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BIOECOLOGICAL SAFFLOWER CHARACTERISTICS (*CARTHAMUS TINCTORIUS L.*) PLANT

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ANNOTATION

*The article contains information about the beneficial properties of the Safflower (*Carthamus tinctorius L.*) plant and its cultivation in the conditions of Karakalpakstan..*

KEY WORDS: *marigold seeds, soaking in water, soil preparation, simple sowing, germination.*

INTRODUCTION

safflower is a common oilseed crop in Central Asia. It is drought resistant. Safflower oil is used directly in food and is used in making margarine.

25-32% semi-drying light-yellow oil is obtained from the seed. They are not inferior to sunflower oil in terms of quality. The safflower produced by processing safflower pistachios has a more bitter taste, but can be fed to cattle in small quantities.

Its 100 kg cake contains 7-8% fat. It can also be used as a Safflower seeds are good feed for poultry. Safflower has long been known as an oilseed crop in India, Afghanistan, Central Asia, and the Caucasus. Carthamine, a dye, is extracted from its petals. The petals are used as a colorant for pilaf. In the following years, the area of safflower cultivation in Uzbekistan increased several times. Currently, 15-20 thousand hectares are planted in dry lands of Uzbekistan. As it is drought resistant, its green mass is also grown for fodder. The average seed yield is 10-12 s/ha, 19-22 s/ha in irrigated lands.

Botanical description. Safflower is a member of the Asteraceae family, *Carthamus L.* genus. Its 19 species are known, of which only one species, *Carthamus tinctorius L.*, is cultivated. Cultivated Safflower has a strongly developed, branched, arrow root system that penetrates the ground to a depth of 2 m or more. The stem grows upright, rough, white, branches a lot, 40-90 cm tall. The stem branches from the bottom to the tip or from the top. Leaves are sessile, glabrous, thick, lanceolate, lanceolate-oval, elliptic, toothed or flat-edged, with or without thorns. The leaves at the ends of the stem and side branches are crushed and become the outer leaf cover of the flower.

Inflorescence is a basket, 1.5-3 cm in diameter. One plant produces 5-50 baskets. Baskets with or without thorns. Multi-flowered, multi-seeded, 30-70 pistachios per basket. The basket is lined with rolled leaves, so the pistachios do not spill out when picked. Flowers are bisexual, forming a five-lobed tubercle, golden or yellow, sometimes red and white. It has five blades, one slotted knot, a long column and a beak. Pollinated from outside. The fruit is a white, hairless, shiny, four-sided pistachio-oval, narrowing at the base. The pistachio pod is hard, shielded, thick, makes up 50-60% of the weight of the pistachio, 1000 pistachios weigh 40-50 g [1, 2, 5].

BIOLOGICAL PROPERTIES

Safflower is a heat-loving, drought-resistant plant adapted to the continental climate with dry summers and cold winters. It is very heat demanding during the flowering and ripening phase. Grass can withstand temperatures up to 5-6°C. When



safflower is planted in the fall in the conditions of Uzbekistan, its lawns winter well. Safflower planted in autumn gives a higher yield than that planted in spring. During the flowering period, if there is hot, cloudy weather, the flowers are poorly pollinated, pistachios are produced less, and the basket begins to rot. Safflower is not demanding on the soil. It grows in dryland, gray, meadow, meadow-gray soils in the irrigated region. Due to its tolerance to salt, it can also grow in saline soils. It gives a high yield in high-fertility, well-moistened soils [4, 5].

Varieties. Milyutinsky - 114 variety of safflower was created in Uzbekistan "Galla" Union IICh. Thornless, 60-70 cm tall, with 4-5 first order branches. The diameter of the basket is 3.0-3.5 cm, one plant has 6-8 baskets. The flower is golden-red, turns red when it fades. 1000 pistachios weigh 34-50 g. The growing period is 95-120 days. The yield of seed and blue pulp is high. It is included in the State Register for dryland planting in Samarkand, Jizzakh, Syrdarya, Tashkent and other regions.

Planting. Seeds with a purity of 95% and fertility of not less than 85% are used for planting. Safflower begins to grow very early in the spring at the same time as grain crops. It is common to plant safflower at 30 and 45 cm between rows. Sowing rate is 10-12 kg/ha. The planting depth is 5-8 cm. Care consists of horizontal harrowing of lawns, 3-4 working between rows. In irrigated lands, it is watered 3-4 times. Irrigation rate is 600-800 m³/ha. The crop is reaped and threshed in a single-phase method, in the phase of full ripening, in re-equipped combines [1, 3].

Planting the safflower plant. The safflower plant was planted on April 30, 2022. The distance between rows is 70 cm, and the distance between each bush is 40 cm.

Plants began to germinate on May 5. The time of the grass stage of the plant was between May 5 and May 11. If we consider the number of seeds sown as 100%, 91% of them germinated. This indicator proved that Safflower (*Carthamus tinctorius L.*) can easily grow in the soil of Karakalpakstan.

The real leaves of the plant were formed 5 days after the plant came out of the earth. In this case, the leaves of the plant are long lanceolate with straight edges. When the plant develops 5-6 leaves, the stem of the plant becomes evident. The height of the safflower plant in the conditions of Karakalpakstan was 45-70 cm. The plant formed side branches from the height of 30-35 cm of the stem and produced up to 5-12 side branches.

The budding stage of the plant was observed on 42-55 days of plant vegetation. The flowering period of the plant was observed in 65-83 days. The total flowering time of the plant was 74-79 days.

The period of plant seed formation was observed in 72-90 days of the plant. The end of the plant vegetation period corresponds to 105-110 days. The vegetation period of the safflower plant grown in the conditions of Karakalpakstan was 110 days.

The safflower plant was watered 1 time during the growing season until it formed a true leaf, 2 times after the formation of a true leaf, and 1 time at the beginning of flowering. Safflower is not a very demanding plant, so it is not recommended to water it a lot.

Based on the experience of the world, it should be said that in order to get a high and quality harvest from the safflower crop, first of all, it is necessary to fully follow the recommendations given by experts. Quality preparation of the land for planting by farms, implementation of planting works in short periods when the temperature in the soil is 10-12 degrees depending on the soil and climate conditions, organization of planting seeds at the specified depth (4-5 cm) and standards using pneumatic seeders adapted to planting safflower, science it is necessary to implement agrotechnical activities with full use of scientific achievements. Cultivation of safflower plant in the conditions of Karakalpakstan gives effective results. The safflower plant can be used for many purposes in medicine. Mainly, safflower can be used in the prevention and treatment of cardiovascular diseases.



LITERATURE

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