

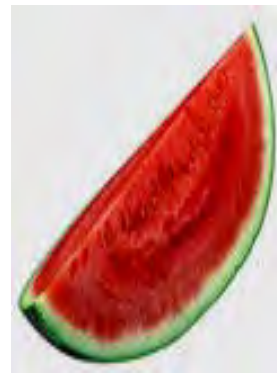
Watermelon production

IDEA-NEW



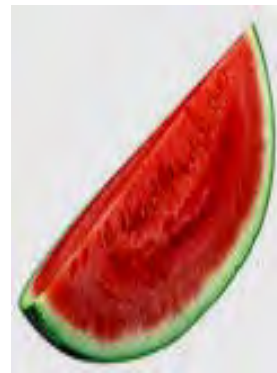
Watermelon Production

- Watermelon is a warm season crop planted in during the spring-summer season .
- Watermelon is grown in different parts of Afghanistan
 - In ER, Batikot district in Nangarhar province is famous for the watermelon production



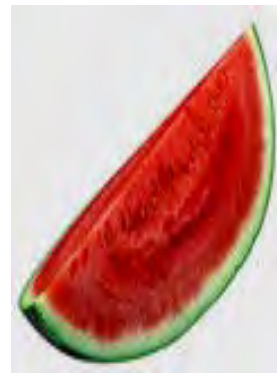
Cultivars

- Watermelons range in shape from round to oblong.
- Rind colors can be light to dark green with or without stripes.
 - Light green and gray-green watermelons are less subject to sunburn injury than dark green and striped varieties.
- Flesh colors
 - Can be dark red, red or yellow



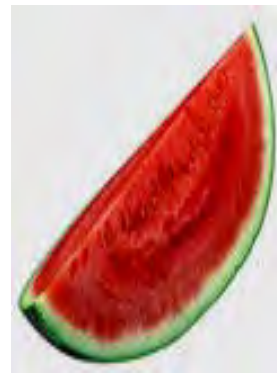
Watermelon Cultivars Planted in ER

Cultivar	Days to Maturity	Shape	Weight (Kg)	Rind color	Flesh color	Comments
Glory (F1)	75-85	Oblong	8-10	Green	Pinkish red	Brix 11*
Sugar Baby (OP)	75	Round	4-5	Deep green	Bright Red	Brix 11*
Charleston grey (Op)	85	Elongated	12-16	Gray green	Red, firm, Crisp	Brix 11*; tolerant to <i>Fusarium</i> wilt and <i>Anthracnose</i>
Crimson sweet (H)	85	Almost round	11	Light green with dark green stripes	Crimson red	Brix 11*; tolerant to <i>Fusarium</i> wilt and <i>Anthracnose</i>



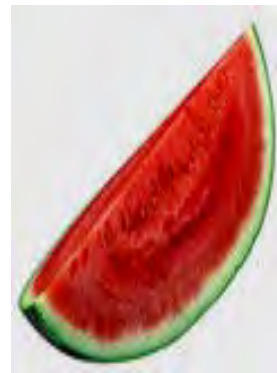
Climate

- Watermelon needs a long growing season with high temperatures, (21 – 30 °C) and low humidity.
- Temperatures higher than 35 °C and lower than 10 °C delay growth .
- For uniform seed germination, temperatures must be > than 16 °C.



Soils

- Watermelons are adapted to many types of soil
 - Well-drained, deep sandy loams are best suited for this crop.
 - When planted on very heavy soils, the plants develop slowly.
- Watermelons are the most acid tolerant of all cucurbits
 - Can grow in soil pH of 5.0 – 6.8



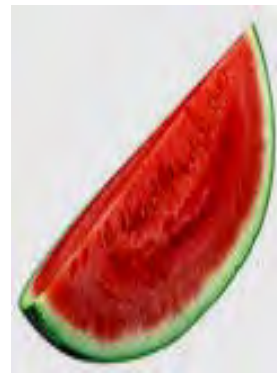
Fertilization



- Basal application, applied during bed formation
 - Animal manure, 6 MT/Jerib
 - DAP, one bag/Jerib
- Top dressing, 40 days after planting
 - Urea, one bag/Jerib
- To improve fruit quality, apply calcium and potassium

Planting Technique

- Direct seeding
 - 2 – 3 seeds/station.
 - Depth of seeds, 2 – 2.5 cm.
 - Distance between stations, 50 cm
 - Seeds will germinate in 5-12 days
 - Thin to 2 plants/station at the 3-4 leaf stage
 - Seeding rate is 600 g. to 1 kg/jerib
- The planting beds are 2.5 m wide.



Planting Technique

- Watermelon can be transplanted but the seedlings are very delicate and the young stems are susceptible to damage.
- Containerized seedlings can be transplanted 2 weeks after germination when they are 8 cm high.
- After planting or transplanting make a fungicide application of Benlate (4g./l).

Watermelon Seedlings

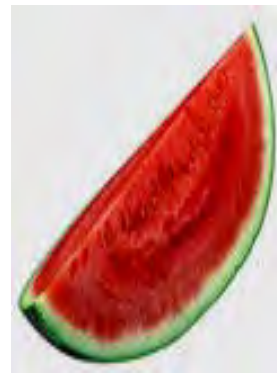






Irrigation

- Irrigate immediately after sowing
- Irrigate again 5 - 6 days later and then after 7-10 days for five weeks.
- Critical periods
 - Before seedling emergence,
 - At early bloom,
 - The last ten days before harvest
- Avoid irrigate late afternoon or evening to reduce foliage diseases
- Excessive irrigation at the ripening time cause
 - white heart,
 - the fruit to burst and
 - low sugar content



Stem Tipping and Fruit Thinning

- Tipping and fruit thinning are practiced by farmers who want to produce quality watermelons of uniform size for the market.
 - Each plant should be trimmed to three primary stems by cutting or pinching off the weaker stems.
 - It is recommended to leave a maximum of three fruits per plant

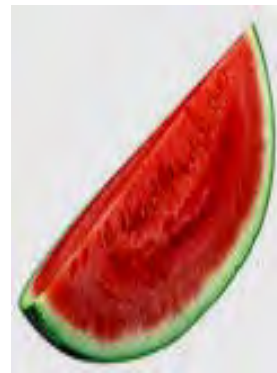


Watermelon Fruit Set

- Good fruit set and development depend upon insects, specially bees, to pollinate the females flowers
- Flowers are receptive to pollen only on the day they open
- If insecticides are needed, they should be used prudently so that the bees will not be killed or displaced from the field during flowering. If pesticides is needed do the application very early during the day or late afternoon to avoid bees activity in the field.

Weed Control

- Weeding
 - During the early stages, once or twice
 - Once the vines have covered the surface, weed pressure may not be a problem
 - Weeding before the top dress Urea application



Aphis, *Aphis gossypii*, *Myzus persicae*

- The melon aphid, *Aphis gossypii*, and the green peach aphid, *Myzus persicae*, are common in melons
- Heavy populations cause plants to yellow and wilt.
- Aphids transmit several viruses that can reduce melon quality. For this reason, aphid populations should be kept to a minimum.



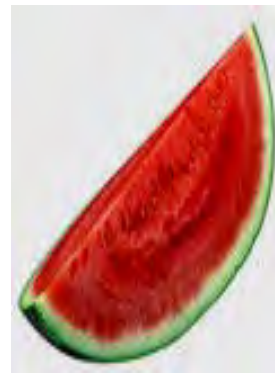
Red Pumpkin Beetle, *Aulacophora foveicollis*

- In watermelon, it makes holes in the cotyledons (first leaves of the seedling) and the young seedlings die.
- Control: Dusting the plants with 1% Lindane or spraying Carbaryl (4 g/liter of water) or Metacid (1ml/liter of water) during the seedling stage effectively controls the pest.



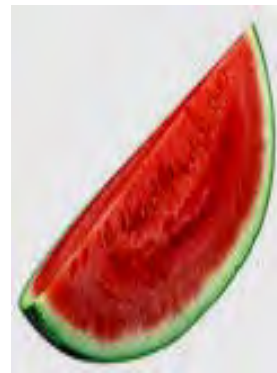
Cutworms, *Feltia subterranean*, *Agrostis ipsilon*

- Cutworms feed on young seedlings or developing melons.
- Damage to the melon is often confined to the rind. Rind damage may be superficial.
- Inspect fields during land preparation and just before and during the planting operation. Treatments should be made either by incorporation of a soil insecticide or a directed spray if plants are already present.



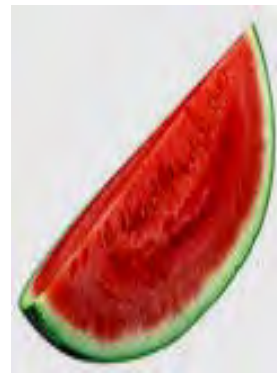
Powdery Mildew, *Sphaerotheca fuliginea*

- Powdery Mildew tends to occur on older leaves first. Symptoms appear as white powdery residue primarily on the upper leaf surface. On the lower surface of the leaves circular patches or spots appear.
- Control: Carbendazin



Fusarium Wilt, *Fusarium Oxysporum f. Sp. Niveum*

- Plants show temporary wilting symptoms, which become permanent and progressive, affecting more vines.
- Eventually, the plant dies and the fruits cannot develop properly
- Dithane M-45



Downey Mildew

Pseudoperonospora spp.

- Downey mildew is a fungus which attacks only the leaves of watermelon. The disease is first seen as yellow angular spots on the upper surface of the leaves.
- Ridomil + Mancozeb



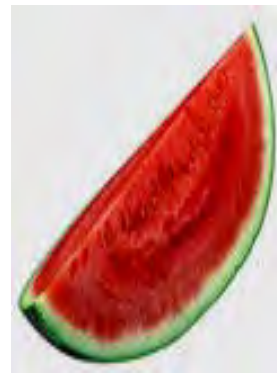
Watermelon Mosaic Virus

- Several viruses affect watermelon; all have similar symptoms. The most common symptom is mottling of the leaf. Some plants are stunted with abnormal leaf shapes, shortened internodes and bushy erect growth habits of some runner tips
- Control Aphids population



Harvest and Post Harvest Handling

- Watermelon fruits mature 75-100 days after planting. External rind will become smooth
- Fruit that is not harvested when fully ripe will lose sweetness and develop an off-taste and rot.
- Watermelons reach maturity, the ground spot changes from white to pale yellow .
- Tendrils nearest the fruit may turn brown and dry.



Post Harvest Handling

- When cutting the fruit from the vine :
 - Leave a 5 – 9 cm piece stem.
 - Protect the fruit from direct sunlight .
 - Pick early in the morning.

