POMEGRANATE CULTIVATION

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Introduction:-

Botanical name - *Punica granatum*

Family - Punicaceae

Native - Iran

2n - 18

❑ Area and production:-

- India ranks first area and production in the world .
- In India , Pomegrenate is cultivated on 1.12 lakh ha. area .
- Maharashtra 73 % of the total area followed by karnataka and Andhra Pradesh other states like AP, UP, Gujarat, Rajasthan, Karnataka and Tamil Nadu share the rest.

❑Flowering and Fruiting:-

- **Flower are born on mature wood of one year old shoot.**
- **Flower are mostly cluster , terminally or in axil of the leaves.**
- **Inflorescence - hypanthodium**
- **Anthesis : - 8 am**
- **Bahar season : -**

Bahar	Flowering Time	Fruiting Time
Ambe bahar	January - February	June – July
Mrig bahar	June – July	October – December
Hasth bahar	Sep. – October	August – September

- **Ambe bahar is most commonly favourable by the grow becouse high yield consequent to profuse flowering.**

Anthesis

Inflorescence

❑ Nutrient:-

Food Value Per 100 g of Edible Portion*

Moisture	72.6-86.4 g
Protein	0.05-1.6 g
Fat	Trace only to 0.9 g
Carbohydrates	15.4-19.6 g
Riboflavin	0.012-0.03 mg
Ascorbic Acid	4-4.2 mg
Citric Acid	0.46-3.6 mg
Boric Acid	0.005 mg

❑ Uses:-

- In northern India, a major use of the wild fruits is for the preparation of "anardana”.
- All parts of the tree have been utilized as sources of tannin for curing leather.
- The juice of wild pomegranates yields citric acid and sodium citrate for pharmaceutical purposes .
- Pomegranate juice enters into preparations for treating dyspepsia and is considered beneficial in leprosy.
- The bark of the stem and root contains several alkaloids including *iso*pelletierine which is active against tapeworms .

❑ Climatic requirements:-

- Pomegranate is sub-tropical fruit.
- The plant favors a semi-arid climate and is extremely drought - tolerant.
- Requires hot and dry climate during the period of fruit development and ripening.
- The optimum temperature for fruit development is 18^{o}C and fruit development is 38 ^{o}C.
- Grow up to 1800 m above sea level .

❑ Soil requirements:-

- Select deep loamy/alluvial soil.
- Also select soil with medium fertility.
- Pomegranate can also be grown in medium and black soil .
- It is salt -hardy fruit plant .

❑ Varieties:-

- **Ganesh** : This is a selection from”Alandi’ developed by Dr. Cheema at Pune .
- The fruit is medium in size .
- **Dholka** : Popular variety of Gujarat with fruits of large size, rind greenish yellow .
- **Seedless (Bedana)** : Fruit medium to large in size, rind brownish green, very sweet, very juicy, soft seeded.
- **Bassein seedless & KVK – 1:** It is soft seeded red colored variety grow in Karnataka .
- **Jalore Selection**: It is soft seeded variety grow in Rajasthan .
- **Kandhary** : It produces large size fruit .
- **Mridula , Jodhpur Local , Alandi etc.**

❑Propagation:-

➢Cutting

•The best time of making the cutting is December – january .

•hardwood cutting 25-50 cm long.

• Treatment with 100 ppm IBA .

•The cuttings are set in beds with 1 or 2 bud above the soil for 1 year, and then transplanted to the field.

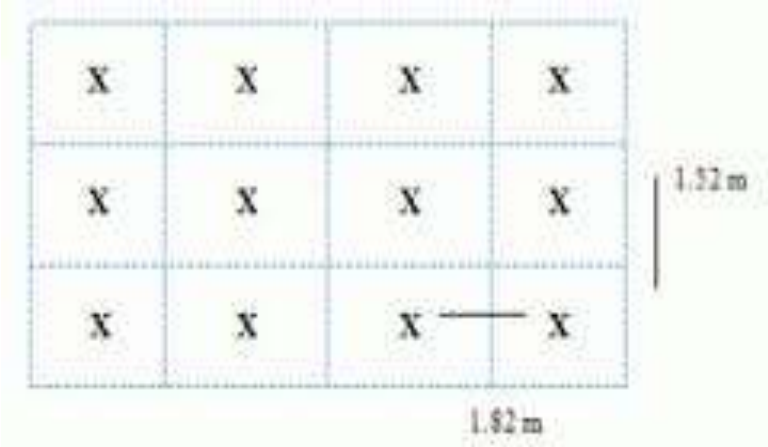
➢Air – layering :

•Pomegranate may also be propagated by air – layering

•Treatment with 1000 ppm IBA .

❑ Spacing:-

- Spacing o 5x5m .
- Square System of Planting.
- Pit size 60x60x60 cm .

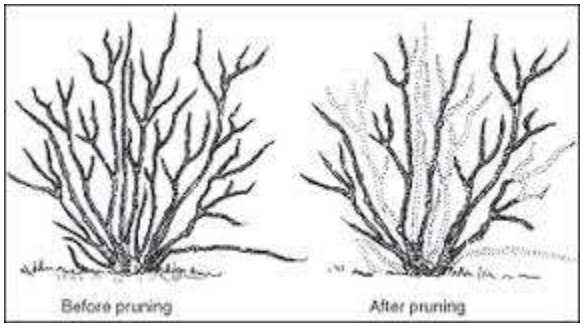


❑ Intercropping:-

- During the initial 3-4 years suitable inter crops like vegetables flower crops &legumes .

Training and pruning

- From second year onwards, established plants may be trained to multiple stem system of training.
- Regular pruning is necessary , remove water sources, weak crotches, dead and died, twigsa, criss-crossing
- Shoots and old spun ,after harvest of fruits every time
- Apply bordaux pest to the cut end



Pruning

Befor training

After training

❑ Interculture :-

- Shallow cultivation in the inter spaces to suppress the weeds, to improve cultivation, infilteration &conservationof soil moisture
- Inter cultivation by ploughing may be done as per the bahar preferred
- Mulch the basin for conservation of moisture &suppress the weeds during the period

❑ Manure and fertilizers:-

- Apply organic & inorganic manures essential for obtain higher yield.
- In northen india manure is applied during december month.

Age of plant (year)	Nitrogen (g/plant)	Phosphorus (g/plant)	Potassium (g/plant)
1- 2	250	125	125
2 -3	500	125	125
3 - 4	500	125	250
4 and above	625	250	250

❑Harvesting:-

•Fruit becomes ready for harvesting in 5-7 months

• Harvest indices

o Color change of the skin from green to reddish yellow or yellow or brown

o Fruit become somewhat soft

o Ridges of the fruit become flat

o When tapped produce metallic sound or cracking sound

o Based beak gets closed

• Harvest the fruit with secateurs/clippers

• Immediately after harvesting move the fruit to pack houses

❑Yield:-

Fourth year : 20 – 25 fruit / plant (4-5 kg)

Ten year : 100 – 150 fruit / plant (20-25 kg)

❑Sorting of fruits , Transport to Pack Houses/Markets

- Sort out the fruit as per the size maturity blemishes
- Pack them in bamboo baskets wooden crates or card board boxes with a cushioning of paddy straw or dry grass
- Transport as quickly as to the markets

❑*Physiological disorder :-*

- ***Fruit cracking***
- **Symptoms of damage**

✓Fruit cracking is a serious disorder.

✓ This physiological disorder observed in young fruits

- **Causes**

✓ Due to boron deficiency and that in fully grown fruits is mainly due to moisture imbalances.

Management

✓Tolerant varieties viz. Bedana Bose and Khog may be cultivated

✓ Spraying with calcium hydroxide soon after fruit set has been found to be beneficial.

Fruit cracking

FRUIT BORERS *Deudorix (Virachola) i*socrates

Symptoms of damage

•Caterpillar bores into young fruits

•Feeds on internal contents (pulp and seeds)

•Fruit rotting and dropping

Management

•Clean cultivation as weed plants serve as alternate hosts

•Adopt ETL (5 eggs/plant)

•Cover the fruit with polythene bags when the fruits are up to 5 cm

•Use light trap @ 1/ ha to monitor the activity of adults

•Insecticides: malathion 50 EC 0.1% or dimethoate 30 EC 0.06%, two rounds, one at flower formation and next at fruit set.

Whitefly, *Siphoninus phillyreae*

Symptoms of damage :

•Nymphs and adults suck the sap from leaves

•Honey dew - development of sooty mould fungus

•Yellowing of leaves.

•Dropping of affected leaves.

Management :

•Field sanitation

•Removal of host plants

•Installation of yellow sticky traps

•Spray neem oil 3% or NSKE 5%

•Release of predators *viz.*, Coccinellid predator, *Cryptolaemus montrouzieri* and lace wing fly, *Mallada astur*