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AGROTECHNOLOGY OF GROWING BEANS AS A SUCCESSIVE CROP IN IRRIGATED LANDS OF KHOREZM REGION

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Abstract. This article discusses the agrotechnical fundamentals of cultivating common bean as a secondary crop on irrigated lands of the Khorezm region. The study analyzes soil and climatic conditions, sowing dates, variety selection, fertilization system, irrigation practices, and factors affecting yield. It is substantiated that cultivating common bean as a secondary crop ensures efficient land use, improves soil fertility, and contributes to food security.

Keywords: common bean, secondary crop, irrigated lands, agrotechnology, Khorezm region, yield.

Annotatsiya. Mazkur maqolada Xorazm viloyatining sug‘oriladigan yerlarida takroriy ekin sifatida loviya yetishtirishning agrotexnik asoslari yoritilgan. Tadqiqotda tuproq-iqlim sharoiti, ekish muddatlari, nav tanlash, o‘g‘itlash, sug‘orish hamda hosildorlikka ta’sir etuvchi omillar tahlil qilingan. Loviyaning takroriy ekin sifatida yetishtirilishi yerdan samarali foydalanish, tuproq unumdorligini oshirish va oziq-ovqat xavfsizligini ta’minlashda muhim ahamiyatga ega ekani asoslangan.

Kalit so‘zlar: loviya, takroriy ekin, sug‘oriladigan yerlar, agrotexnika, Xorazm viloyati, hosildorlik.

Аннотация . В данной статье освещены агротехнические основы возделывания фасоли в качестве повторной культуры на орошаемых землях Хорезмской области. В ходе исследования проанализированы почвенно-климатические условия, сроки посева, выбор сортов, система удобрений, орошение, а также факторы, влияющие на урожайность. Обосновано, что возделывание фасоли как повторной культуры способствует эффективному использованию земельных ресурсов, повышению плодородия почвы и обеспечению продовольственной безопасности.

Ключевые слова: фасоль, повторная культура, орошаемые земли, агротехника, Хорезмская область, урожайность.

Introduction

Efficient use of land and water resources in agriculture is one of the most pressing issues today. Especially in regions such as Khorezm, characterized by a sharply continental climate with hot and dry summers, increasing annual agricultural production through successive cropping is of great importance. In this regard, cultivating beans as a successive crop is economically and agro-ecologically justified. Beans have high nutritional value, are rich in protein, and possess the ability to enrich the soil with biological nitrogen, thereby creating favorable conditions for subsequent crops.

Research Object and Methods

The research was conducted on irrigated meadow-alluvial soils of the Khorezm region. The object of the study was the *Ravot* and *Mahsuldor* bean varieties. According to their mechanical composition, the soils are medium loamy with low to moderate salinity levels. The study evaluated the effects of agrotechnical practices on the growth and development of beans.

Sowing Time of Beans as a Successive Crop

Under the conditions of the Khorezm region, the most optimal time for sowing beans as a successive crop is from the second half of June to early July. After harvesting the main crop (cereal or early vegetable crops), the land should be promptly prepared for sowing.

Soil Tillage

In some regions of the republic, the field is lightly irrigated before soil tillage. Under the conditions of Khorezm, after harvesting the main crop, the soil is plowed to a depth of 28–30 cm without irrigation. Before sowing, the field is leveled, and harrowing is carried out in the evening to conserve soil moisture.





Sowing Method and Seeding Rate

On irrigated lands, beans are mainly sown using row spacing of 60 cm, 70 cm, 76 cm, as well as double-row spacing of 76 × 10 cm with precision drilling. The seeding rate averages 70–120 kg per hectare. The sowing depth should be 4–6 cm depending on soil type.

Fertilization System

Beans are highly responsive to phosphorus and potassium fertilizers. When grown as a successive crop, it is recommended to apply 60–80 kg/ha of phosphorus and 40–60 kg/ha of potassium. Nitrogen fertilizers are applied in limited amounts (20–30 kg/ha), mainly at the initial stage of plant growth.

Irrigation Regime

Under the conditions of the Khorezm region, beans are irrigated 3–4 times during the growing season. Moisture demand is particularly high during the flowering and grain-filling stages. Irrigation rates are determined based on the soil moisture condition.

Yield and Economic Efficiency

When agrotechnical requirements are fully met, beans grown as a successive crop can produce grain yields of 20–25 centners per hectare. This not only increases land-use efficiency but also provides an additional source of income.

Conclusion

Growing beans as a successive crop on irrigated lands of the Khorezm region fully corresponds to the local agro-climatic conditions. By adhering to optimal sowing dates, fertilization, and irrigation regimes, high and high-quality yields can be achieved. The ability of beans to improve soil fertility makes them suitable for wide application in crop rotation systems.

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