



WATERMELON

GENERAL INFORMATION

Watermelon is originated in South Africa. It is an important cucurbitaceous vegetable in India. It is an excellent desert fruit and its juice contain 92% water along with proteins, minerals and carbohydrates. In Japan, cubic shape watermelon are popular, they grow watermelon in glass box and give cubic shape. Watermelons are mainly cultivated in Maharashtra, Karnataka, Tamil Nadu, Punjab, Rajasthan, Madhya Pradesh, and Uttar Pradesh.

CLIMATE

Temperature

20-30°C

Rainfall

50-75mm

Harvesting Temperature

25-30°C

Sowing Temperature

20-25°C

SOIL

Watermelon grows well in deep fertile and well-drained soil. It gives best result when grown on sandy or sandy loam soil. Soil having poor drainage capacity is not suited for watermelon cultivation. Follow crop rotation as continuous growing of same crop on same field leads loss of nutrients, poor yield and more disease attack. pH of soil should be in between 6-7.

POPULAR VARIETIES WITH THEIR YIELD

Improved Shipper: It is developed by PAU, Ludhiana. Fruits are large size, skin color is dark green. These are moderately sweet with TSS 8-9%.the average yield is 70-80qtl per acre.

Special No.1: It is developed by PAU, Ludhiana. Fruits are round and small in size, flesh is of red color. These are early maturing varieties. TSS is lower than Improved Shipper.

Sugar Baby: It gives an average yield of 72qtl/acre. It has dark red color skin and contains 9-10% sucrose content.

Other state varieties:

Varun, Yuvaraj, Aayesha, Madhubala, Chetan, NS 295, NS 34, NS 450, Arjun, Sumo, KSP 1081, Lalima and Raja.

Exotic Varieties: China - Watermelon Hybrid Yellow Doll, Water Melon Hybrid Red Doll. USA - Regency, Royal Flush, Royal Majesty, Royal Sweet, Paradise, Ferrari, Sunrise etc.

Asahi Yamato: Developed by IARI, New Delhi. This variety gives medium sized fruits with weight of 6-8kg. The variety is ready to harvest in 95days. Flesh is of deep pink color. The fruits contain 11-13% of TSS content.

Sugar Baby: Developed by IARI, New Delhi. Fruits are this variety are small in size, round shape and fruits average weight of 3-5kg. Skin is of bluish black and flesh is of deep pink color. Seeds are of small size. The fruit contains 11-13% TSS content. It gives an average yield of 72qtl/acre.

LAND PREPARATION

Plough land and bring to fine tilth. In North India, sowing is done February - March month. In North east and west India sowing is done during November to January. Watermelon can be direct seeded or transplant in nursery and then transplanted to main field.

SOWING

Time of sowing

In north it is sown during middle of January to March and in November to December.

Spacing

Depending upon sowing method spacing may get vary. In pit method use row to row spacing of 2-3.5m and 60 cm between two plant.

Sowing Depth

Plant seed about 2-3cm deep.

Method of sowing

For sowing different methods of planting like furrow method, Pit method and hill method can be used depending upon climate and season.

Furrow Method: Sowing is done on either side of furrows. Sow 3-4 seeds (After germination keep only healthy seedling) at a time and keep plant to plant distance of 60-90cm.

Pit Method: Sow 4 seeds in pit. For that make pit of 60x60x60cm at distance of 2-3.5m between two rows and 0.6-1.2m between plants. Fill pit with well decomposed cow dung and soil. After germination keep only one seedling.

Hill method: Similar to pit method. In this, pit of 30x30x30cm pits are made at distance of 1-1.5m. Two seeds are sown per hill.

SEED

Seed Rate

For sowing one acre land, seed rate of 1.5 to 2 kg is required.

Seed Treatment

Before sowing treat seed with Carbendazim@2gm/kg of seeds. After chemical treat seeds with Trichoderma viride@4gm per kg of seeds. Dry seeds in shade and then do sowing immediately.

FERTILIZER

Fertilizer Requirement (kg/acre)

UREA	SSP	MURIATE OF POTASH
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55	100	25
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Nutrient Requirement (kg/acre)

NITROGEN	PHOSPHORUS	POTASH
25	16	15

Apply Farm Yard Manure or well decomposed cowdung@8-10tonnes per acre. Apply Nitrogen@25kg, Phosphorus@16kg and Potash@15kg in form of Urea@55kg, Single Super Phosphate@100kg and Muriate of Potash@25kg per acre. Apply whole amount of Phosphorus, Potash and one third amount of Nitrogen before sowing seed. Apply remaining dose of Nitrogen near vines base, avoid touching it and mixed well in soil during initial growth period.

When crop is of 10-15 days old, for good growth of crop along with good quality, take spray of 19:19:19+Micro-nutrients@ 2-3gm/Ltr of water. Prevent flower drop and increase yield up to 10% take spray of Humic acid@3ml + MAP(12:61:00)@5gm/Ltr of water at flowering stage. Spray Salicylic Acid(4-5 tabs of Aspirin Tablet 350mg)/15Ltr water at initial flowering, fruiting and maturity stage, One or two times with 30days interval. After 55days of sowing spray 13:00:45@100gm + Hexaconazole @250ml/150Ltr water for fast development of fruits and protection against powdery mildew. 65days after sowing to increase in fruit size, sweetness and colour take spray with 00:00:50 @1.5kg/acre using 100gm/15Ltr of water.

WEED CONTROL

Keep bed weed free during early stage of growth. In absence of proper control measures, weed can cause yield loss of 30%. 15-20days after sowing carry out intercultural operations. Depending upon severity and intensity of weeds, two to three weeding are required.

IRRIGATION

Apply irrigation, every week in summer season. At time of maturity give irrigation only when needed. Avoid over flooding in watermelon field. At time of applying irrigation, should not wet the vines or vegetative parts, especially during flowering and fruit-set. Avoid frequent irrigation in heavy soil as it will promote excessive vegetative growth. For better sweetness and flavour, stop irrigation or reduce watering 3-6days before harvesting.

PLANT PROTECTION



- **Pest and their control:**

Aphid and Thrips: They suck the sap from the leaves resulting in yellowing and dropping of leaves. Thrips results in curling of leaves, leaves become cup shaped or curved upward.

If infestation is observed in field, to control spray the crop with Thiamethoxam@5gm/15Ltr of water. If infestation of sucking pest and powdery/downy mildew is observed, take spray of Thiamethoxam and 15days after spraying, spray with Dimethoate@250ml+Tridemorph@100ml/200Ltr of water.



Fruit fly: It is serious pest. Females lay eggs below epidermis of young fruits. Later on maggots feed on pulp afterward fruits starts rotting.

Remove and destroyed infected fruits away from field. If infestation is observed, at initial stage take spray of Neem seed kernal extracts@50gm/Ltr of water. Take spray of Malathion@300ml + Jaggery@100gm in 200litre of water 3-4times at 10 days interval.



Anthracnose: Anthracnose affected foliage appears scorched appearance.

As a preventive measure, treat seed with Carbendazim@2gm/kg of seed. If infestation is observed in field, take spray of Mancozeb@400gm or Carbendazim@400gm/200liter of water.



- **Disease and their control:**

Powdery Mildew: Patchy, white powdery growth appears on upper surface of leaves also on main stem of infected plant. It parasitizes the plant using it as a food source. In severe infestation it causes defoliation and premature fruit ripening.

If infestation is observed take spray of water soluble Sulphur@20gm/10Ltr of water 2-3 times with interval of 10 days.



Sudden wilt: It can affect crop at any stage. Plant get weak and give yellow appearance at initial stage, in severe infestation complete wilting is observed.

Avoid water logging in field. Destroy infected parts away from field. Apply Trichoderma Viride@1kg/acre mixed with 20kg FYM or Well decomposed Cowdung. If infestation is observed, take spray of Mancozeb or Copper Oxychloride@400gm/200liter or Carbendazim or Thiophanate-methyl@200gm/200liter of water.



Leaf Miner: Maggots of leaf miner feed on leaf and make serpentine mines into leaf. It affects the photosynthesis and fruit formation.

If infestation of leaf miner is observed, spray of Abamectin@6ml/15Ltr of water should be done to get rid of leaf miner.

HARVESTING

If tendril near stem gets dried also whitish color of fruit which touch to ground get yellowish then assume that fruit is ready for harvesting. On thumping melon if it sounds hollow (usually as a dull thump or thud) then it is ready for harvest and immature fruit sounds dense. Dont pick immature fruits as they ripe only when attached to vine. Immature fruit don't have rich sugar content or color. To

harvest ripe fruit, cut stem 1" from fruit with a pair of sharp pruners or knife. Fruit can be stored in a cool humid environment.

POST-HARVEST

Grading is done on basis of size of fruit. It can be store for 14 days at temperature of 15°C. Do not store watermelon with apples and banana as it developed off flavor along with softening of fruit.

REFERENCES

- 1.Punjab Agricultural University Ludhiana
- 2.Department of Agriculture
- 3.Indian Agricultural Research Institute, New Delhi
- 4.Indian Institute of Wheat and Barley Research
- 5.Ministry of Agriculture & Farmers Welfare