



## Climate-Smart Fruit Crops Which Fruits Will Survive Future Heat and Water Stress

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Imagine standing in an orchard in May. The sun feels hotter than ever before. The soil is dry. The leaves of some trees look tired, almost begging for water. This is not a future prediction it is today's reality.

Climate change is reshaping agriculture across the world. Farmers are facing:

- Higher temperatures
- Frequent heat waves
- Water scarcity
- Irregular rainfall
- Increased drought stress

Fruit crops, which are often sensitive to climate, are especially affected. For example, heat stress in mango during extreme temperatures (41-47°C) caused fruit damage, premature ripening, and quality loss in India.

This raises an important question:

### Which fruit crops will survive future heat and water stress?

The answer lies in climate-smart fruit crops, which are truly nature's survivors. These fruit crops have the natural ability to tolerate high temperatures and continue growing even during extreme heat. They can survive drought conditions by using water efficiently and adapting to limited moisture availability. Unlike sensitive crops, they are capable of producing fruits even under harsh and stressful environmental conditions. Because of their strength and adaptability, these crops are expected to play a major role in the coming years. Climate-smart fruit crops will shape the future of fruit farming by ensuring sustainable production, stable farmer income, and better adaptation to changing climate conditions.

### What Are Climate-Smart Fruit Crops?

Climate-smart fruit crops are those that can:

- Tolerate high temperature
- Survive low water availability
- Adapt to climate variability
- Maintain yield and quality

These fruits have special adaptations such as:

- Deep root system
- Thick leaves
- Water storage tissues
- Efficient water use

Climate resilience refers to the ability of fruit crops to withstand extreme temperatures, drought, and other environmental stresses.

### Why Climate-Smart Fruits Are the Future

Climate-smart fruit crops are important because they:

#### 1. Ensure Food Security

They produce fruits even in drought conditions.

#### 2. Save Water

They require less irrigation.

#### 3. Provide Stable Income

Farmers get reliable yield.

#### 4. Survive Extreme Heat

Some fruits tolerate temperatures above 45°C.

For example:

Ber can survive up to 50°C temperature.

This makes it ideal for dry regions like Rajasthan.

### Major Climate-Smart Fruit Crops

#### 1. Ber: The King of Dryland Fruits

Ber is one of the toughest fruit crops.

##### Why ber is climate-smart

- Survives up to 50°C heat
- Grows in poor soil
- Requires very little water
- Suitable for desert areas

Ber is already popular in Rajasthan.

It is truly a fruit of the future.

#### 2. Pomegranate: The Drought Fighter

Pomegranate is another climate-smart fruit.

It grows well in:

- Dry areas
- Hot climates
- Limited water

Pomegranate produces better fruit quality in dry conditions.

This makes it perfect for water-scarce regions.

#### 3. Jujube (Chinese Ber): The Desert Champion

Jujube is extremely hardy.

It can tolerate:

- High heat
- Low water
- Poor soil

Jujube is highly heat and drought tolerant and requires very little maintenance.

This makes it ideal for climate-smart orchards.

#### 4. Olive: The Survivor Tree

Olive is famous for its drought tolerance.

Olive trees:

- Require very little water
- Survive extreme heat
- Live for centuries

Olive thrives in dry and hot climates.



It is becoming popular in India.

### 5. Dragon Fruit: The Future Fruit

Dragon fruit is a cactus fruit that is naturally adapted to dry and hot climates. It has thick, fleshy green stems that can store water, which helps the plant survive during drought conditions. Because of these water-storing tissues, dragon fruit can tolerate long periods without rainfall or irrigation. This makes it an excellent choice for areas facing water scarcity and climate stress. Due to its drought tolerance, high market value, and low water requirement, dragon fruit is becoming increasingly popular among farmers as a climate-smart and profitable fruit crop.



**TABLE 1: Major Climate-Smart Fruit Crops and Their Climate Tolerance**

Fruit Crop	Heat Tolerance	Water Requirement	Special Feature	Climate Suitability
<b>Ber</b>	Very high (up to 50°C)	Very low	Survives desert	Arid & semi-arid
<b>Pomegranate</b>	High	Low	Better fruit in dry climate	Dry regions
<b>Jujube</b>	Very high	Very low	Hardy and pest resistant	Desert areas
<b>Olive</b>	Very high	Very low	Long lifespan	Dry & Mediterranean
<b>Dragon fruit</b>	Very high	Very low	Water storage tissues	Drought regions
<b>Fig</b>	High	Low	Deep root system	Dry climate
<b>Date palm</b>	Extremely high	Very low	Desert fruit	Arid climate
<b>Aonla</b>	High	Low	Stress tolerant	Semi-arid

### 6. Guava: The Farmer's Favorite

Guava is climate-smart because:

- It tolerates heat
- Produces multiple crops
- Requires moderate water

Guava thrives well in tropical and subtropical climates and produces high yields.

Guava is ideal for future farming.

### 7. Date Palm: The True Desert Fruit

Date palm grows naturally in deserts.

It tolerates:

- Extreme heat
- Severe drought

It thrives above 50°C temperature and needs very little water.

This fruit is perfect for hot climates.

### 8. Fig: The Heat-Loving Fruit

Fig is another strong climate-smart fruit.

It tolerates:

- High temperature
- Drought

Fig can survive up to 45°C and drought conditions.

### 9. Aonla: The Indian Climate-Smart Fruit

Aonla is ideal for India.

It tolerates:

- Heat
- Drought
- Poor soil

It is widely grown in dry areas.

### Climate-Smart Fruit Crops: A Hope for Farmers

Climate-smart fruits bring new hope for farmers facing the challenges of rising temperatures and water scarcity. These crops help farmers reduce the risk of crop failure because they can tolerate harsh weather conditions better than traditional fruits. They also save water due to their lower irrigation requirement, making them ideal for drought-prone areas. At the same time, many climate-smart fruits have good market demand, helping farmers earn better profit and maintain stable income. Farmers in dry regions like Rajasthan should focus more on growing these resilient fruit crops. In the coming years, climate-smart fruits will play a key role in shaping the future of horticulture and ensuring sustainable fruit production.

### Conclusion

Climate change is real, and its effects are already visible in fruit production across many regions. Rising temperatures, irregular rainfall, and increasing water scarcity are making it difficult for farmers to grow traditional fruit crops successfully. To cope with these challenges, farmers must adapt by selecting crops that can tolerate such harsh conditions. Climate-smart fruit crops offer a practical and sustainable solution, as they are capable of surviving future heat and water stress. These resilient fruits will not only help farmers maintain their production and income but also protect overall food security. In the coming years, climate-smart fruit crops will play a crucial role in shaping the future of horticulture and ensuring sustainable fruit farming.