UDK 631.6; 626.8

THE IMPORTANCE OF SEEDLING CULTIVATION AND A DEVICE FOR MAKING POTS FROM BIOHUMUS FOR SEEDLING CULTIVATION

A.B.Babamuradov[1], Sh J.Imomov[1], A.A.Jurayev[1], S.S.Orziyev[1], U.F.Khusenov, D.U.Ruziqulova

[1]Bukhara Institute of Natural Resources Management of the National Research University of Tashkent Institute of Irrigation and Agricultural Mechanization Engineers

e-mail:

sorziyev891@gmail.com

shavkat-imomov@rembler.ru

ulmasbekstar@gmail.com

phone number:

Sardor S. Orziyev: +998906463981

Shavkat J.Imomov: +998914416931

Ulmasbek F. Khusenov: +998914160336

Abstract: Article provides information about the today's demand in the food industry in the world, the work and normative documents carried out for the development of the food industry in our Republic, the importance of growing through seedlings in increasing productivity in fruit and vegetable growing, the role of pots made from a mixture of biohumus and soil in the cultivation of seedlings, and a device for making pots from biohumus (organic fertilizer).

Key words: Greenhouses, fruit and vegetable crops, food products, biogas reactor, pneumatic cylinders, frames, pots, biohumus, organic fertilizer, bunker, pressed piston, soil composition, soil, hydrogeological conditions, nutrients.

Introduction: In today's age of advanced techniques and technologies, the demand for environmentally friendly products in the world market, especially for the export of the food industry, is also increasing. To meet the needs of the population of the region for food, the main focus is on increasing the productivity of food products grown on farms and greenhouses in providing light industry with raw materials for food products[1].

A young sprout intended for transplanting to a place of permanent growth, but which has not yet formed yielding organs, is called a seedling. The essence of growing plants through seedlings is that they are grown in a small feeding area with sufficient nutrients and moisture in the first period of their life, under artificial climatic conditions, then it transplanting and growing in open or protected ground structures [2].

Research materials: In fruit and vegetable growing, the growth and development of plants grown from seedlings is observed in comparison with the same plants grown without seedlings. This promotion leads to faster ripening of the plant, good prices of the product in the market and high economic efficiency. Therefore, many of our farmers are well aware of the advantages of growing fruit and vegetable crops from seedlings, growing early crops in open fields and greenhouses. But there is a lack of information and experience on the preparation of fruit and vegetable seedlings for some farmers and land owners [3].

Cultivation of plants through seedlings in protected land conditions extends the product release period and provides an opportunity to use artificial lighting sources economically. Despite the high cost, the seedling method is economically justified and it is widely used in vegetable growing, and in some cases it is impossible to grow vegetables without seedlings. The methods and techniques of seedling cultivation, intellectually correct selection of methods of cultivation with or without seedlings are important for the economy of vegetable growing [4].

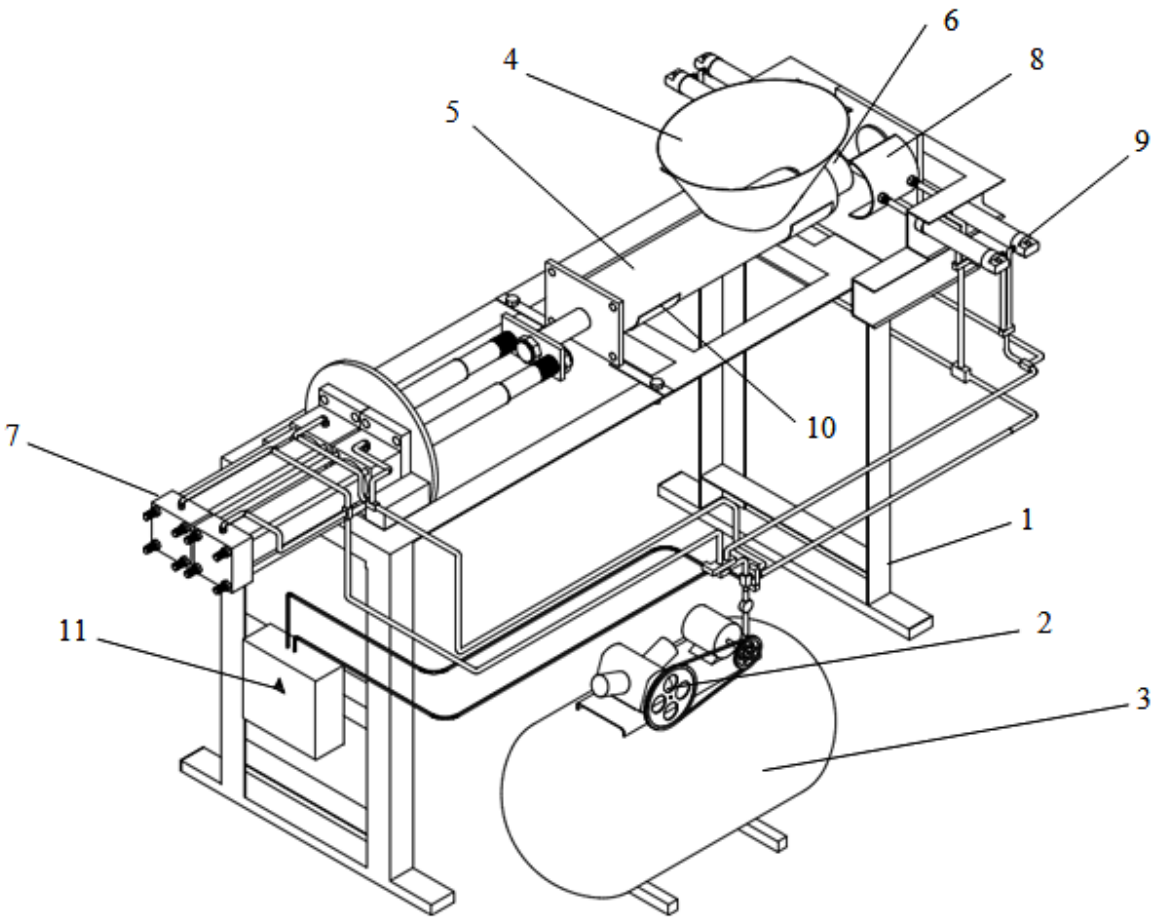
The importance of five natural factors (water, mineral nutrients, heat, light, air) in obtaining abundant harvest from crops is very important. These factors create favorable natural conditions for the growth of the plant, and as a result, an abundant harvest is obtained. Water needs of agricultural crops vary depending on climate, soil, hydrogeological conditions, biological properties of plants [5].

The system of measures aimed at reforming agriculture occupies a head position in the implementation of economic reforms implemented in our republic. No. 60 of the President of the Republic of Uzbekistan dated 28.01.2022 "On the development strategy of the new Uzbekistan for 2022-2026"

Objective 30 of the Decree: To increase and protect soil fertility. Through the intensive development of agriculture on a scientific basis, it is determined to increase the income of peasants and farmers by at least 2 times, to bring the annual growth of agriculture to at least 5%. [6].

In order to achieve these goals, a device for making pots from biohumus was developed in the research conducted by the scientists of the Bukhara Institute of Natural Resources Management of the National Research University of Tashkent Institute of Irrigation and Agricultural Mechanization Engineers. (Figure 1) [7,8].

Research methods: The working technology of the device for preparing pots from biohumus for growing seedlings is as follows. A mixture of biohumus (organic fertilizer) and soil from the biogas plant is loaded into the biohumus compression cylinder installed on the frame of the device through the loading bunker. The product falling into the compression cylinder is delivered and compacted by the forward movement of the pressed piston into arc-shaped molds that form the shape of biohumus pots [9]. In this case, the bottom and wall of the holes are formed from a mixture of biohumus (organic fertilizer) and soil in the space of 1 cm between the arc-shaped molds and the piston. During the return movement of the compacting piston, the water separated from the mixture of biohumus (organic fertilizer) and soil inside the compacting cylinder is discharged through special holes [10]. The movement of the compacting piston is provided by a pneumo cylinder installed on it, and the movement of arc-shaped molds forming the shape of biohumus trays is provided by a pneumo cylinder. Pneumatic cylinders 7 and 9 are supplied with compressed air using a compressor driven by an electric motor. The controller ensures simultaneous forward and return movement of the compacting piston and the arc-shaped molds forming the shape of the biohumus pots. The equipment is capable of making 6 pots of biohumus in one minute.



1 - frame, 2 - electric motor, 3 - compressor, 4 - biohumus (organic fertilizer) loading bunker, 5 - biohumus compression cylinder, 6 - pressed piston, 7 - pneumo cylinder that moves the pressed piston, 8 - arc-shaped molds, 9 - pneumo-cylinders that drive arc-shaped molds,

10 - special hole, 11 – controller.

1-rasm. The device for making pots from biohumus (organic fertilizer).

The analysis of available organic fertilizers shows that the necessary nutrients for growing seedlings are found in biohumus pots obtained as a result of processing in a biogas device. It was analyzed that the development of seedlings significantly changed due to the presence of nutrients necessary for root growth in the mixture of biohumus and soil. Complete decomposition of biohumus pots was observed in the soil [11, 12].

Figure 1. Pots made from biohumus (organic fertilizer) in a pot making device.

Conclusion: To grow seedlings in agriculture, to increase the amount of humus in the soil and the productivity by making pots that are completely decomposed in the soil from the biohumus (organic fertilizer) coming out of the biogas reactor for growing seedlings through the technological process described above and it can be used to reduce the consumption of cocktails by mechanizing the preparation of pots.

List of used literature

1. Orziyev.S.S., Amrulloyev T. O., Khusenov U. F., Khalimov T. A., Imomov Sh. J. / Laboratory experiments on the use of basalt and biohumus packaging in seedling cultivation// 7th international traditional scientific-practical conference on “Creative youth and innovative development”// (Bukhara, April 26-27, 2022) @tiiamebf.uz
2. S.A. Yunusov, Z.T. / Abdiev 100 book collection Vegetable cultivation in greenhouses// Book 18 / Pages 5-8.
3. S.A. Yunusov, Z.T. / Abdiev 100 book collection Vegetable cultivation in greenhouses// Book 18 / Pages 5-8.
4. B.I. Zyev, O. Kodiphyjaev, M.M. Adilov, U.I. Akpamov / Agriculture and police// Tashkent - 2009, pp. 72-73.
5. Joraev A. A. / basing the parameters of the device that creates a longitudinal floor between the rows of cotton in one pass of the aggregate: doctor of philosophy in technical sciences// (phd) dissertation. - against - 2021, 14 - p.
6. Decree of the President of the Republic of Uzbekistan dated 28.01.2022 No. 60 "On the Development Strategy of the New Uzbekistan for 2022-2026"

7. S.S. Orziev , A A Juraev, A Tukhtakuziyev, Kh Kh Olimov, Sh S Ostonov. Creating energy and resource saving longitudinal pawls forming device between cotton rows // IOP Conference Series: Earth and Environmental Science / April 8, 2022

8. S.S. Orziyev , Sh J Imomov, Amrulloev T.O, Khusenov U.F // Efficiency of using biogome in cultivation of greenhouse plants // Web of scientific research journal / ISSN: 2776-0979, Volume 3, Issue 3, Mar., 2022

9. S.S. Orziyev, Kh Kh Olimov, A N Juraev, Sh J Imomov, T O Amrulloev Application of energy and resource engineering software in cotton fields // IOP Conference Series: Earth and Environmental Science /AEGIS 2021

10. Salimov O U, Imomov Sh J, Shodiyev E B, Juraev T Kh and Sabirov K N 2021 Physical-mechanical properties of organic waste reduced to bioreactor IOP Conference Series: Earth and Environmental Science 868 012088

11. Usmanov K E, Imomova N Sh, Imomov Sh J, Nuritov I R and Tagaev V I 2021 Analysis of laboratory results in anaerobic processing in poultry dung reduction regime *IOP Conference Series: Earth and Environmental Science* 868 012049

12. https://www.google.com