DESIGN OF THE IMPROVED SCHEDULER СЧХ-4А FOR SOWING SEED WITH LIQUID ORGANIC FERTILIZER

Ergashov Zuhriddin Jurayevich*

*Doctoral Student,
Bukhara Institute of Natural Resources Management "Tashkent Institute of Irrigation,
Agricultural Mechanization Engineers" National Research University,
Bukhara City, Gazli ave, UZBEKISTAN
Email id: zuxriddin72@mail.ru

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ABSTRACT

The article provides information on the improved new construction and structure of the seeder for sowing with liquid organic fertilizer obtained as a result of anaerobic processing of seeds, as well as the technological process of its operation.

KEYWORDS: *Anaerobic, Organic Fertilizer, Seed, Soil Fertility, Onion Section, Coil Regulator.*

1. INTRODUCTION

According to the decision number **PQ-3574**of the resolution of the Republic of Uzbekistan February 28, 2018 "On measures to radically improve the financing system for cotton raw materials and grain cultivation"soil fertility is low and during the last 3 yearsit was determined that cotton should not be grown in low-yielding lands [1].

Because, according to the Ministry of Economy, only 0.9 million sum of income was obtained from 1 hectare of cotton grown on low-yielding lands. Another important point is that the average yield is expected to increase from 27 centners last year to 29 centners this year due to not planting cotton in low-fertility lands [2].

Therefore, cotton growers in exchange for increasing the productivity of existing cotton fieldsincrease farmers' incomeis one of the acceptable measures. In order to achieve this, it is necessary to increase the use of liquid organic fertilizers obtained as a result of anaerobic processing to increase the productivity of the land, and to apply seed and liquid organic fertilizer directly to the nest created to sow them [3,4].

In the conditions of the republic, liquid organic fertilizers are usually sprinkled on the surface of the field using the МЖТ-10 machine and buried during soil cultivation. The organic fertilizers applied in this way are absorbed slowly by the soil and have less effect on the development of germinating cotton seedlings [5]. In order to overcome these problems, the scientists of our country are developing and improving resource-saving innovative agrotechnical measures. One of them is the method of planting seeds with liquid organic fertilizer coming out of the biogas plant, which is one of the important agrotechnical measures for growing early, abundant and high-quality cotton crops [6,7,8,9,10]. Therefore, devices are being created to plant seeds with liquid organic fertilizer obtained as a result of anaerobic processing of organic waste.

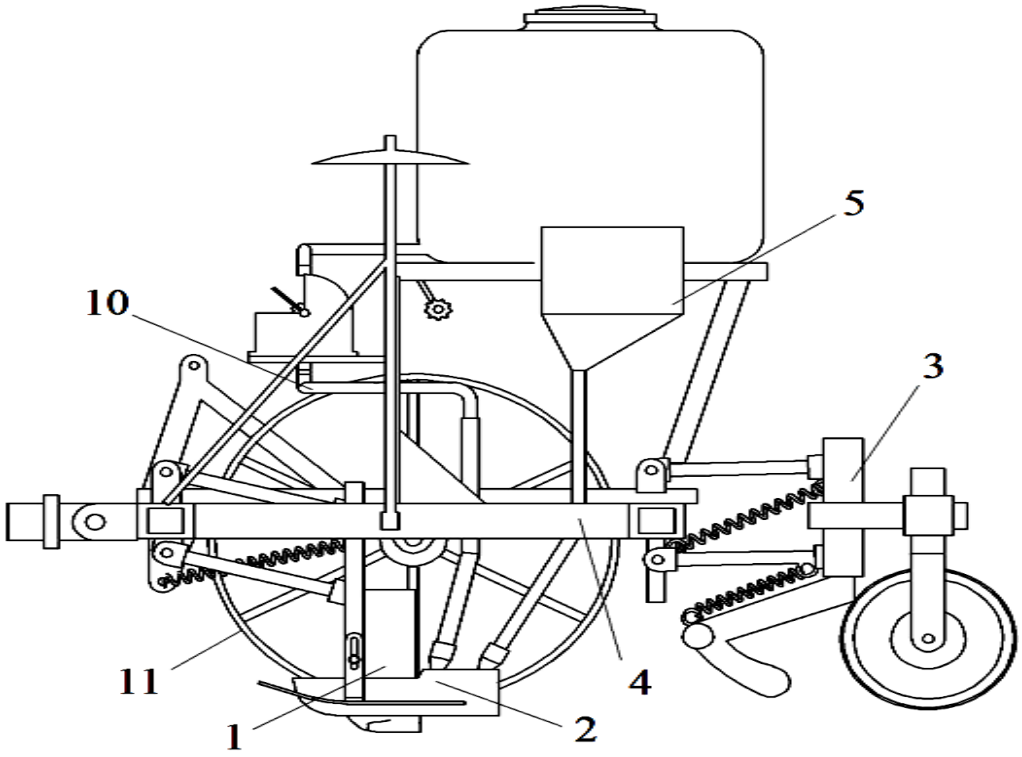
2. Methods

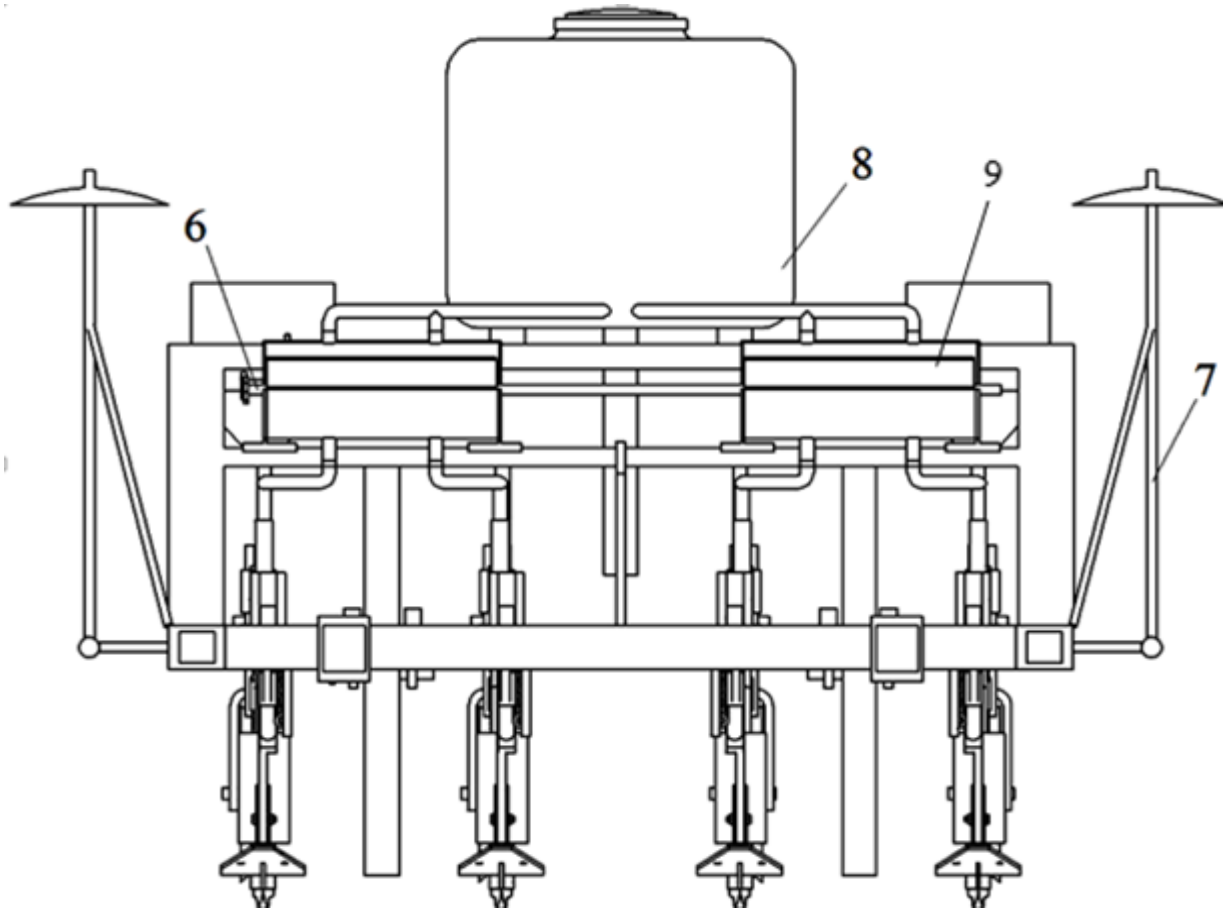
The design of the device was developed based on the fact that there are almost no devices for sowing seeds with liquid organic fertilizer in the republic and the purpose of the research.

The problem is solved by a liquid organic fertilizer hopper adapted to be installed on a seed drill and a device with a working body, which consists of conducts that transfer fertilizer from this hopper to the seed drill through metering devices (Pic. 1).

Picture. 1. Seed planting device with improved liquid organic fertilizer.

The device for planting seeds with liquid organic fertilizer is a precise amount of planting device 1, a section of a coulter 2, a section of working equipment for burying a seed 3, a frame 4, a container for storing seeds 5, a moving left shaft 6, a follower 7, a hopper for giving liquid organic fertilizer 8, a roller leveler it consists of 9 and liquid organic fertilizer conveyor 10, support wheel 11(2 pictures).





Picture 2.The device that plants seed with liquid organic fertilizer.

The device works in the following order. When the seeder is moved by the tractor, the movement is transmitted to the seeding apparatus 1 and the roller-shaped regulator 9 through the support wheel 11. At the same time, the seed in the tank 5 is poured into the slot opened with the help of the hatch section 2, and the seed is transferred to the seed from the hopper 8 through the metered fertilizer conveyor 10 with the help of a coil-shaped precision meter 9. Coil regulator 9 the movement is transmitted using the left shaft 6. The sown seed is buried using section 3 of the working equipment. The tracer 7 pulls the trace for the next planting process.

3. Results and Discussion

Research using the improved СЧХ-4А seeder, which sows seeds with liquid organic fertilizer, was conducted in the educational experimental farm fields of the Bukhara Institute of Natural Resources Management of the National Research University "TIAME"(3 pictures). Bukhara 6 varieties of cotton were planted in the experiment. In the experiment, when the seed was planted with liquid organic fertilizer, the field fertility of the seed showed different indicators depending on the biological characteristics of the cotton variety and weather conditions.

3 Pictures.The working process of the seed drill with liquid organic fertilizer.

In the variant, the level of fertility was 80.8%, while in the variants planted with liquid organic fertilizer, this indicator was observed to be 98.9 %(4 pictures).

4 pictures. Development of cotton planted with liquid organic fertilizer.

4. CONCLUSION

Thus, when organic fertilizers are used, the productivity of the soil is improved along with the increase of cotton yield, and it is possible to save mineral fertilizers. According to many scientific investigations and information received from advanced farms, the effectiveness of mineral fertilizers in cotton increases when they are used together with organic fertilizers [11,12,13,14]. If organic fertilizer is applied to the ground with the seed during seed planting, cotton can be harvested early, strong, and healthy sprouts. Due to the application of organic fertilizer (biosludge), the temperature of the soil at the depth of seed planting increases by 0.2-0.50C, soil moisture by 1.0-1.5%, and complete sprouting of seedlings is achieved.

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