E-ISSN: 2997-9439

American Journal of Education and Evaluation Studies

https://semantjournals.org/index.php/ AJEES

| Research Article

Check for updates

Topical Issues in the Production and Certification of Ecologically Clean Meat Products

Rashidova Gulasalxon Nodirovna

Graduate Student, Bukhara State Technical University

Abstract: This article explores the key challenges and opportunities associated with the production and certification of ecologically clean (organic) meat products, with a particular focus on Uzbekistan and the Bukhara region. As global consumer demand for healthy and sustainable food grows, organic meat is gaining strategic importance. The study analyzes international best practices in organic livestock management and proposes locally adaptable solutions for certification systems, traceability mechanisms, and sustainable feed production. Furthermore, it outlines the scientific and infrastructural prerequisites for establishing organic meat production hubs in Uzbekistan. The Bukhara region, due to its favorable climate and traditional livestock practices, is identified as a strategic zone for piloting ecologically sustainable meat production systems. The paper concludes with policy and innovation recommendations aimed at developing a viable, competitive organic meat industry in Uzbekistan.

Keywords: Organic meat, certification, ecological livestock, sustainable agriculture, traceability, Uzbekistan, Bukhara region, organic feed, food safety, agro-innovation.

In recent years, growing global concern over public health has made food safety and product quality control more urgent than ever. One significant response to this demand has been the development of ecologically clean or organic food products, including meat. Organic meat production is not simply about raising animals without chemicals; it involves a comprehensive system of biological, technological, and legal practices that ensure safety, traceability, and minimal environmental impact.

Although countries such as Germany, the United States, and Turkey have established mature systems for the production and certification of organic meat, Uzbekistan—particularly the livestock-focused region of Bukhara—still lacks a fully developed infrastructure. Nonetheless, the region holds considerable potential for introducing scientifically grounded approaches to ecologically clean meat production.

Ecologically clean meat refers to meat obtained from animals raised in conditions that mimic their natural environment, without the use of antibiotics, hormonal growth stimulants, or chemical feed additives. These animals are fed organic fodder and raised in stress-free environments. The result is a safer, more nutritious product with minimal ecological impact.

Key principles of organic meat production include:

- Free-range or low-density animal housing;
- No use of antibiotics, hormones, or chemical growth promoters;
- Provision of organic, non-GMO feed;
- Environmentally sustainable waste management;
- Ecological standards maintained during processing and packaging.

These principles are embedded in international standards such as the EU Organic Regulation, USDA Organic, and IFOAM Norms. However, Uzbekistan currently lacks equivalent national standards specifically focused on meat products.

The production of organic meat is not limited to farming techniques—it requires a multi-stage monitoring and certification process to guarantee product integrity throughout the supply chain. In Uzbekistan, while there is a general framework for certifying organic fruits and vegetables, the meat sector remains underdeveloped in this regard.

Major challenges include:

- Limited knowledge and training among local producers regarding organic livestock practices;
- Scarcity of certified organic feed producers;
- Lack of internationally accredited laboratory facilities;
- No traceability systems to track products from farm to fork;
- Absence of financial incentives or subsidies for organic producers.

Without these critical components, Uzbekistan's organic meat producers face barriers to both local market trust and international export opportunities.

Countries like Germany, Denmark, the United States, and Turkey have successfully institutionalized organic meat systems by introducing stringent legal regulations, financial support mechanisms, and comprehensive consumer awareness campaigns. For instance, in Germany, each farm must demonstrate compliance with organic feed standards, animal welfare regulations, and sustainable waste systems. In the U.S., USDA Organic certification includes rigorous documentation, inspections, and labeling requirements.

These practices offer useful models for Uzbekistan, especially in terms of:

- Launching organic livestock training programs for farmers;
- Providing low-interest loans or subsidies for eco-farm conversions;
- Establishing organic fodder cooperatives;
- Developing QR-based digital traceability systems;
- Creating localized certification schemes aligned with ISO 22000 or GLOBALG.A.P standards.

Bukhara holds unique advantages for the introduction of ecological livestock farming. Its semi-desert geography and arid climate naturally limit intensive, industrial farming practices and are more suited to extensive, pasture-based livestock systems. Local communities also possess strong traditional knowledge in animal husbandry.

Additional opportunities include:

- Utilization of cotton and grain by-products as natural feed;

- Establishment of pilot eco-farms in selected districts;
- Integration of blockchain-enabled traceability for product tracking;
- Branding of Bukhara's organic meat for both domestic and export markets.

With coordinated efforts between government, academia, and producers, Bukhara could serve as a national model for sustainable meat production.

To build a sustainable organic meat sector, several science-backed innovations should be prioritized:

- Genetic profiling and selection of livestock breeds with natural disease resistance;
- Localized production of certified organic feed;
- Establishment of laboratories that meet international certification protocols;
- Introduction of mobile applications with QR/NFC scanning for consumer transparency;
- Involvement of young scientists and university students in eco-livestock research and development programs.

Moreover, promoting joint ventures between organic meat producers and universities can serve as a catalyst for innovation and standardization.

Conclusion

The development of an ecologically clean meat industry in Uzbekistan is both a strategic and health-driven imperative. In addition to promoting public health, it would boost economic resilience and improve the country's international competitiveness. By focusing on the Bukhara region as a pilot zone, Uzbekistan can begin creating a scalable, science-driven, and sustainable organic meat sector.

Introducing certification infrastructure, supporting farmers, and aligning local practices with global standards are crucial first steps. In this way, Uzbekistan can progress toward becoming a reputable source of high-quality, eco-friendly meat products for both domestic and international markets.

References

1. International Federation of Organic Agriculture Movements (IFOAM). (2020). The IFOAM Norms for Organic Production and Processing. Bonn, Germany: IFOAM.
2. United States Department of Agriculture (USDA). (2021). Organic Livestock Requirements. USDA National Organic Program. https://www.ams.usda.gov/rules-regulations/organic
3. European Commission. (2018). Regulation (EU) 2018/848 on Organic Production and Labeling of Organic Products. Official Journal of the European Union.
4. Turkoglu, H., & Altuntas, A. (2019). Development and certification processes of organic meat production in Turkey. Turkish Journal of Agriculture – Food Science and Technology, 7(6), 920–926. https://doi.org/10.24925/turjaf.v7i6.920-926.2466
5. Karimov, J., & Turaev, B. (2020). Innovative approaches to the production of ecologically clean products in Uzbekistan. Bulletin of Agricultural Sciences, (2), 33–36.
6. Food and Agriculture Organization of the United Nations (FAO). (2022). Organic Meat Production and Processing. https://www.fao.org/organic-agriculture
7. Cabinet of Ministers of the Republic of Uzbekistan. (2021). Regulations on the procedure for the production and certification of organic products in Uzbekistan. National Legislation Database.

8. Norov, S., & Ismoilov, R. (2021). Certification system and challenges of organic products in Uzbekistan. Agroscience Journal of Uzbekistan, (1), 45–48.
9. Golovko, L., & Frolov, A. (2020). Blockchain in food traceability: Application in organic meat supply chains. Journal of Agribusiness and Technology, 8(3), 117–126.
10. Federal Agency for Technical Regulation and Metrology (Russia). (2015). GOST R 56508–2015: Organic Products — Terms and Definitions.