

# Blackberry Production in Hot Climates

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## **Topics:**

- 1. Why Blackberries?**
- 2. The Challenge of Climate Change**
- 3. Intensive Production**
- 4. Agro-Technology for Hot Climates**
- 5. Appropriate Elite Varieties**
- 6. Harvest Strategies**
- 7. Looking Forward**

**The best berries at the lowest cost, and in the most sustainable way...**

**Quality has a cost, but the cost of low quality is higher...**



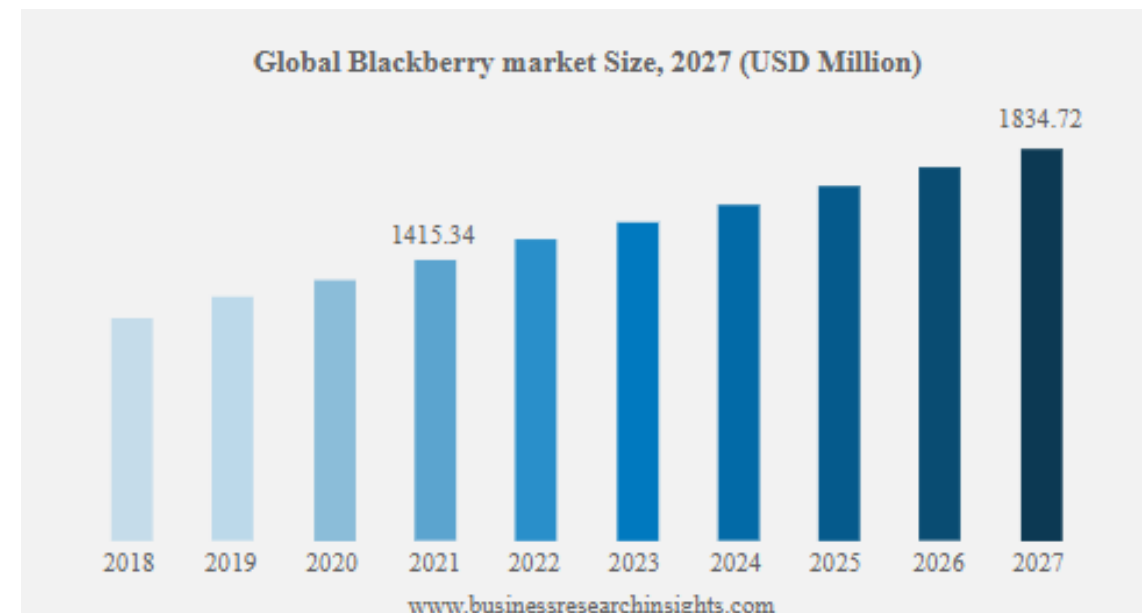
## 1. Why Blackberries?

- World Berry Market
- The Big 4 – Strawberries, Blueberries, Raspberries, Blackberries
- Raising awareness of health benefits



## 1. Why Blackberries?

- Global Blackberry market size
- CAGR (Compound Annual Growth Rate)
- Elite varieties – Improved production, size, taste, shelf life



# 1. Why Blackberries?

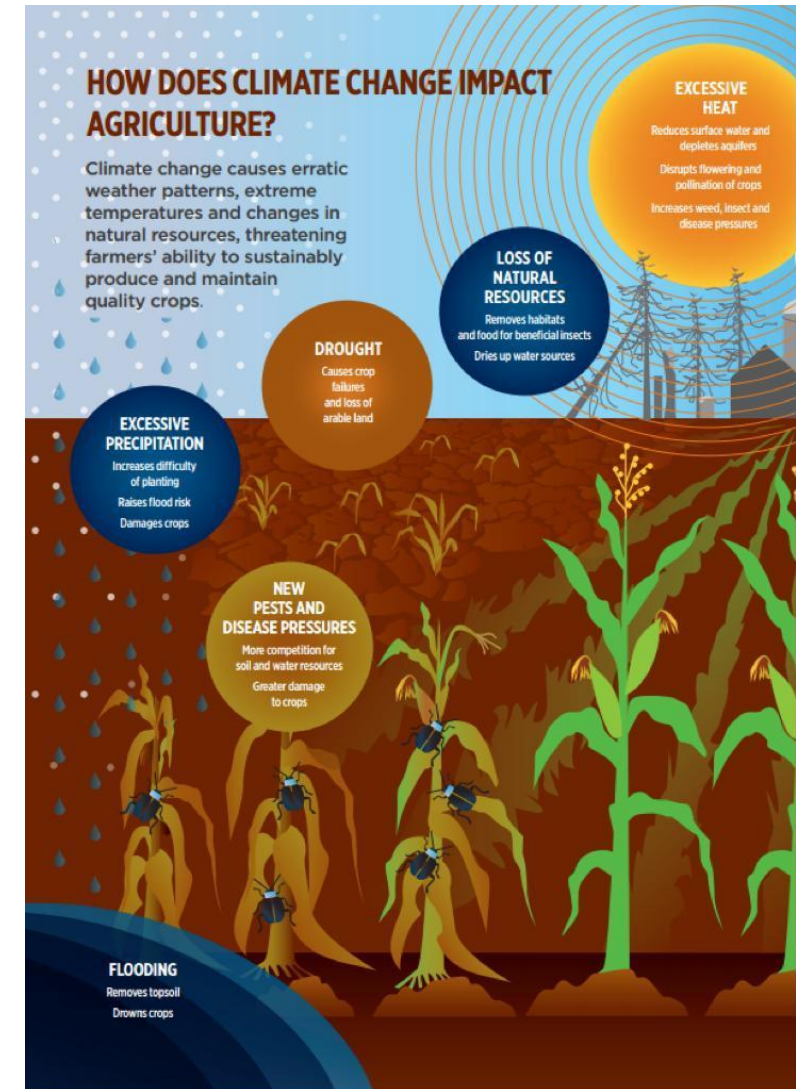
- Latest market trend: Mixed Berries





## 2. The Challenge of Climate Change

- Shift in the weather
- Heat stress – High levels of UV
- Reduced Photosynthesis, less vegetative growth and fruit
- Scorching of leaves, wilting, sunscald



## 2. The Challenge of Climate Change

- White drupelets
- Shriveled fruit
- Hot drying winds





## 2. The Challenge of Climate Change

- Micro-climates – Quantity and quality production
- Diversify the supply chain
- Water shortages – California, Mexico, Spain, Morocco



## 2. The Challenge of Climate Change

- Elite cultivars – Improved production and taste
- Breeding efforts – Adapted varieties
- Genes and traits for higher temperatures



### 3. Intensive Production

- Why use intensive production methods?
- Pots and growing substrates



### 3. Intensive Production

- Drip irrigation
- Computer-controlled fertigation and pH levels
- E.C. – Electrical Conductivity
- Determines fertigation levels





### 3. Intensive Production

- High plant density – 3,200 per Acre
- 30-foot-wide net houses





## 4. Agro-Technology for Hot Climates

- Shade nets – control light quantity & quality
- Micro-climate with diffused light
- Decrease leaf temperature



## 4. Agro-Technology for Hot Climates

- Physical protection – Wind, hail, birds, bats
- Reduce water usage – Evapotranspiration
- Protection against sunburn



## 4. Agro-Technology for Hot Climates

- Photo-selective shade nets
- Colors – Black, white, red, blue
- 40% - 50% - 60% shade
- Solar radiation – Energy for photosynthesis



## 4. Agro-Technology for Hot Climates

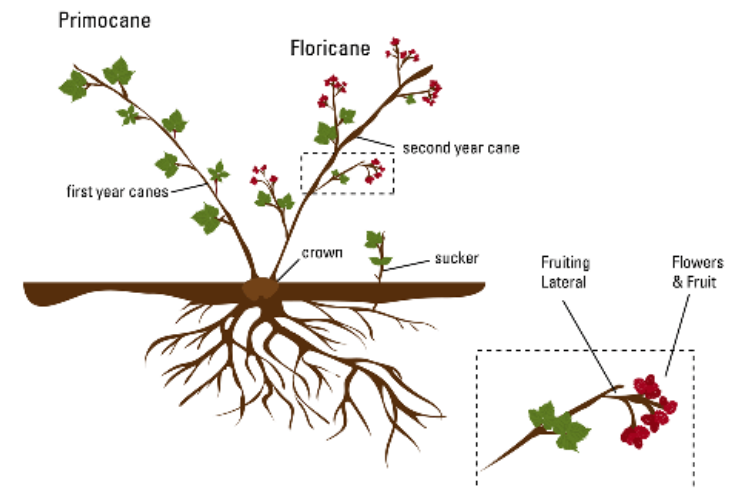
- Use of shade nets vs. overhead cooling
- Evaporative cooling
- Foggers – misters





## 5. Appropriate Elite Varieties

- Floricane? Primocane?
- Elite variety qualities
- More heat tolerant, good storage, extends season, high yield, quality





## 5. Appropriate Elite Varieties

- Prime Ark 45 – University of Arkansas



## 5. Appropriate Elite Varieties

- Prime Ark Horizon – University of Arkansas



## 6. Harvest Strategies

- Ripening blackberries
- Harvest costs – 60%



## 6. Harvest Strategies

- The PickPick
- Robots





## 6. Harvest Strategies

- Uneven coloring – Red and black drupelets
- White drupelets - Sunscald





## 6. Harvest Strategies

- Red Berry Mite – *Acalitus essigi*
- Microscopic invertebrate
- Overwinter under bud scales
- Sprays before bud break



## 7. Looking Forward

- Elite varieties
- Floricane vs. Primocane



## 7. Looking Forward

- Multi-year Primocane production in pots
- Primocane management



## 7. Looking Forward

- Photo-selective shade nets
- Plastic cover and shade nets



***“Who is wise?  
One who learns from everyone.  
From all my teachers I have grown wise”***

Ethics of the Fathers, 4:1



# The outlook for Blackberries



# Thank you for Listening!



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