

Article

# Organization of Breeding Work on Farms and Artificial Insemination of Animals Based on Modern Technology

**Tirkashev Latibjan Yakubjanovich**

Andijan Institute of Agriculture and Agrotechnologies, Uzbekistan

\*Correspondence: -

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**Abstract:** The scientific article discusses the problems of providing the population of Uzbekistan with high-quality and nutritious livestock products (milk, meat, etc.), the problems of providing the rapidly growing population of the Republic of Uzbekistan with high-quality and affordable food products, clothing and their solutions, the Presidential Decrees on increasing the production of livestock products necessary for citizens in their daily lives, the Strategy of the Republic of Uzbekistan for ensuring food security and healthy nutrition until 2030, the introduction of effective economic and environmental management systems for the use of natural, financial and material resources for food security and a healthy and active life for all segments of the population, as well as regulatory and legal documents used in maintaining primary zootechnical documentation in breeding and commodity farms, and the correct organization of accounting, including the accounting of accumulated feed (hay, straw, straw, etc.) and a journal for recording the receipt of feed purchased from abroad (mixed feed, kunjara, shelukha, bran, etc.), a journal of accounting for all expenses incurred on feed (forage) in a livestock farm, a journal of accounting for all medicines, vaccines and other necessary veterinary medicines purchased and used for the farm, a journal of accounting for newborn calves on the farm (invoice), a journal of accounting for calves and other groups of animals purchased from other farms and sold to other farms, a journal of accounting for daily milk, a journal of controlled milking on a farm or complex, a register and waybill for sending milk to a milk processing plant, a register for animals sent from the farm to a meat processing plant, a journal of breeding and registration of female animals that have come to term at an artificial insemination point, a journal of animal certification on the farm, an annual report journal (form-24) kept on the farm, a journal of compulsory slaughter of sick animals and their registration journal, employee medical examination journal, livestock equipment accounting journal (various agricultural machinery and vehicles, feed spreaders, feed grinders, feed mixers, feed loaders, cargo carts, etc.) and the timely registration and storage of documents such as "Breeding female body sheet" - form MOL-1, "Cow productivity record card" 2nd milk q.x. form, form MOL - 2 and "Cow calving and calving record sheet" SU - 12 q.x. form, form IO - 12) are discussed and explained on the basis of practical research. The article expresses opinions on the conditions for proper feeding, keeping and care of breeding cattle on a farm, the correct organization of breeding work, the effective use of selection achievements, the improvement of local breeds as a

result of selection and breeding work, the creation of new systems, as well as the relevance and importance of using artificial insemination on farms. The research will be conducted in three stages at the “Turgunbay chorvasi” breeding farm in the “Gudur” MFY in the Izbaskan district of Andijan region. In addition, the origin, constitution, condition and exterior indicators of Swiss breed heifers and cows of Austrian selection imported to this farm in 2021 will be studied, as well as their acclimatization, productivity, and quality of offspring will be assessed and relevant conclusions will be drawn.

**Keywords:** Food products, food safety, healthy eating, financial and material resources, economic and environmental management systems, risk, selection and breeding work, artificial insemination, zootechnical documents, zootechnical calculation work, selection achievements, Austrian selection, Swiss breed, Holstein breed, heifers, grandchildren, feed, feed, autumn-winter, constitution, conditioning, exterior, systems and immunity.

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## Introduction

According to the Statistical Agency under the State Statistics Committee of the Republic of Uzbekistan, the permanent population of the Republic of Uzbekistan as of December 9, 2024 was 37 million 535 thousand 605 people. The population of Uzbekistan increased by an average of 61.7 thousand people each month in 2024. That is, the number of permanent population increased by an average of 2 thousand people each day of this year. Such statistical data inevitably makes experts think. The reason is that various problems may arise in providing the rapidly growing population with food, clothing, etc. To find solutions to problems, it is necessary to have a perfect and well-developed system (structure). It is not easy to provide the growing population with the food products (potatoes, carrots, onions, flour, pasta, rice, sugar, oil, etc.) necessary for their daily lives, as well as livestock products (milk, meat, eggs, fish, honey, etc.). To this end, increasing the number of dehqan farms specializing in fruit and vegetable growing, viticulture and gardening, as well as organizing the work of farms and clusters specializing in the production of livestock products at the required level will provide practical assistance in solving the above-mentioned problems. [1, 2]

Our esteemed President Sh.M.Mirziyoyev is constantly taking care of the uninterrupted provision of the population with food products, clothing, etc., and is adopting important laws, resolutions and decrees to support the population. In particular, on January 23, 2025, the Law “On Food Safety” was discussed at the Plenary Session of the Senate of the Oliy Majlis of the Republic of Uzbekistan. This law serves to unify and systematize the norms regulating relations in the field of food safety in our country into a single document, and to provide comprehensive legal regulation of relations in this area. [3, 4] Also, on January 30, 2025, the Decree of the President of the Republic of Uzbekistan Sh.M.Mirziyoyev No. PF-16 “On the implementation of the State Program “Uzbekistan-2030” in the year “Environmental Protection and Green Economy” was adopted.

In addition, the President of the Republic of Uzbekistan Sh.M.Mirziyoyev On February 16, 2024, adopted the Decree No. PF-36 “On Additional Measures to Ensure Food Security in the Republic”. The Strategy of the Republic of Uzbekistan for Ensuring Food Security and Healthy Nutrition until 2030 was also approved by Appendix 1 to the Decree of the President of the Republic of Uzbekistan No. PF-36 dated February 16, 2024. The introduction of effective economic and environmental management systems for the use of natural, financial and material resources to ensure food security and healthy nutrition and to enable all segments of the population to live a healthy and active life was identified as one of the priority areas of the Strategy. [5]

By the end of 2025, it is planned to develop an integrated interdepartmental National Information Platform to sustainably develop capacity in the field of food safety and consumption, identify, assess, manage and monitor risks, and organize early warning of risks.

## Materials and Methods

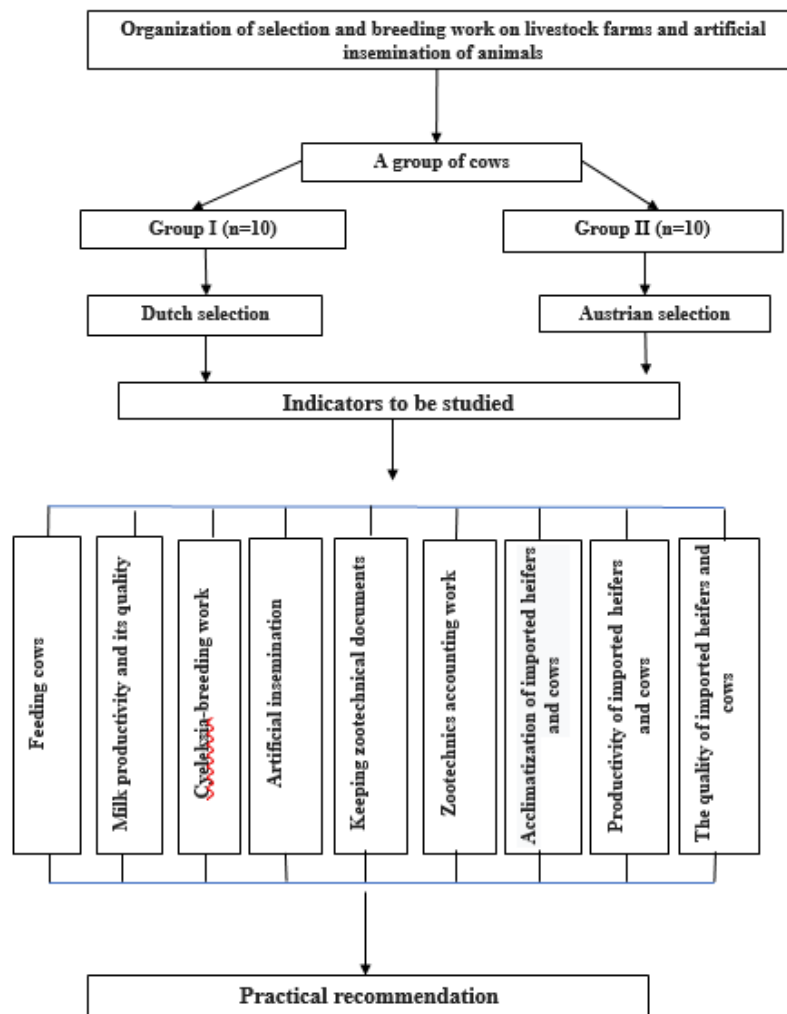
The research methodology is structured to evaluate the organization of selection-breeding work and modern artificial insemination techniques across three progressive stages at the "Turgunboy chorvasi" breeding farm in the Izbaskan district of Andijan region. The study monitors two distinct experimental cohorts consisting of imported cattle: Group I, comprising Swiss breed heifers and cows of Austrian selection imported in 2021, and Group II, consisting of Dutch selection Holstein Friesian cattle. A comprehensive analysis is conducted on various physical and zootechnical indicators, including the animals' feeding conditions, acclimatization patterns, origin, constitution, conditioning, and exterior traits. Furthermore, the study tracks dairy productivity—measuring parameters such as daily milk yield and milk fat percentage—alongside assessing the overall quality, live weight, and growth performance of the generated offspring. Alongside biological evaluations, the methodology integrates a rigorous review of farm management practices by auditing primary zootechnical calculation work and recording systems. This includes monitoring compliance with standardized legal and regulatory documentation, specifically analyzing the systematic maintenance of breeding female body sheets (Form MOL-1), cow productivity record cards (Form MOL-2), and cow calving and record sheets (Form SU-12 and Form IO-12). Through the synchronization of these biological, reproductive, and administrative metrics, the methodology evaluates how structured breeding practices and high-quality semen utilization drive genetic improvement and economic growth within local livestock populations.

## Results and Discussion

The implementation of the above-mentioned laws, resolutions and decrees imposes enormous tasks and tasks on scientists and specialists. Therefore, we, livestock breeders, must also contribute to the implementation of the Strategy of the Republic of Uzbekistan for Ensuring Food Safety and Healthy Nutrition until 2030. This, of course, requires the organization of selection and breeding work at a high level in farms, using modern methods, applying artificial insemination on farms, maintaining zootechnical documentation and accounting, and establishing effective use of selection achievements. [6, 7] It is important to study the acclimatization, productivity, and quality of offspring of heifers and cows imported from foreign countries to the republic, as well as to the regions of the Fergana Valley. All of the above are the main tasks of specialists.

Taking into account that the research will be conducted in 2025-2028, we familiarized ourselves with the indicators to be studied and formed a research scheme (Figure 1).

Figure 1. Image of studies



In order to develop livestock breeding in the Fergana Valley, including Andijan region, at the level of modern requirements, we planned to carry out scientific and research work at the “Turg’unboy chorvasi” breeding farm located in the Izbaskan district of Andijan region.

First, we got acquainted with the conditions of the “Turg’unboy chorvasi” breeding farm. The breeding farm is located in the Yakkatut rural municipality in the Izbaskan district of Andijan region, bordering the Namangan region. A total of 180 cattle are kept on the farm. Of these, 100 are Swiss cows of Austrian selection. [8, 9, 10]

The remaining 80 cows are animals of other groups (partly black-and-white).

From 2016 to 2021, Holstein cattle were bred on the farm. Later, since 2021, Swiss cattle of Austrian selection were imported. Therefore, currently, the farm has Swiss cattle of Austrian selection and partly black-and-white Holstein Friesian cattle.

Before starting the research, we met with the head of the breeding farm, Temirov Khoshimjon, the farm manager, Nabijonov Avazbek, and the chief zootechnician of the farm, Akayev Bakhtiyorjon.

Later, we studied the feed and fodder stored for feeding the existing cattle being bred on the breeding farm. It turned out that the farm has prepared more than 3,000 tons of corn silage, about 50 tons of mixed fodder (combi-forma), 10 tons of mixed fodder, 10 tons of meal, 10 tons of kunjara, 50 tons of beets, and 100 tons of various grass hay for the autumn-winter season of 2024-2025.

We also got acquainted with the productivity of the cows raised on the farm and its quality. Today, 600 kg of milk is being produced from 24 dairy cows. [11, 12] Milk fat is 3,6%. Dairy cows are milked 3 times, and the daily milk yield is 25-30 kg.

The live weight of calves born from heifers initially brought to the farm was 30-40 kg at birth. Since the live weight of newborn calves is high and they are healthy and mobile, they are fattening well and growing quickly. [13]

During the research, we got acquainted with the organization of selection and breeding work on the farm and the methods of artificial insemination being carried out. Breeding work on the farm is organized correctly, and semen from bulls imported from abroad, evaluated for the quality of their daughters, is used for artificial insemination. Female animals that have arrived at the farm are identified in a timely manner and are being bred using artificial methods. [14, 15] All information is being recorded in the journal for registering inseminated animals. The farm manager, Avazbek Nabijonov, and the chief zootechnician of the farm, Bakhtiyorjon Akayev, are maintaining zootechnical documents and conducting zootechnical calculations at the required level. To date, the above-mentioned work on the subject has been completed on the farm.

The next stage of the research will assess the acclimatization, productivity, and quality of heifers and cows imported to the farm, as well as the quality of the offspring obtained from them.

## Conclusion

Due to the proper feeding, care and maintenance of the livestock on the farm, their productivity increases year by year, and their constitution, condition and exterior are becoming very good. Artificial insemination is widely used in the farm to breed farm animals. As a result of the proper organization of breeding work, the effective use of artificial insemination, as well as the correct maintenance of zootechnical documentation and accounting, economic growth is observed on the farm.

It is worth noting that as a result of replenishing the cattle herd on the farm with highly productive and pedigree animals, applying modern technologies for breeding farm animals, effectively using artificial insemination, and properly organizing selection and breeding work with existing breeds, existing breeds will be further improved and even more highly productive systems will be created in the future. Also, the resistance (immunity) of animals to various diseases will increase, and very significant positive changes will be achieved in their productivity, constitution, and exterior indicators. Conclusion. Due to the proper feeding, care and maintenance of the livestock on the farm, their productivity increases year by year, and their constitution, condition and exterior are becoming very good. Artificial insemination is widely used in the farm to breed farm animals. As a result of the proper organization of breeding work, the effective use of artificial insemination, as well as the correct maintenance of zootechnical documentation and accounting, economic growth is observed on the farm.

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