HARVESTING OF THE SEED PILE OF DESERT FORAGE PLANTS

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Abstract: The article presents materials for the restoration of degraded, the improvement of low-yielding and narrowly seasonal pastures and the analysis of technical means for collecting seeds of desert-pasture fodder plants. The article presents materials for the restoration of degraded, the improvement of low-yielding and narrowly seasonal pastures and the analysis of technical means for collecting seeds of desert-pasture fodder plants.

The aim of the study is to reduce seed losses during mechanized harvesting of desert fodder plants by activating the process of their separation from the crushed mass.

Key words: Arid pastures, fodder base, degradation, pasture improvement, seeds, hay, weeds.

1. Introduction

The desert and semi-desert pastures of the Republic represent a huge potential for the development of astrakhan breeding and desert-pasture animal husbandry in general.

Arid (desert and semi-desert) pastures of Uzbekistan, occupying an area of about 21 million hectares, are the food base for astrakhan breeding and desert-pastoral animal husbandry in general.It contains camel breeding, horse breeding, cattle breeding, goat breeding. The branch of desert-pasture animal husbandry is kept on natural pastures almost all year round.

Pastures, despite their low productivity (2.0–4.0 centners per hectare), with significant fluctuations in productivity over the years and seasons of the year, are considered the cheapest sources of fodder. recent decades, etc. are associated with a decrease in the productivity of pastures and even their degradation.The task of stable development of the industry is the development and improvement of well-known technologies and machines to strengthen the fodder base of livestock.

Strengthening the forage base is the restoration of degraded, improvement of low-yielding and narrowly seasonal pastures, including the production of seeds of pasture plants for these purposes.

2. The degree of knowledge of the problem

Scientists from the Research Institute of Karakul Breeding and Desert Ecology (NIIKEP), the Institute of Plant and Animal Gene Pool and a number of educational institutions of the republic have developed the basis for improving arid pastures. It has been proven that on improved pastures the yield of fodder plants increases up to 2 or more times.Promising fodder plants from wild flora have been introduced into the culture. There is a rich gene pool of arid flora. Unfortunately, all this rich scientific and applied potential today does not bring the proper return.

One of the reasons for this is the lack of effective mechanized technologies and technical means to combat degradation and improve pastures;

3. Materials and methods

Grassland Seed Harvesting Machine was developed according to the standard method. Based on the analysis of a specific technological process, a preliminary layout diagram of the machine was developed.Taking into account the elements of the layout scheme, the initial requirements for the machine were drawn up.After the approval procedure, the terms of reference for the machine were developed.

Further, design documentation and working drawings were developed, according to which mock-up samples of technical means were made.After the manufacture of the machine, they underwent factory tests and, with the elimination of comments, were transferred to production tests

4. Results and discussion

Production of seeds of desert fodder plants to combat degradation and improve pastures. At present, the seeds of desert fodder plants can be collected in small quantities only at the stations of the Research Institute of Karakul Breeding and Desert Ecology (NIIKEP) and in individual farms, where, under the guidance of the institute's specialists, attempts are being made to set up their production. Moreover, the seeds are harvested by hand.The annual demand for a heap of seeds, subject to the improvement of priority areas for 10 years, is more than 10 thousand tons per year.

Taking into account the importance of the problem of mechanization of harvesting seeds of desert fodder plants, according to the initial requirements developed within the framework of this project, a special harvesting machine with an active separating mechanism was manufactured at JSC "BMKB-Agromash" (Fig. 1)

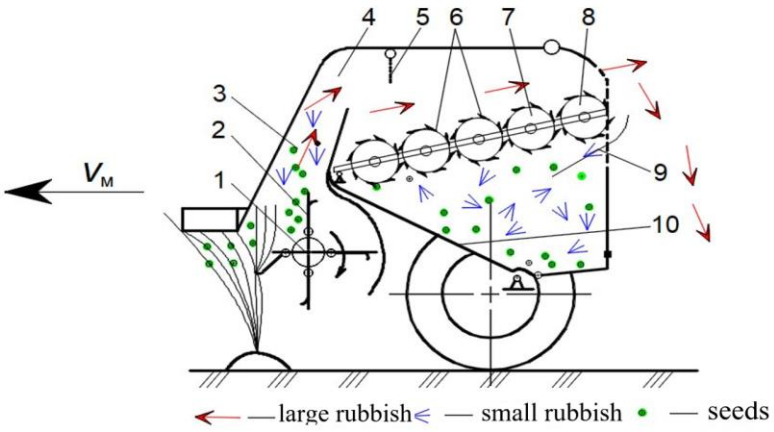

Figure 1. **Scheme of technical means for harvesting seed plants of desert-pasture plants**

The machine consists of a rotary cutter 1 with hanging knives 2, a deflector 3, a mesh reflector 4, cascaded separating drums 5, pallets 6 and 7 of a folding bottom 8.

The machine works as follows. When progressively moving along the testis, the cutting device cuts off, partially crushes plants with mature seeds. In this case, the seeds are separated from the stems and, mixed with a heap, reflected from the mesh reflector, enter the beginning of the separator. Further, due to the rotation of the drums, they move the entire heap along the separator. In the process of moving, seeds and a small heap fall into the bunker through the passage between the drums, and a large heap in the form of hay is dumped onto the swath.

5. Conclusion

1. The practical implementation of the problems of restoring degraded and improving low-yielding and narrow-season pastures requires the production of a significant amount of seeds of pasture fodder plants, which can be solved by mechanizing their harvesting.
2. The most expedient direction of mechanization of harvesting seeds of desert fodder plants is the development of a technical tool based on a rotary hoist mower.

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