

# New Raspberry Cultivars for Cold Climates



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# Cornell AgriTech Growing Conditions

- Latitude 42.86; elevation 610 ft.
  - 29 miles south of Lake Ontario
- 90% frost free date ~May 10
- 90% first frost by ~ Oct. 29
  - 172 days outdoors
  - 200 days with tunnels
- Mild winters
  - Rarely below 0° F
  - High rainfall/cloud cover

# High Tunnel Production

## Advantages

- Increased plant vigor
- Increased fruit size and yield
- Reduced fruit rots
- Superior fruit quality
- Expanded season
  - Early and late
- Can be combined with exclusion netting for SWD and other insect control

## Challenges

- Excess vigor
- Increased powdery mildew and possibly late leaf/fruit rust
- Higher management requirements
- Increased mite pressure
- Sprays can be difficult
- Increased double fruit and sunburn/white drupelet





# Raspberry Harvest Timing

Variety	June	July	August	September	October	November
Prelude	---X---			-----X---		
Double Gold	---X---			-----X-----		
Nova	---X---					
Black raspberry	--X--					
Encore	---X---					
Polka			-----X-----			
Joan J			-----X-----			
Himbo Top			-----X-----			
Caroline			-----X-----			
Heritage			-----X-----			
Crimson Treasure				-----X-----		
Crimson Night					-----X-----	
Crimson Giant						-----X-----

# Standard Cultivars

- Prelude
- Nova
- Encore
- Bristol-black
- Jewel-black
- Mac Black-black
- Polka
- Himbo Top
- Joan J
- Caroline
- Heritage

# Newer Raspberry Cultivars

- Eden
- Niwot
- Imara
- Kweli
- Kwanza
- Crimson Night
- Crimson Treasure
- Double Gold



# AC Eden

- Mid-season floriculture
- Medium to large
- Good flavor
- Dull red color
- Ag Canada, Nova Scotia



# Niwot

- 10%-20% of crop in the fall
- Susceptible to powdery mildew
- Medium sized fruit
  - Similar to Bristol
  - Good black raspberry flavor
- Double/split fruit a real problem in the fall
- Mid-season summer crop
  - Overlap with Bristol and Jewel
- Good vigor, tall weepy plants

# Niwot



# Advanced Berry Breeding Cultivars

- Developed in Netherlands
- Primarily targeted for substrate culture
  - Unknown root rot tolerance
  - Unknown cold tolerance
- Developed for wholesale markets
- Marketed exclusively in U.S. by Nourse Farms
  - \$1 per plant royalty if < 5000 plants
  - Annual royalty and fee for > 5000 plants per linear row foot of production

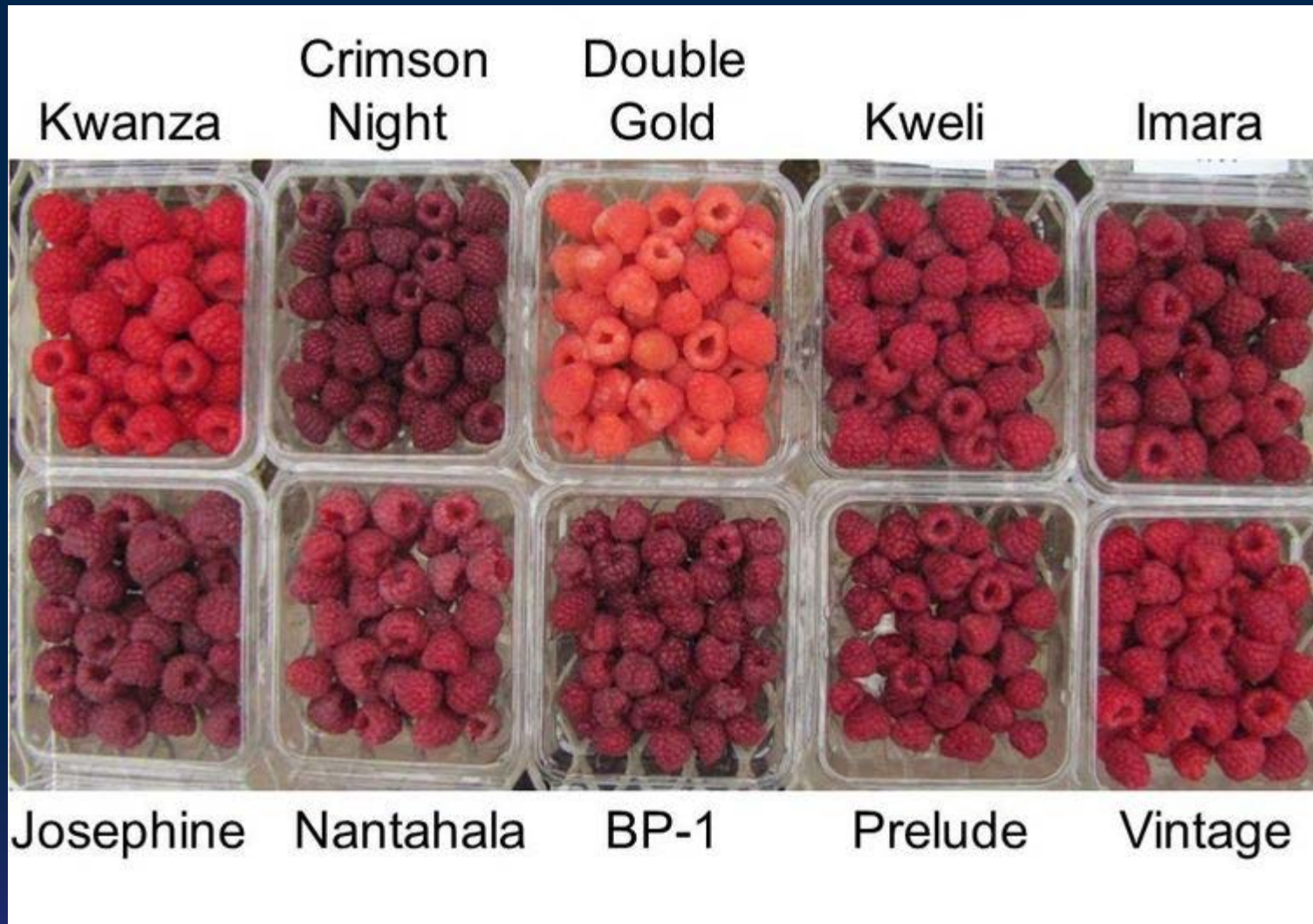


Photo credit: Dr. Eric Hansen, MSU, SWMREC, 2016

[https://www.canr.msu.edu/news/fall\\_fruiting\\_raspberry\\_varieties\\_for\\_2017](https://www.canr.msu.edu/news/fall_fruiting_raspberry_varieties_for_2017)

# Imara

- **Mid-season primocane**
  - 10 days post Polka
- **Large, dark red fruit**
  - Darkens in storage or in high temperatures
  - Similar in color to Polka
- **Good flavor**
  - Not as good as Polka
- **High lateral production**
  - Thinning recommended
  - High yield due to laterals nearly the entire cane length



# Kweli

- Mid-season primocane
  - Few days post Polka
- Large, round fruit
- Good flavor
- Darker red color
- High cane # production
  - Thinning recommended
- Yellow rust susceptible



# Kwanza

- Late season primocane
  - 3 weeks post Polka
- Recommended for substrate
- Large, firm fruit
  - Tender skin
- Good flavor
- Light orange/red color
  - non-darkening in storage





# Mapema

- Primocane
- Little known
- Deep red color



# Crimson Treasure

- Large, firm, bright red, conic fruit
- Good flavor and shelf life
- High yield
  - 11-13,500 lb/ac
  - Long harvest period
- Upright, self supporting canes
  - Highly branched
- Powdery mildew and PRR resistant



# Crimson Treasure



# Double Gold

- Peach colored conic fruit
  - Freezes pink
  - Fairly soft
  - Outstanding flavor
- Very tall, upright plants
  - Suitable for double cropping
- Tolerant to phytophthora root rot





# Crimson Night

- Mid to late primocane fruit
- Dark red conic fruit
- Very sweet distinctive flavor
- Makes dark red jam
- Excellent frozen quality
- Resistant to PM; susc. to PRR



# Crimson Night



# Alternative Floricane Production

- Delay primocane flowering with early season tipping
  - Heritage delayed by 2 weeks
- Late season primocane cultivars
  - Delayed flowering in substrate production caused by late planting
    - Reduced flower initiation
  - Excessive cane height due to shade cloth use in high temperatures
    - Pruning opened flowers/developing fruit
- Pruned primocanes may show better hardiness for floricane production





# Additional Information

- [www.fruit.cornell.edu](http://www.fruit.cornell.edu)
  - Berry page
  - High Tunnel Raspberry and Blackberry production guide
  - Raspberry and Blackberry Production Guide for the Northeast, Midwest, and Eastern Canada- NRAES-35
  - Pest Management Guidelines for Berry Crops
- Penn State High Tunnel Production Manual
  - [plasticulture.cas.psu.edu/manual.htm](http://plasticulture.cas.psu.edu/manual.htm)
- [www.hightunnels.org](http://www.hightunnels.org)

- For additional information
  - [caw34@cornell.edu](mailto:caw34@cornell.edu)
  - Facebook: Berry Breeding at Cornell
- For licensing opportunities contact Jess Lyga at the Cornell Center for Technology Licensing (CCTL)  
[jml73@cornell.edu](mailto:jml73@cornell.edu)
- Represented by the Ontario Berry Growers Association in Canada

**NY16-14**



Ripens mid-September. Large conic.  
Bright red. Good quality.

# NY17-25

- Ripens as early as the first week in August
- Medium height
- Shiny, bright red
- Non-darkening
- Very good quality

