

The Place and Importance Of Chicken In The Crop Rotation System

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Received: 18 March 2026; **Accepted:** 24 April 2026; **Published:** 21 May 2026

Abstract: This article discusses the agrobiological and agroecological significance of pea in crop rotation systems. The biological nitrogen-fixing properties of pea, its role in increasing soil fertility, its impact on phytosanitary conditions, and its positive impact on the yield of subsequent crops are analyzed based on scientific sources. The economic efficiency of using pea in crop rotation systems and its role in sustainable agriculture are also considered.

Keywords: Pea, crop rotation, biological nitrogen, soil fertility, legumes, agroecology, yield.

Introduction: One of the important factors in maintaining soil fertility and achieving high yields in agriculture is the scientific organization of crop rotation systems. As a result of regular planting of the same crop in the same area, nutrients in the soil decrease, diseases and pests increase, and yield decreases [1].

Crop rotation is a system of alternating crops in a certain sequence, which serves to restore soil fertility, improve phytosanitary conditions, and maintain ecological balance [2].

Legumes, especially chickpeas (*Cicer arietinum* L.), play an important role in this system. Chickpeas are of great importance in agriculture not only as a food product, but also as a biological nitrogen-fixing crop [3].

Main part

Biological properties of chickpeas

Cockpeas are annual plants belonging to the legume family, which are characterized by drought resistance. Nodule bacteria develop in the roots of the plant, which absorb molecular nitrogen from the air and enrich the soil with natural nitrogen [4].

According to studies, chickpeas are able to accumulate up to 50–100 kg of biological nitrogen per hectare

during one growing season [5]. This is an additional source of nutrients for subsequent crops.

Pea grain contains 20–30% protein, which is important in human nutrition and animal husbandry [6].

Importance of peas in crop rotation system

Role in increasing soil fertility

Pea is one of the main crops that increase soil fertility in crop rotation system. Legumes play an important role in restoring the nitrogen balance in the soil [7].

Crops such as wheat, barley, and corn planted after peas significantly increase their yield. Scientific studies have shown that grain yields after peas increase by 10–25% [5].

Pea root and stem residues increase the amount of organic matter in the soil and contribute to the formation of humus. As a result, soil structure improves and microbiological activity increases [8].

Impact on phytosanitary conditions

Chronic planting of the same crops leads to an increase in diseases and pests in the soil. The use of chickpeas in crop rotation systems improves phytosanitary conditions [2].

When peas are intercropped with cereals:

- Root rot diseases are reduced;
- Weed populations are reduced;
- The life cycle of pests is disrupted [9].

This reduces the use of chemicals and ensures environmental safety.

Improves soil physical properties

The strong root system of chickpeas loosens dense soil layers and improves air exchange [10]. As a result:

- Increases water permeability;
- Improves soil moisture retention capacity;
- Reduces erosion risk.

Pea planting is an important agrotechnical measure to prevent soil degradation, especially on poor soils.

Economic efficiency

Pea is also an economically efficient crop in crop rotation systems. Due to the accumulation of biological nitrogen, the need for mineral nitrogen fertilizers is reduced [3].

In addition:

- the yield of the next crop increases;
- production costs are reduced;
- the possibility of growing export-oriented products expands [11].

According to FAO, the inclusion of legumes in crop rotation systems is one of the important factors in the development of sustainable agriculture [12].

Conclusion

Pea is a legume crop of important agrobiological importance in crop rotation systems. It enriches the soil with biological nitrogen, increases the amount of organic matter, improves the physical properties of the soil, and reduces the spread of diseases and pests.

The yield of crops planted after pea increases and the need for mineral fertilizers decreases. Therefore, the inclusion of pea in a scientifically based crop rotation system is ecologically and economically effective.

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