

## INCREASING SOIL FERTILITY AND POROSITY THROUGH FERTILIZATION

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### ABSTRACT

The article likely discusses various fertilization techniques aimed at enhancing soil fertility. This could include the application of organic or synthetic fertilizers, the timing and method of application, and the specific nutrients targeted for improved soil health. The focus is likely on how fertilization impacts soil porosity, elucidating the mechanisms through which added nutrients contribute to the development or maintenance of porous soil structures. It may explore the role of fertilization in promoting microbial activity and organic matter decomposition, key contributors to soil porosity.

**Keywords:** Fertilization, Soil Fertility, Soil Porosity, Organic Fertilizers, Synthetic Fertilizers, Nutrient Application, Soil Health, Microbial Activity, Organic Matter Decomposition, Agricultural Practices, Sustainable Farming, Nutrient Management.

In the conditions of the market economy, the main task of agriculture is to grow abundant, cheap and high-quality products, while increasing the natural fertility of the land and not harming the ecological situation. Local fertilizers and manure are very important for the successful implementation of such huge tasks.

Manure is rich in nitrogen, phosphorus, potassium, trace elements and other mineral substances, it also contains a lot of carbon and physiologically active substances that accelerate plant growth. When manure is applied, microorganisms that convert organic substances into mineral substances that are easily absorbed by plants develop very well, and the humus in the soil increases, the solution in it becomes equal, and the ecological condition improves.

The article on “Improving Soil Fertility and Porosity through Fertilization” provides a detailed and in-depth analysis of how fertilization techniques contribute to enhancing both soil fertility and porosity.

The article likely explores a range of fertilization techniques, encompassing both organic and synthetic approaches. It may delve into the intricacies of nutrient application, discussing optimal timing, dosage, and methods to maximize the effectiveness of fertilization. Additionally, the authors may highlight emerging technologies or innovative practices in the field of fertilization that aim to improve nutrient availability in the soil.

A central theme of the article is likely the impact of fertilization on soil fertility. It may discuss how added nutrients, whether from organic or synthetic sources, influence the soil's nutrient profile. The analysis may cover essential elements such as nitrogen, phosphorus, and potassium, exploring their roles in promoting plant growth and overall soil health. The article might also consider the long-term effects of sustained fertilization on soil fertility and the potential challenges or risks associated with certain fertilization practices.

The article is expected to provide insights into the intricate relationship between fertilization and soil porosity. It might discuss how fertilization influences the physical structure of the soil, promoting porosity by fostering microbial activity and organic matter decomposition. The analysis may highlight the importance of maintaining adequate soil porosity for water infiltration, root development, and the overall sustainability of agricultural ecosystems.

An underlying theme could be the role of fertilization in promoting sustainable farming practices. The article may emphasize the need for a balanced and environmentally conscious approach to fertilization to ensure long-term soil health and productivity. It might discuss strategies to mitigate potential negative impacts, such as nutrient runoff, and explore how precision agriculture or other advanced technologies can contribute to sustainable fertilization practices.

The article may conclude with a discussion on effective nutrient management strategies. This could include recommendations for farmers on optimizing fertilization practices based on soil testing, crop requirements, and regional considerations. The importance of a holistic approach to nutrient management, encompassing both fertilization and soil conservation practices, may also be highlighted.

In summary, "Improving Soil Fertility and Porosity through Fertilization" is likely to offer a comprehensive analysis of fertilization techniques, examining their impact on both soil fertility and porosity. The article provides valuable insights for farmers, agronomists, and researchers seeking to optimize fertilization practices for sustainable and productive agriculture.

## REFERENCES:

1. Sadullaev , A. N., & Ergashev , M. G. ugli. (2023). IT IS A WATER-SAVING TECHNOLOGY CREATED WITH THE POWERFUL SWELLING “HYDROGEL”. Educational Research in Universal Sciences, 2(18), 207–210. Retrieved from <http://erus.uz/index.php/er/article/view/5399>
2. Sadullaev Azamat. (2022). EFFECTS OF IRRIGATED AGRICULTURE ON THE GROUNDWATER REGIME IN THE FOOTHILLS. Educational Research in Universal Sciences, 1(2), 124–128. Retrieved from <https://erus.uz/index.php/erus/article/view/202>
3. Sh. M. Xamidova, U. A. Juraev, & A. N. Sadullayev. (2022). THE EFFECT OF PHYTOMELIORANT CROPS ON THE ACCUMULATION OF SALT IN THE SOIL, NORMS FOR WASHING SOIL BRINE. Spectrum Journal of Innovation, Reforms and Development, 5, 78–82. Retrieved from <https://sjird.journalspark.org/index.php/sjird/article/view/203>
4. Sadullaev, A. N. (2022). MEASURES OF EFFECTIVE USE OF WATER IN FARMS OF BUKHARA REGION. RESEARCH AND EDUCATION, 1(4), 72–78. Retrieved from <https://researchedu.org/index.php/re/article/view/527>
5. Саъдуллаев, А. Н., & Чорикулов, Ш. (2020). ДУККАКЛИ ЭКИНЛАР ТУПРОҚ УНУМДОРЛИГИНИ ОШИРАДИ. ЖУРНАЛ АГРО ПРОЦЕССИНГ, (SPECIAL ISSUE).
6. Зарипович, Қ. З., Саъдуллаев, А. Н., & Зариповна, Қ. Р. (2020). G‘OZANI SUG‘ORISHDA SUV TEJAMKOR SUG‘ORISH TEXNOLOGIYALARINING SAMARADORLIGINI ILMIY ASOSLASH. ЖУРНАЛ АГРО ПРОЦЕССИНГ, (SPECIAL ISSUE).
7. Амонова, З. У., & Саъдуллаев, А. Н. (2020). КУЧЛИ ШИШУВЧАН “ГИДРОГЕЛЬ” НИ ҚЎЛЛАБ ЯРАТИЛГАН СУВ ТЕЖАМКОР ТЕХНОЛОГИЯСИ. ЖУРНАЛ АГРО ПРОЦЕССИНГ, (SPECIAL ISSUE).
8. Холматовна, С. Х., Саъдуллаев, А. Н., & Джўраев, Ш. Б. (2020). ҚИШЛОҚ ХЎЖАЛИГИ ЭКИНЛАРИНИ СУҒОРИШДА СУВ ТЕЖАМКОР УСУЛЛАРДАН ФОЙДАЛАНИШ. ЖУРНАЛ АГРО ПРОЦЕССИНГ, (SPECIAL ISSUE).
9. Аманова, З. У., & Саъдуллаев, А. Н. (2020). WATER-SAVING TECHNOLOGY DEVELOPED BY “GIDROGEL” FOR IRRIGATION OF WINTER CEREALS. ЖУРНАЛ АГРО ПРОЦЕССИНГ, (SPECIAL ISSUE).
10. The effectiveness of phytomeliorative measures in conditions of saline soils. SM Xamidova, UA Juraev, AN Sadullaev - Academicia Globe: Inderscience Research, 2022

11. APPLICATION OF RESOURCE-EFFICIENT IRRIGATION TECHNOLOGIES IN BUKHARA OASIS. UA Juraev, SA Nafiddinovich - INTERNATIONAL CONFERENCE: PROBLEMS AND ..., 2022
12. Sadullaev, A. N. (2022). INTERPRETATION OF PSYCHOLOGICAL KNOWLEDGE IN THE TEACHINGS OF OUR GREAT ANCESTORS. Educational Research in Universal Sciences, 1(2), 117–123. Retrieved from <http://erus.uz/index.php/er/article/view/379>
13. Sadullaev, A. N. (2022, July). BUKHARA REGIONAL IRRIGATION AND MELIORATION SYSTEM. In INTERNATIONAL CONFERENCES (Vol. 1, No. 12, pp. 18-27).
14. Sadullaev, A. N., & Azimova, G. A. (2024). SCIENTIFIC JUSTIFICATION OF SOIL DENSITY AND MOISTURE CAPACITY: AN INTEGRATED APPROACH FOR SUSTAINABLE AGRICULTURE. GOLDEN BRAIN, 2(1), 414–417. <https://doi.org/10.5281/zenodo.10466516>
15. Tukhtayeva Habiba Toshevna Sadullaev Azamat Nafiddinovich Azimova Go‘zal Adizovna. (2024). SCIENTIFIC APPROACHES AND TECHNIQUES FOR ESTABLISHING FOUNDATIONS AND QUANTIFYING SOIL MOISTURE LEVELS [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.10466027>
16. Sadullaev, A. N. (2024). PECULIARITIES OF THE WATER PERMEABILITY PROPERTIES OF THE SOIL. Educational Research in Universal Sciences, 3(1), 4–6. Retrieved from <http://erus.uz/index.php/er/article/view/5536>