SUNSHINE AGRICULTURE
e-Newsletter

ISSN (E): 2583 – 0821

Sun. Agri.:e- Newsletter, (2025) 5(3), 30-33

Article ID: 369

Cultivation of Muskmelon (*Cucumis melo*): A Comprehensive Guide

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Available online at
http://sunshineagriculture.vitalbiotech.org/

Article History
Received: 15. 02.2025
Revised: 17. 02.2025
Accepted: 21. 02.2025

INTRODUCTION

Muskmelon, commonly referred to as *Cucumis melo*, is a popular summer fruit consumed for its juicy, sweet, and aromatic flesh. It belongs to the Cucurbitaceae family and is cultivated extensively across tropical and subtropical regions of the world. The fruit is rich in nutrients such as vitamins A and C, essential minerals, dietary fiber, and powerful antioxidants, making it not only a delicious treat but also a healthy one.

Climatic Requirements

Muskmelon requires a warm and dry climate for optimum growth and fruit development. It is a heat-loving crop and highly sensitive to frost, cold winds, and high humidity. The ideal temperature ranges for different growth stages are:

- Seed germination: 25–30°C
- Vegetative and flowering stages: 24–32°C

High humidity or rain during flowering and fruit-setting stages can lead to poor pollination and increased disease incidence. Bright sunshine during fruit maturation improves the sugar content, flavor, and aroma of the fruit.

Soil Requirements

Muskmelon can adapt to different soil types but performs best in light, sandy loam to loamy soils that are rich in organic matter. Key soil requirements include:

- Well-drained soil to avoid waterlogging, which can cause root rot.
- pH range: 6.0 to 7.0 for optimal nutrient availability.
- Good aeration in the root zone to support microbial activity and healthy root growth.

Avoid heavy clay soils or poorly drained fields, as they can severely affect plant development and yield.

Popular Varieties

Different muskmelon varieties have been developed for specific climatic zones and market needs. Some widely cultivated and improved varieties include:

- Pusa Sharbati – An early-maturing variety with soft, sweet flesh and good market appeal.
- Arka Jeet – A high-yielding hybrid developed by IIHR with excellent sweetness and firm flesh.
- Hara Madhu – A North Indian favorite, known for its rich sugar content and long shelf life.
- Punjab Sunehri – Ideal for Punjab and northern plains; produces uniform fruits with good taste.
- Kashi Madhu – Developed by IIVR, this variety is moderately resistant to powdery mildew and suitable for open-field cultivation.

Field Preparation

Proper field preparation is crucial for achieving high productivity in muskmelon cultivation:

- Deep ploughing should be done 2–3 times to break clods and remove weeds.
- Apply well-decomposed farmyard manure (FYM) at the rate of 20–25 tons per hectare during final land preparation to enhance soil fertility and microbial activity.
- Prepare raised beds or ridges spaced adequately to allow drainage and reduce the chances of water stagnation near plant roots.

Sowing Time

The suitable time for sowing muskmelon depends on regional climatic conditions:

- Northern India: February to March (spring-summer season)
- Southern and Western India: November to February (rabi season)
- Hilly areas: April to May (after the risk of frost is over)

Timely sowing ensures good crop establishment and prevents yield loss due to climatic stresses.

Seed Rate and Sowing Method

- Seed rate: 1.5–2.0 kg per hectare.
- Soak seeds in clean water for 6 to 8 hours before sowing to accelerate germination.
- Seeds can be sown directly in the main field using ridge and furrow method or raised beds.

Recommended spacing:

- Between rows: 1.5 to 2.0 meters
- Between plants: 60 to 90 centimeters

Maintain 2–3 vigorous seedlings per hill after thinning for proper plant population.

Manures and Fertilizers

Balanced nutrition is key to healthy vine growth and high fruit yield:

- FYM: 20–25 tons/ha should be applied during field preparation.

Chemical fertilizers (per hectare):

- Nitrogen (N): 100 kg
- Phosphorus (P_2O_5): 50 kg
- Potassium (K_2O): 50 kg

Application schedule:

- Apply half the nitrogen and the full dose of phosphorus and potassium as a basal dose at the time of sowing.
- Apply the remaining nitrogen as top-dressing 30–35 days after sowing, preferably before flowering.

Irrigation

Proper irrigation is essential for consistent vine growth and fruit development:

- Apply light and frequent irrigations to maintain uniform soil moisture.
- Irrigation interval: Every 5–7 days during the vegetative stage and flowering.
- Avoid over-irrigation during the fruit ripening stage to enhance sugar accumulation and prevent cracking.
- Drip irrigation is highly recommended for better water use efficiency and disease control.
- Avoid sprinkler irrigation, especially during flowering, as it may hinder pollination.

Intercultural Operations

To ensure healthy crop growth, the following intercultural practices are recommended:

- Thinning: Remove weak seedlings and maintain 2–3 healthy plants per hill.
- Weeding: Regular weeding, especially in the first 4–5 weeks, prevents competition and improves aeration.
- Mulching: Apply organic (straw, grass) or plastic mulch to conserve moisture, control weeds, and maintain soil temperature.
- Training and pruning: Pinching the apical buds encourages branching and fruit set. Remove weak lateral shoots to promote growth of main vines.

Pest and Disease Management

Common Pests

- **Red Pumpkin Beetle:** Feeds on seedlings; controlled using neem-based sprays or chemical insecticides like malathion (0.05%).
- **Aphids and Whiteflies:** Suck plant sap and transmit viruses. Use imidacloprid (0.3 ml/L) or neem oil spray for control.

Common Diseases

- **Powdery Mildew:** White powdery spots on leaves; control with wettable sulphur (2 g/L).
- **Downy Mildew:** Yellow to brown patches on foliage; controlled with metalaxyl or mancozeb.
- **Fusarium Wilt:** Causes wilting and yellowing; prevented by crop rotation and use of resistant varieties.

Harvesting

Muskmelon fruits mature in about 70 to 90 days after sowing, depending on the variety and environmental conditions. Signs of maturity include:

- Crack formation around the stem (slip stage), indicating natural fruit detachment.
- Characteristic aroma and color change of the rind.
- Slight softening at the blossom end.

Fruits should be harvested during cool hours (early morning or evening) to avoid sun damage and retain freshness.

Yield

Under good management conditions, the average yield of muskmelon ranges from 20 to 30 tons per hectare. High-yielding hybrids and improved irrigation and fertilization can push yields even higher.

Post-Harvest Handling

- Handle fruits carefully during harvest and transport to prevent bruising.
- Grading is done based on fruit size, shape, and ripeness level.
- Store at 10–15°C with moderate relative humidity (85–90%) to prolong shelf life and preserve quality.
- Use ventilated crates or boxes for transport to prevent spoilage.

CONCLUSION

Muskmelon cultivation offers a highly profitable opportunity for farmers, especially in regions with hot and dry climates. By adopting improved agricultural practices, timely pest and disease management, and sustainable techniques such as drip irrigation and organic manuring, farmers can achieve higher yields and better-quality produce. The increasing demand for fresh fruits and health-conscious consumers makes muskmelon an economically viable and environmentally sustainable crop for modern agriculture.

REFERENCES

Manchali, S., & Murthy, K. N. C. (2020). Muskmelon. In *Nutritional Composition and Antioxidant Properties of Fruits and Vegetables* (pp. 533-546). Academic Press.

Milind, P., & Kulwant, S. (2011). Musk melon is eat-must melon. *Irjp*, *2*(8), 52-57.

Molina, R. V., Nuez, F., Cuartero, J., Gomez-Guillamon, M. L., & Abadia, J. (1989). Variability and correlations in muskmelon in relation to the cultivation

method. *Theoretical and applied genetics*, *78*, 411-416.

Pansare, U. D., Kshirsagar, A. V., Dhakne, V. R., & Bochare, S. V. (2023). Production techniques and constraints in Muskmelon (*Cucumis melo* L.) cultivation. *The Pharma Innovation Journal*, *12*(9), 2546-2551.

Pradi Vendruscolo, E., Cardoso Campos, L. F., Seleguini, A., Batista Martins, A. P., & Ferreira de Lima, S. (2017). Economic viability of muskmelon cultivation in different planting spacing in Brazil central region. *Revista Facultad Nacional de Agronomía Medellín*, *70*(3), 8319-8325.

Venkatesan, K., Reddy, B. M., & Senthil, N. (2016). Evaluation of Muskmelon (*Cucumis melo* L.) genotypes for growth, yield and quality traits. *Electronic Journal of Plant Breeding*, *7*(2), 443-447.