European Journal of Agricultural and Rural Education (EJARE)
Available Online at: https://www.scholarzest.com
Vol. 6 No. 12 December 2025
ISSN: 2660-5643

EARLY WATERMELON CULTIVATION EXPERIMENT IN KUKDALA DISTRICT, KASHKADARYA REGION

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Article history:

Received: 24th September 2025
Accepted: 20th October 2025

Abstract:

In the Kukdala District of the Kashkadarya Region, Republic of Uzbekistan, a specialized system for early watermelon cultivation has been established. For early production, seeds are sown by December 15 in nurseries into polyethylene cups filled with a special substrate. The seedlings are prepared for 2 months and, when they develop 5–6 true leaves, are transplanted into arched fields covered with two layers of polyethylene film. The transplanted seedlings are cultivated, and watermelon fruits ripen from the end of April to the first ten days of May.

Keywords: watermelon, variety, hybrid seeds, polyethylene film, yield

The soil and climatic conditions of Uzbekistan are favorable for the cultivation of cucurbit crops, which have been grown here since ancient times. As a result of ongoing agricultural reforms in the republic, attention to melon and watermelon production has increased. Especially in the context of a market economy, there is a growing need to expand the cultivation of these valuable crops to ensure food security and enhance export potential. Among the vitamin-rich products available for consumption throughout the year, watermelon occupies a special place.

In our country, 150–155 thousand hectares are allocated annually for cucurbit crops, of which 65–70 thousand hectares are dedicated to watermelon cultivation.

The experience of farmers in Kashkadarya plays an important role in producing early watermelon harvests in the country. Farmers use polyethylene film covers on open fields to grow watermelons for both domestic consumption and export from the end of April to the first ten days of May. In particular, early-maturing F1 hybrid varieties such as Dolby F1, Victoria F1, Talisman F1, Vasco F1, Varda F1, Lady F1, Trophy F1, Pharao F1, Crimson Sweet, and Super Crimson F1 are cultivated.

Seedling Preparation. For early watermelon cultivation, nurseries are prepared by December 15, along with cups and trays for sowing seeds. For seedling preparation, sod soil is thoroughly loosened. To grow seedlings in polyethylene cups, well-prepared soil is mixed with decomposed manure in a ratio of 4:1 (soil:manure). If the manure is not fully decomposed, it is fermented in water for 2–3 months or at least 1 month. This process partially eliminates pathogens, causes weeds to settle at the bottom, or reduces their germination capacity. When growing seedlings in trays, using 100% peat gives the best results. Seedlings are cultivated in the nursery for two months.

When the seeds germinate and the seedlings develop 1–2 true leaves, the first fertilization is carried out. For this, 13–15 grams of nitrogen, 18–20 grams of phosphorus, and 15–20 grams of potassium fertilizers are dissolved in 10 liters of water and used to irrigate the seedlings. This solution is sufficient to fertilize seedlings on an area of 3–3.5 m². The second fertilization is performed 10–15 days before transplanting the seedlings into the field, with the amount of fertilizers applied being doubled compared to the first application. Seedlings are transplanted to open fields when they have 5–6 true leaves. For one hectare, 7.1–7.5 thousand cups of seedlings are prepared.

Land preparation for planting. The field intended for watermelon planting is most effectively plowed in autumn and re-plowed in spring, which increases the efficiency of soil preparation. The field is worked with a chisel plow and harrowed. Ridges are formed at intervals of 3.8–4 meters, with side furrows 90 cm wide.

Crop Management. The polyethylene film and arches are removed after one month. After removal of the arches, the ridges are loosened 1–2 times with a chisel plow, and the furrows are leveled. Measures are carried out to control diseases and pests.

Fertilization: Before planting, 10–15 tons of well-decomposed manure and 250–300 kg of ammophos are applied per hectare. During the growing period, plants are fertilized 2–3 times via drip irrigation with nitrogen fertilizers (150 kg of nitrogen per hectare in pure form). Throughout the growing season, fertigation is performed 7–8 times using drip irrigation.

HARVESTING. The first watermelon harvest ripens from the end of April to the first ten days of May. Harvesting is carried out twice. During the first harvest, an average of 4,000 standard fruits per hectare are collected, and during the second harvest, 3,000 fruits. The average yield is 35–40 tons per hectare.

CONCLUSION

Early watermelon cultivation in the Kukdala District of the Kashkadarya Region, Republic of Uzbekistan, has proven to be highly effective when using specialized nurseries, polyethylene film covers, and drip irrigation. Proper seedling preparation, timely fertilization, and correct agronomic practices allowed harvesting as early as the end of April to the beginning of May.

The implementation of these methods improves the efficiency of water and land resource use, enhances food security, and increases the country's export potential. These results confirm the necessity of an individualized approach to irrigation and fertilization rates depending on the variety and plant growth stage, which is especially important for early watermelon cultivation under the conditions of Uzbekistan.