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Eureka Journal of Agricultural Science & Bio-Innovation (EJASB)

ISSN 2760-4969 (Online) Volume 2, Issue 4, April 2026

https://eurekaoa.com/index.php/7

TASKS OF CITRUS BREEDING SCIENCE IN UZBEKISTAN

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Abstract

In the climatic conditions of Uzbekistan, the limonaria greenhouse of the Kibray District of the Tashkent region is under laboratory conditions.Based on the methods used by Z.Fakhruddinov's selection work, new native plant varieties of lemons were prepared, adapted to climatic conditions, as well as developed improved styles and created new varieties of high-yielding, stress-resistant, citrus plants, hybridization with local varieties, by welding and artificial cross-dressing, it was possible to select shapes and create on their basis competitive new varieties that are resistant to disease, rich in fertile sweet vitamins.

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Keywords: Citrus, plant, varieties, climate, greenhouse laboratory, disease, sehosility, cultural varieties, durable

Introduction

Special attention is being paid to the cultivation of edible and medicinal fruits such as lemons, oranges, mandarins, and grapefruits in the republic. In this regard, numerous studies have been conducted and certain results achieved on cultivating high-yield, export-oriented citrus plants in open fields and unheated greenhouses. In the agricultural section of the 30th objective of the "New Uzbekistan Development Strategy for 2022–2026," "... the cultivation of export-oriented products and the development of horticulture, by tripling the area of intensive orchards and doubling the number of greenhouses, increasing export potential by another 1 billion US dollars"2 is singled out as one of the priority tasks. Therefore, expanding varietal diversity under protected structures, conducting a series of scientific and practical studies on their agro-biological characteristics, breeding methods, developing intensive cultivation technology, and determining the biochemical composition of the fruits is considered urgent. "Before beginning practical work on citrus breeding," said Uzbek breeder Z. Fakhriddinov, "one must first have a good knowledge of the natural assortment. It should serve as the initial material for future variety improvement." Citrus breeding is the science of creating new varieties, a term that means "selection" or "separation." Today, the word "breeding" has a much broader meaning, and modern scientific methods, such as Z. Fakhredinov's, are used.

Main Part

The object of the science of citrus varietology is the citrus variety. Today's citrus varietology examines the variety from every angle. The primary task of varietology is to study citrus varieties from an agro-biological perspective and to utilize them in agricultural production. The useful economic characteristics of

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each citrus variety depend not only on its hereditary traits but also on external environmental conditions. One of the important tasks of citrus varietal science is to study the formation and variability of useful economic traits in citrus varieties under the influence of the external environment. For this reason, citrus varieties are studied under various natural greenhouse conditions, and the optimal greenhouse climate conditions for each variety are determined. At the same time, the agronomy of citrus plants is studied, and rootstocks and pollinating varieties are selected for the citrus cultivar. Analytical and synthetic methods of breeding are applied.

Alongside the variability characteristic of citrus varieties, there are also stability traits. In citrus pomology, varieties whose important economic traits remain stable and are little affected by external environmental factors are of great importance. Another important task of the science of citrus varietology is to determine the greenhouse climate conditions under which citrus varieties' traits and characteristics remain stable, and to develop methods for cultivating citrus varieties. Citrus varietology involves the study of the morphological characteristics of citrus varieties. Studies and identifies the characteristics and traits that distinguish citrus varieties from one another; imports new citrus varieties from foreign countries, tests them under the various greenhouse climate conditions of our republic, and enriches the citrus fruit crop's varietal collection; preserves existing citrus varieties in a living state along with their characteristic biological traits and morphological features; improves citrus fruit crop varieties through clone selection; studies the variability of useful economic traits of citrus cultivars under the influence of the external environment and agrotechnical measures; in citrus, to effectively utilize a citrus variety, its important biological characteristics and economic traits – the time to fruiting, yield, tolerance to winter and cold, diseases and pests, longevity of citrus trees, self-fertility, fruit flavor, commercial qualities and suitability for processing, etc.; the response of the citrus variety to agronomic practices under the recommended greenhouse climatic

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conditions for its production identifies and introduces modifications to agronomic measures; on the basis of comprehensive study and trial results, it zones citrus varieties by region and district; studies the genetic and geographical origin of citrus varieties in order to gain a thorough understanding of their hereditary characteristics and their requirements for greenhouse climatic conditions, to create a classification of citrus varieties, and to make rational use of analytical and synthetic methods in breeding.

This information helps to make effective use of citrus varieties in production.

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Conclusions

1. New local varieties of citrus plants were developed under greenhouse laboratory conditions and based on the methods used by Z. Fakhrudinov in his breeding work, adapted to climatic conditions, and improved methods were developed, resulting in the creation of new, high-yielding, stress-tolerant varieties, through cultural varieties with intraspecific and interspecific hybrids, grafting and artificial pollination enabled the selection of forms and, on this basis, the creation of new, competitive, high-yielding varieties rich in sweet vitamins and resistant to disease, and the life and work of Z. Fakhriddinov were studied.

2. The main species and varieties of cultivated citrus plants, their botanical characteristics, biological peculiarities, growing conditions and beneficial properties were studied; the possibility of creating new varieties was demonstrated, and the life and work of Z. Fakhriddinov were studied.

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3. The origin of citrus cultivars was studied, establishing that they were obtained through cross-breeding with cultural varieties and multiple selections from hybrid progeny. Their differences from control varieties in terms of yield, early ripening, disease resistance and beneficial properties were also investigated, and the life and work of Z. Fakhriddinov were studied.

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