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MUNG BEAN VIGNA RADIATA PROMISING CULTURE IN UZBEKISTAN

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Abstract

The article describes the purpose of the work was to create local varieties of vegetable mungbeans with an erect stem, non-lodging, with non-cracking pods, large beans, highly productive suitable for mechanized harvesting. They would be well adapted to various soil and climatic conditions and successfully cultivated in all regions of the republic. New varieties would be suitable for sowing after harvesting cereals, vegetables and other crops, be heat-resistant and drought-resistant, and be cultivated on medium-saline soils.

Keywords: vegetable mung bean, varieties, heat resistance, drought resistance, yield.

Mung bean, or mung bean, or lü-dau, Asian bean, golden bean (lat. Vigna radiata) is an annual herbaceous plant; a species of the genus Cowpea of the family Leguminaceae; leguminous crop originated from India. The seeds are small, green, oval-shaped. The term "mung" comes from the Hindi language [1].

For the population of Central Asia, mung bean grain is an indispensable high-protein food product. Mung bean is a moderately high-calorie dietary product containing a lot of fiber, vitamins and proteins, it can successfully replace meat. Nutritional value per 100 grams: proteins - 23.5 g, fats - 2.0 g, carbohydrates - 44.2 g, ash - 3.5 g, water - 14 g. [2, 3].

In 2021, at the Institute of Genetics and Experimental Biology of Plants, as part of an applied project, experiments were laid down to create standard varieties of mung bean suitable for mechanized harvesting.

A collection of mung beans was introduced from the World Vegetable Center. Work will be carried out to select a line well adapted to the soil and climatic conditions of Uzbekistan.

The purpose of the work: to create varieties with an erect non-lodging bush, with large beans that do not crack in the field and large grain. Varieties must be suitable for mechanized one-time harvesting with a combine.

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They should be well adapted to various soil and climatic conditions and successfully cultivated in all regions of the republic. New varieties should be suitable for sowing after harvesting cereals, vegetables and other crops, be heat-resistant and drought-resistant, and be cultivated on medium-saline soils.

Below is a brief description of zoned mung bean varieties [4] recommended for cultivation:

Variety "Zilola". The variety has been included in the State Register since 2008. Early-ripening, the first bean ripens 60-63 days after germination. Seeds ripen on 90-95 days. Beans (20-25 pcs.) are formed above the crown, which makes them much easier to collect. The yield is 20.0-25.0 c/ha. The weight of 1000 seeds is 70-72 g. Improves soil fertility. When grown with a thickened standing of plants (10-15 x 15 cm), the yield increases. It is suitable for sowing both in spring and summer sowing and forms a full-fledged crop. It is used for cooking various dishes. The green mass of plants is a nutritious fodder for animals.

Variety "Durdona". The variety has been included in the State Register since 2011. In the republic, there is no analogue of mung bean in terms of precocity. The first harvest of beans is carried out as early as 40-45 days after germination. Biological ripeness of seeds occurs on the 55th day. Beans are formed above the crown (25-30 pieces), which makes harvesting much easier. The yield is 20.8 c/ha with two-row sowing. The weight of 1000 seeds is 60 g. Protein content is 18.7%, starch content is 1.7%. The seeds are larger than those of zoned mung bean varieties.

It is successfully combined in crop rotation with vegetable and grain crops. Improves soil fertility. It is suitable for sowing both in spring and summer sowing and forms a full-fledged crop. It is used for cooking various dishes. The green mass of plants is a nutritious fodder for animals.

Variety "Baraka". The variety has been included in the State Register since 2019. The variety is early-ripening, the vegetation period is 80 days. The shape of the bush is standard, with a height of 50-60 cm. The first beans ripen as early as 57-60 days after germination. It forms 35 or more beans per plant. The color of the bean is brown. The number of grains in a bean is 9-10 pcs. The weight of 1000 seeds is 65.0 g. Yield is 24.0-25.0 c/ha.

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Variety "Osiyo". The variety has been included in the State Register since 2019. The variety is mid-season, the vegetation period is 92 days. The shape of the bush is standard, with a height of 50-60 cm. The first beans ripen as early as 60-63 days after germination. It forms 30 or more beans on the plant. The color of the bean is brown. The number of grains in the bean is 10-12 pcs. The color of the grain is olive, with a shine. The weight of 1000 seeds is 80.0 g. Yield is 26.0-27.0 c/ha.

Variety "Zamin". The variety has been included in the State Register since 2019. The variety is early-ripening, the vegetation period is 82 days. The shape of the bush is standard, with a height of 50-60 cm. The first beans ripen as early as 57-60 days after germination. It forms 35 or more beans per plant. The color of the bean is brown. The number of grains in the bean is 9-10 pcs. The color of the grain is olive, with a shine. The weight of 1000 seeds is 69.0 g. Yield is 25.0-26.0 c/ha.

Variety "Barkaror". The variety has been included in the State Register since 2020. The variety is early-ripening, the vegetation period is 75 days. The shape of the bush is standard, with a height of 50-65 cm. The first beans ripen as early as 40-45 days after germination. It forms 40 or more beans on the plant. The color of the bean is brown. The number of grains in the bean is 8-9 pcs. The color of the grain is olive, with a shine. The weight of 1000 seeds is 81.0 g. Yield is 24.0-25.0 c/ha. The practical use of new intensive varieties of mung bean will contribute to increasing the production of agricultural products for the population and the development of export potential.

Variety "Zilola". The variety has been included in the State Register since 2008. Early-ripening, the first bean ripens 60-63 days after germination. Seeds ripen on 90-95 days.

Beans (20-25 pcs.) are formed above the crown, which makes them much easier to collect. The yield is 20.0-25.0 c/ha. The weight of 1000 seeds is 70-72 g. Improves soil fertility. When grown with a thickened standing of plants (10-15 x 15 cm), the yield increases. It is suitable for sowing both in spring and summer sowing and forms a full-fledged crop. It is used for cooking various dishes. The green mass of plants is a nutritious fodder for animals.

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Agricultural engineering. Mung bean varieties are intended for cultivation under irrigation conditions. They are very plastic in various soil and climatic conditions. They can be successfully cultivated in all regions of the republic.

The irrigation rate at the spring sowing period is 1500 m3, at the summer period - 2000 m3. The seeding rate of seeds is 30 – 35 kg with thickened sowing (400 thousand plants/ha). Sowing scheme: the width of the bed is 70 cm, sowing is two-line. Between the lines - 15 cm and between plants 10-15 cm.

Sowing dates: spring - April 10, summer - June 15.

Tillage: One-time cultivation with manual weeding of the row spacing and cleaning of weeds between plants is mandatory. It is undesirable to allow the soil to dry out.

Mineral feeding. Nitrogen fertilizer application during the growing season is not necessary. Phosphorus - 75 kg/ha, potassium - 75 kg/ha are applied before mass flowering.

Literature

1. Zotikov V.I., Naumkina T.S., Gryadunova N.V., Sidorenko V.S., Naumkin V.V. Leguminous crops are an important factor of sustainable ecologically oriented agriculture. Scientific and Production Journal "Leguminous and Cereal Crops" No1(17). 2016, pp. 6-12.

2. Mavlyanova R. F., Sulaimanov B. A., Boltaev B. S., Mansurov Kh. G. Mosh etishtirish tekhnologii [Technology of growing masha]. – Tashkent: Navruz, 2018. – 24 p.

3. Mavlyanova R.F., Abdullaev F.Kh., Mansurov Kh.G. Agrotechnology of growing new intensive varieties of mung bean. Agricultural Technologies, Vol. 2, Issue 1, 2020. Agricultural Technologies, Issue 2, No 1, 2020.

4. Mansurov Kh.G., Mavlyanova R.F., Abdullaev F.KH. NEW VARIETIES OF MUNG BEAN (VIGNA RADIATA (L.) WILCZEK). Basic, uncommon and non-traditional plant species – from study to introduction (agricultural and biological sciences). International Scientific and Practical Conference. Ukraine. Volume 2. Kruty - 2020. Pp. 93-96.

5. Kim V.V. et al. Mungbean varieties Vigna radiata in Uzbekistan. International journal of conference series on education and social sciences. Vol 1. No. 2.2021.

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