

## TECHNOLOGY OF PRODUCTION OF OIL OF MAHSAR PLANT

**Uralov Abdumannon Iskandarovich**

Department of Biotechnology

Jizzakh Branch of the National University of Uzbekistan

**Mamatkulova Iroda Ergashevna**

Department of Biotechnology

Jizzakh Branch of the National University of Uzbekistan

**Ganijonov Dilyorbek**

Jizzakh Branch of the National University of Uzbekistan

**Abstract:** Mahsar is widely used in the food industry and in the production of margarine and oil. Due to the presence of kartamine pigment in its leaves and stems, it is used as a food product for obtaining yellow and red dyes and for livestock. Damaged hair from the flower part, sunscreens, to restore the lipid layer of very dry skin, that it has antioxidant properties, the presence of glycosides in the flowers, technology of drug production from glycosides, because glycosides are effective for diabetes and this thesis describes the technology of extracting oil from mahsar seeds.

**Keywords:** *Cazthamus* L, waterless places, Milyutinskiy-114, drought, chemical composition, fat extraction technology.

Mahsar is a common oilseed crop in Central Asia. Mahsar directly in the food industry and in the production of margarine, used in fat production. 25-32% light yellow oil is obtained from the seed. In terms of quality, they are not inferior

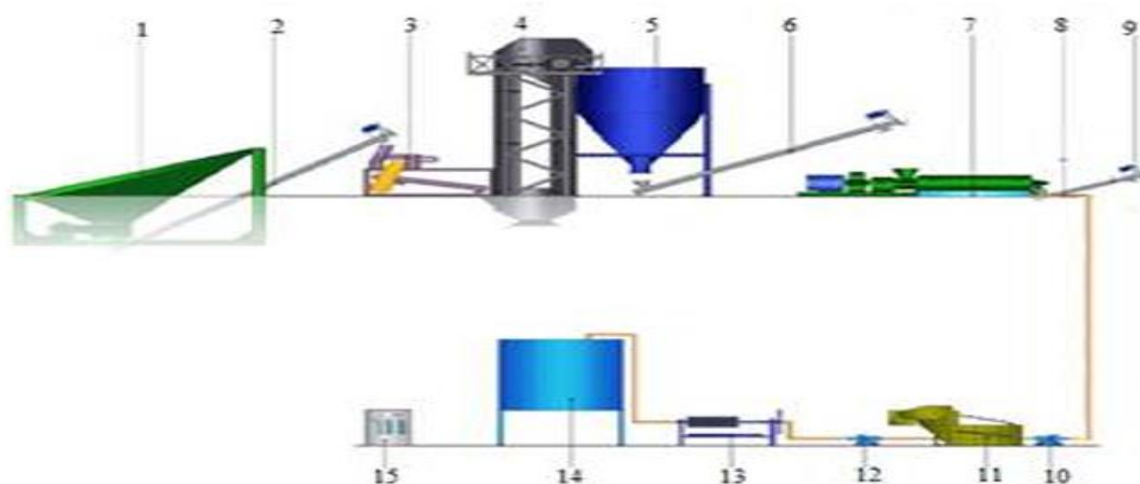
to sunflower oil. In the following years in Uzbekistan, the areas planted with mahsar increased several times. Due to its drought tolerance, green mass is also grown as fodder for livestock. The average yield of seed is 10-12 s/to, in irrigated lands it reaches 19-22s/to. Mahsar belongs to the Astezaceae family, *Cazthamus L jinsiga mansub*. Its 19 species are known, of which only 2 species *Cazthamus tinctorius L*, *Cazthamus tinctorius* are cultivated in Uzbekistan.[5] Makhsar has an 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. One plant produces 5-50 baskets. Round leaves are formed in the basket, so pistachios do not spill when ripe. Mahsar's varieties Milyutinsky-114 and Jizzakh-1 were created at the "Grain" IICH association of Uzbekistan. The diameter of the basket is 3.0-3.5 cm. It is included in the State Register for planting in dry farming in Samarkand, Jizzakh, Syrdarya, Kashkadarya and other regions. Seeds with purity of 95% and fertility of not less than 85% are used for planting. Makhsar begins to be sown very early in the spring at the same time as grain crops. Mahsarni is planted between rows of 30 and 45 cm. Sowing rate is 10-12 kg/to per hectare. The planting depth is 5-8 cm. It is watered 3-4 times in irrigated lands. Irrigation rate is 600-800 m<sup>3</sup>/ha. The crop is harvested in a one-phase method, at the stage of full ripening, in re-equipped combines. [2]

The oil extracted from mahsar and sunflower plants is compared in the table below.[6]

**Chemical composition of sunflower and Makhsar**

Learned an object	<i>Sunflower</i>		Mahsar	
	Rhizome	flower	Rhizome	flower
Moisture %	6.4±0.24	7.71±0.29	5.18±0.18	5.59±0.21
General ash %	7.32±0.22	2.39±0.09	7.34±0.25	7.64±0.29
Essential oils %	0.051±0.004	0.23±0.01	0.26±0.01	0.37±0.01
Tannins %	30.84±1.05	16.45±0.44	6.85±0.21	4.76±0.16
Carotenoids %	32.69±1.05	36.94±1.42	33.84±1.12	38.51±1.48
Organic acids %	1.81±0.5	1.07±0.04	1.6±0.07	1.3±0.04
Ascorbic acid %	0.142±0.005	0.061±0.001	0.283±0.006	0.182±0.003

**Technological scheme of oil extraction by cold pressing**



- 1- Retention booker
- 2- Screw conveyor
- 3- Fast winder
- 5- Place of reception
- 6- Screw conveyor

- 7- Screw oil separator press
- 8- Oil pipes<sup>3</sup>
- 9- Screw conveyor
- 10- Pump
- 11- Collecting filter
- 12- Pump
- 13-Filter
- 14- Storage space
- 15- Control cabin

From the harvesting of Makhsar seeds to the oil production process

1. Loading seeds into transport, purification from impurities, drying and storage, send for processing.
2. Standardization of seeds according to their moisture content and dimensions, separate the seeds from the husk, crush and grind.
3. Inactivation and setting (thermonomic treatment) pressing of oil, formation of sheet-like structure of extractable material, primary purification of pressed oil.
4. Extraction of oil, processing of meal.
5. Oil purification, filtration, separation of phosphatide concentrates (for some oils only), separation of proteins and protein enrichment of whey.
6. Bottling, packaging, labeling and delivery of refined oil to food outlets.[1]

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