenhouse, the nighttime temperature drops to approximately 7-10°C. Among the plants that thrive in cool greenhouse are azaleas, cinerarias, cyclamens, sweet peas, and various types of bulbous plants like irises, tulips, and narcissi.

In Nigeria and other part of the world, Greenhouse farming is the business of working on and managing the growing of crops and plants inside a greenhouse. The introduction of greenhouses in crop production has been recognized as one approach to mitigating the impacts of climate change on crop yields.

Ale M.O. designed and constructed a greenhouse for the evaluation of the performance of Okra in the Sahel region of Ondo State, Nigeria. Results revealed that greenhouse has potential to improve the growth performance Okra while inorganic fertilizer has no significant influence of the yield of okra fruit [1].

Omobowale M.O. reported that sustainable agriculture is critical towards paving a way for year-round production and supply of food. To this, cultivation in controlled environments using functional and durable greenhouse structures presents an option [3].

Fedotova G.V. assessed the current state of Russia's agricultural sectors in the context of restrictive sanctions and food embargo. Their attention focused on the need to intensify the production of agricultural raw materials for domestic consumption and export to the world market. The experience of developed countries revealed that the implementation of advanced information technologies into traditional agrobusiness processes makes it possible to increase the profitability of agricultural sectors [2].

Greenhouse has evolved from its status as it was in the 17th century to current trend involves integrating Information Communication Technology (ICT), Internet of Things (IoT), drones, and hydroponics. The common disadvantage of drudgery, timelineness, accuracy and precision, etc. hither-to witnessed in greenhouse farming have been transformed to become advanta-geous features through current technology trends. Greenhouse technology in agriculture for research and commercial production purposes has been in existence and continues to be useful in the production and study of choice plants; prevented from the influence of the environment and effects of diseases and pests. Literature supports the employment of greenhouses

coupled with the appropriate irrigation systems in the study and production of any selected crop(s).

ЛИТЕРАТУРА

1. **Ale, M. O.** Design and construction of a Greenhouse for evaluation of the performance of Okra in the Sahel region of Ondo State, Nigeria / J. A. Akinyoola, A. J. Fawohunre, A. T. B. Aderibigbe. – DOI:10.21474/IJAR01/9625. – Text: electronic // International Journal of Advanced Research (IJAR). – 2019. – 7 (9). – P. 24-31. URL: http://www.journalijar.com – Date of publication: 11AR, 2019.

2. **Fedotova, G. V.** Trends of Scientific and Technical Development of Agriculture in Russia, In: Digital economy: Complexity and Variety versus Rationality. Lecture notes in Networks and Systems 87 / I F. Gorlov, A. V. Glushchenko, M. I. Slozhenkina, A. K. Natyrov. – DOI: 10.1007/987-3-030-29586-8_23. – Springer Nature Switzerland AG, 2020. – P. 193–200. – Text: electronic. – URL: https://www.researchgate.net/publication/335829881 (accessed: 12 January 2026).

3. **Omobowale, M. O.** Evaluation of a low-cost Greenhouse for controlled environment cultivation of sweet pepper. – Text: electronic // Arid Zone Journal of Engineering, Technology & Environment, AZOJETE. – 2020. – Vol. 16 (1). – P. 28 – 36. URL: https://www.researchgate.net.

4. **Samapika, D.** Green-houses: Types and Structural Components / T. Barsha, M. Smaranika, S. Basabadatta, B. P. Jnana. – DOI:30954/NDP-PCSA.2020.2. – Text: electronic // In: Protected Cultivation and Smart Agriculture edited by Sagar Maitra, Dinkar J Gaikwad and Tanmoy Shankar. New Delhi Publishers, New Delhi. – 2020. – P. 09 -17. – URL: https://www.researchgate.net (accessed: 12 January 2026).