

AEROPONICS AS INNOVATIVE APPROACH IN AGROENGINEERING

Ivanov Y.R., *yarlion99@gmail.com*

Dmytro Motornyi Tavria State Agrotechnological University

The main principle of aeroponics is aerosol spraying in closed or semi-closed area of a nutrient aqueous solution.

The principle is similar to hydroponic systems, where the roots are placed in the soil environment, into which water is pumped with nutrients. And in aeroponics, the roots just hang in the air and are sprayed with special devices [1].

Aeroponics has contributed to advances in several areas of study including root morphology, nutrient uptake, drought and flood stress, and responses to variations in oxygen and/or carbon dioxide root zone concentrations [2].

Aeroponics leads to success in the space industry. Because it has become possible to grow plants in space, and this is very important for future expeditions and revitalization of new planets.

For the functioning of system, the seeds are planted in pieces of foam stuffed in tiny pots that are fully provided with light and a sprayed mixture.

Without soil, plants grow very quickly because they consume more oxygen, and are also isolated from pests and diseases associated with the soil [3].

These systems allow easily to build large vertical farms. It is also incredibly economical, as it requires 95% less moisture.

Thanks to aeroponics, you can grow: leafy greens, culinary herbs, tomatoes, cucumbers, strawberries, as well as other plants grown in hydroponics. And harvesting is usually easier, especially for root crops.

But it has also disadvantages. The nutrients in the water must be accurately calculated. The roots must be sprayed every few minutes, and if it does not happen, the plant will die. Therefore, there must be no problems with electricity. Moreover, professional equipment costs a lot of money.

References

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Language adviser: Odnoromanenko M.V., Teacher of the Department of Foreign Languages

GROWING OF BEREHYNIA MELON IN THE CONDITIONS OF THE SOUTHERN STEPPE ZONE OF UKRAINE

Kalinin O.V., *kalinin.oleg1998@gmail.com*

Dmytro Motornyi Tavria State Agrotechnological University

Melon (*Melo sativus*) is an annual plant of the the Gourd family. In Ukraine, the main area of melons is concentrated in the south and south-east, since this area has favorable soil and climatic conditions, which are necessary for timely harvesting. Mass melons are grown in Mykolaiv, Odessa, Kherson, Zaporizhzhia, Dnipropetrovsk regions.

Melon pulp contains a lot of iron, potassium, calcium, magnesium, B, C and A vitamins, carotene and pectins. Thanks to them, melon is a means of preventing cardiovascular diseases, reducing blood cholesterol [1, p.84].