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OIL CROPS WITH ANCHORAGE IN IRRIGATED LANDS

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Abstract. When the seeds of representatives of rapeseed oil crops like rapeseed, mustard seed, oil radish, bryukva, and tifon are sown in the fall and wintered directly in the field, as described in this article's conditions of the irrigated lands of our country (cotton-grain complex), only 3.5–10.0% of the lawns are affected by frost, and the lawns from early spring baravj develop. This makes it possible to harvest 2.5–3.0 tons of sara seeds on average per hectare in the early summer; the germination rate is 92–95 percent, and the yield is 15–17 million per hectare.
Key words: *agriculture, short period, autumn-winter-spring and summer period, variety assortment, winter hardiness, carnation oil crops, fallow land, nutrition, regrowth, 3 harvests, degree of wintering, seed yield, germination and seed quality.*

Relevance of the research. Since the beginning of time, oilseeds have been widely acknowledged as having a significant impact on the flavor of our people's favorite national cuisines. With crops like cotton, flax, sesame, sorghum, and during the past 25 years, mustard, rapeseed, and soybeans, we have thus added to agriculture to a certain extent, but in reality, their representatives are still just a small number. Among these, rapeseed, 35-42%, and mustard seeds, which contain 25–32%, 35–42%, and 3–41% edible oil respectively, each contain 3–4%. (7,8,9,10).

By the way, we have included oilseed radish, autumn mustard, and other members of the cabbage family, in terms of their cultivation technologies, to the range of new, fruitful, short-season oilseed crops (after cotton, autumn-winter-spring after maize, and summer-autumn after corn). Naturally, large-scale planting would be conceivable if production suggestions were offered. Among these, oil radish seeds typically contain 40% edible oil, whereas cabbage seeds typically include 52% edible oil, from which 10–12 tons of edible oil can be produced per hectare. (1,2,6).

Additionally, farming in our nation is developing and meeting people's demands, including those for material goods, by producing more animal products each year. This unquestionably helps to meet the demand for cervitamins and nutrient-dense blue foods.

Unfortunately, in addition to the spring-summer crops' high weight and nutritional value, there is a lack of nutritious blue food crops and kinds in the autumn-winter-spring, which has an impact on the production of livestock as well as on how well they grow. Aside from typical food crops (beets in the fall, oats in the spring, rye, alfalfa, etc.), other representatives of the farms that specialize in animal husbandry have not been researched during the autumn, winter, and spring seasons (11,12,13,14,15).

On the basis of this, we've been conducting tests in recent years to investigate the traits of crops that can grow quickly and produce a lot of biomass while withstanding the winter.

Our long-term observations have demonstrated that every representative of cauliflower we have studied is resistant to unfavorable winter weather conditions, grows quickly and rapidly in a short period of time, and due to their biological advantage, they successfully winter after each harvest from late autumn and early spring due to the regrowth feature and from early spring to flowering and harvest. There is access. They have rather high nutritional values, which is significant.

Just one illustration: oil radish is regarded as a nutrient-rich food since it produces an average of 350–600 t/ha of biomass 40–45 days after germination. When mustard and oil radish are planted as a vegetable crop, the seed yield rises by 30–35%. Additionally, they have 50-100 t/ha of manure residue left over after harvesting, which contains N 20–40, P 50–100, K 25–50, Ca 20–40 kg/ha, among other components. According to E.P. Gorelov et al. (1991), the cultivation of cruciferous vegetables appears to be important in enhancing soil fertility and a number of its properties and characteristics. Cruciferous vegetables are grown not only for their green food, but also for their seeds and as a green fertilizer.

In this way, farmers who specialize in raising animals will be able to grow in accordance with the seasons and use the plants for food, seeds, and other things like obtaining oil and green manure.

Methodology. Researchers have collected samples of different types and varieties of cauliflower between 1991 and 1995, studied their biomorphological and ecological characteristics between 1995 and 2002, and based on that, cultivated them for food and seed between 2012 and 2017 before testing them between 2017 and 2019 using various technologies.

Plots were set up in one or two stages, and field and lab tests were conducted in 4 duplicates each year. The observation areas had a total size of 100 m^2, of which 25 and 50 m^2 were computed. Placement of experiments, biometric measurement, other analysis, field observations, and sampling in odd rows in each plant were based on the methods of All-Russian Nutrition (1983), State Cultivation Plots (1986), and UzPITI (2002). The least difference in the obtained data and the accuracy of the experiment were calculated by the dispersion method (1985), and economic indicators were calculated based on the dispersion method (1985). (3,4,5).

In light of this, we have covered the period from 1912 to 2019. We did research throughout In this scenario, the irrigation schedule is at the "Boghizaghan" farm in the Tailoq district, while the planting time and standards are at the "Fayziabad" farm in the Payariq district (2006–2017), the fertilizer need is at the "N.Azimov" farm in the same district (1999–2005), and (2001-2005). yy.) and production studies were conducted in these farms' environments (2017-2019 yy.).

The experimental soils have a medium mechanical composition, are typical gray soils that have been watered for a long period, and seepage water is present at a depth of 5-7 meters. Total nitrogen in the plowed layer (0–40 cm) is 0.85–118%, mobile P205 is 20.5–35.1 mg/kg, and exchangeable K2O is 148–215 mg/kg. Humus content in the soil is 0.76–0.91%. Field tests were conducted using the same methodology as production experiments (B.A. Dospekhov, 1985). All observations, biometric evaluations, and laboratory analyses (of soil, plant, and seed samples, etc.) were completed using generally acknowledged techniques (UzPITI, 1973; DNS, 1983, etc.). The

method used in the irrigated areas of the Zarafshan oasis was used to plant and maintain crop seeds during the experiments (K.F.Botirov, 1997).

The following variables were examined: planting dates (October 1, 15, and 30), rates (15, 30, and 45 m/piece), irrigation schedule, stem yield in relation to ChDNS in the stages of making, flowering, and ripening (60, 70, and 80%), and the need for fertilizer (control, P90K60 (background), background+N60-150 kg/ha). A SON-2.8 seeder was used to sow the seeds at a depth of 3.0-3.5, leaving 60 cm between each row at the specified time and standards. The bush was treated first during the leaf-forming phase once the row spacing was known. After 15-20 days, the second bush (8–12 cm deep) was treated, and it received 1-2 waterings at a rate of 550–600 m3/ha till winter.

The seeds were first gathered with a "Keys" combine when they were 70% mature (June 1–5), dried in a thresher for a week, and then burned.

Result and discussion. Naturally, in such a situation, planting cauliflowers must first be done at the best time and according to the best standards. Sowing seeds too early or too late has a negative effect on not only productivity but, more importantly, on the amount of wintering, the number of bushes, and overall productivity. For instance, oil radish, when planted at the recommended density (60–70 pieces per 1 meter) and time (October 1), yields an average seed production of 22–25 t/ha.

It has been noted that these times also have a high nutritional value. In the experiments, the yield of blue mass per hectare is 350–370 t/ha, especially when these crops are planted in a mixed manner. For instance, oil radish produces 62–65 t/ha of nutritional unit when planted in its pure form, but 500–520 t/ha of blue mass and nutritional unit when it is mixed with rye. and an observed distribution of 80–82 ts/ha. In our experience, the same can be said regarding other reps.

What is more significant is that if cauliflower varieties are planted in September, they can be picked once in November, will winter well due to regrowth, and can be harvested for food in early spring (April) or for seeds at the end of May. Depending on the number of livestock and their nutritional requirements, their biological advantages allow them to be fed regularly and continuously. For instance, brukva, cabbage, suripitza, and oil radish can be planted 2-3 times per year, and typhondek is planted in the spring and harvested 3 times throughout the year.

Table 1

Winter status of two-year root crops in experiments
(Uzbekistan farm of Payariq district, average 1992-2005)

Indicators	Crops				
	Autumn		Oil radish	Bryukva	Typhon
	canola	surepisa			
Average air temperature, ^{0}C	18,6	17,4	19,0	17,9	18,0
Rainfall, mm	33,4	35,6	32,4	38,0	35,9
Planting period	1. X	1.X	1. X	1.X	1. X

Full lawn	18. X	14. X	12. X	12. X	18.IX
1 pair of leaves	20.X	21. X	22. X	26. X	25. X
3 pair of leaves	28.X	01. X1	25. X	25. X	27. X
Autumn vegetation (agricultural)	58	62	56	56	58

According to the data in this table, it is known that root vegetables and cabbage, when planted in September, typically germinate in 9 to 12 days, form the first pair of leaves in the same amount of time, and develop their third pair of leaves 20 to 27 days later. As a result, the autumn vegetation period is 58 to 62 days. It was also noted that the process of complete weeding and leaf production occurs 5-7 days later than in surepiza. But during this time, their preparedness for the winter season is assessed in accordance with the depth of the root system, the weight of the leaves, and other factors in this autumn.

Table 2

Adverse temperature effect on wintering rate of biennial vegetables

(N. Azimov and "Fayziabad" farms of Payariq district, average 1992-2005)

Indicators	**Crops**				
	canola	**surepisa**	**Oil radish**	**Bryukva**	**Typhon**
Average minimum temperature, ^{0}C					
December	-3	-2	-1	-4	-5
January	-7	-5	-3	-2	-3
February	-2	-2	0	-1	0
Duration of average minimum temperature, day					
December	2	1	2	1	2
January	3	2	1	3	1
February	1	2	1	1	2
Snow cover, cm					
December	-	1	2	2	4
January	5	3	2	1	2
February	1	2	3	2	0
The degree of winterization, %	91,6-95,2	89,3-94,5	92,1-97,9	92,0-94,3	93,5-95,4

According to the information in the table, the minimum average temperature for sugar beet during the winter is -3°C in December, -4°C for rutabaga, -5°C for oil radish, and -7°C for rapeseed in

the coldest month of January. Surepitza experiences a minimum average temperature of -5°C, while other representatives experience minimum average temperatures of -2–3°C. The average minimum temperature was noted to last for one to three days over the course of the observation years, and the rape field had the maximum snow cover (5 cm), while the brukva and cabbage fields had the least (0.5 cm).

There was no severe frostbite, despite the fact that this condition had a detrimental impact on the level of wintering of cabbage and root vegetable representatives. Currently, it has been noted that the soil's surface (cultivated) layer's minimum air temperature at the level of the root head is relatively low.

Although the production of above-ground and above-ground components was seen over the winter period in our studies, crop wintering levels ranged from 96.0 to 98.5%, and their bud development fell between March 1 and 5. Except for the non-fertilizer option, it was fertilized beginning in early spring at a rate of N_{60-120}, P_{90}, and K_{60} kg/ha. It was then watered three times (in April-May) at a rate of 700-750 m^3/ha. Following the rows' softening to a depth of 12–14 cm using a KRX-4 cultivator, weed, disease, and pest control procedures were carried out.

Table 3

Duration of growth and development phases of biennial vegetables in spring and summer
(N. Azimov and "Fayziabad" farms of Payariq district, average 2005-2017)

Indicators	Crops				
	canola	**surepisa**	**Oil radish**	**Bryukva**	**Typhon**
Early spring growth	10.III	11. III	12. III	11. III	9. III
Forming a ball leaf:	14. III	15. III	11. III	16. III	14. III
beginning	9.IY	9. IY	9. IY	11. IY	10. IY
complete	25	24	24	27	26
Duration, day					
Stem extraction:					
beginning	12. IY	14. IY	11. IY	12. IY	12. IY
complete Duration,	2.Y	3. Y	3. Y	2. Y	2. Y
day	20	19	22	20	20
Flowering:					
beginning	19. Y	20. Y	19. Y	21. Y	20. Y
complete	5.YI	7. YI	6. YI	9. YI	8. YI
Duration, day	16	17	17	18	18
Maturation:					
beginning	6. YI	6. YI	7. YI	8. YI	7. YI
complete	25. YI	23. YI	24. YI	26. YI	25. YI

Duration, day	19	17	17	18	18
Spring vegetation (growth-harvest), day	105	104	104	106	104

Table 13 shows that at the "Boghizogan" farm, early spring growth of sugar beet and carrots was noticed on March 10–12, and the development of stalks on April 22–29, as opposed to 5-7 days in Navbahor district (Navoi area) and Gulistan district of Syrdarya region. and it was noticed that it had been shortened to 3-5 days. It should be mentioned that a similar association was seen between the flowering and seed production of cabbage seed stalks and tubers.

According to our research, oil radish and autumn pizza seeds germinate in 6–9 days as a result of the soil's temperature and moisture level, and they continue the absorption process by developing 8–12 pairs of leaves up to winter. Plants will successfully overwinter under these circumstances.

In our trials, plant renewal and bud growth occurred during the first five days of March. During this time, the field moisture capacity must be at least 60% higher than ChDNS, and it must be 70% higher during the flowering phase. Additionally, it was noted that now is the time when nitrogen fertilizers will be in the greatest demand. Importantly, it was discovered that the planting season, rate, fertilizer dosage, and irrigation schedule all directly affect the plants' growth, development, and finally ripening.

Table 4

Effects of planting dates on seed yield and quality indicators of marigolds

(Former "Boghizoghan" and N.Azimov farms, Samarkand region, average 2005-2017)

Crops	**Planting period**	**Productivity, t/ha**	**Weight of 1000 seeds, g**	**Sleeplessness, %**
Oil radish	October 1	2,77	11,19	95,0
	October 15	2,67	11,14	93,7
	October 30	2,58	11,09	94,0
Bryukva	October 1	2,70	2,06	96,0
	October 15	2,80	2,09	95,2
	October 30	2,63	2,05	94,5
Typhon	October 1	2,29	4,04	95,0
	October 15	2,44	3,95	94,0
	October 30	2,50	3,88	92,8

According to the information in the table, the seed yield for oil radish varies from 2.58 to 2.77 t/ha, bryukva from 2.63-2.80 t/ha, and typhoon from 2.29 to 2.50 t/ha, depending on the planting date. Currently, oil radish was planted on October 15 and October 1 and germination and 1000 seed weight were reached; however, the seed yield was higher in bryukva on October 15 and October 30.

Oil radish yielded a yield of 2.58–2.77 t/ha based on the dates of sowing, and seed germination was 93.7-95.0%. Similar information about their planting practices was gathered.

P90K60 (background) + N120 kg/ha was shown to be the ideal fertilizer dose for these crops, and the seed yield was 2.75 t/ha, or 0.76 t/ha greater than the control. In addition to great productivity, it was noted that the weight of 1000 seeds and germination rate were also high. It should be noted that similar information on the watering schedule was gained in the tests.

Conclusion. We may therefore draw the following key findings from our study of both traditional and contemporary Karamguldoshli representatives under the circumstances of the old irrigated gray soils of the Samarkand region:

1. Cauliflower crops develop grass in 9–12 days when the soil is at a specific humidity and temperature, and then double leaves every 11–14 days as they get ready for the winter.
2. When garlic is planted in the fall, as winter draws near, it physically gets ready to build up the necessary components in its body, increasing its tolerance to cold to some extent. In this location, for instance, the average monthly low in January and February was minus 3 to 5 degrees, while the average annual snowfall was between 3 and 5 centimeters.
3. When cultivated for seed, new oil-bearing cabbages (oily radish, autumn mustard, etc.) are permitted to generate an average of 2.5–2.75 tons of seed per hectare or 10–12 tons of oil per hectare, for instance. Additionally, they produce 30-35% more seeds and ripen 10–12 days earlier than rapeseed and mustard.

4. In this instance, they are given a high fertility (92–95%) seed yield of at least 2.5–3.0 t/ha. Moreover, regardless of the reason for which these crops are grown, their economic efficiency is substantially higher. When oil radish produces 3.0 t/ha of seeds in 65 days, that equates to at least 1.0 t/ha of edible oil, which, at the average price, translates to 15.0-17.5 million per hectare in terms of income streams, which is highly beneficial for farms based on the demands of the practice.

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