

# Alternative Niche Crop Production

Beach Plum and Black Chokeberry :

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and  
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# An 'Ideal' Alternative Crop

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## During Production

- Efficient nutrient uptake and water use
- Growth Habit – requires limited maintenance and grows quickly
- Pest resistance – requires limited input



## Post Production

- It makes money!
- Attractive color displays and other intrinsic qualities
- Provides a food source for wildlife
- Has other tangible or functional qualities

# Why Native Plants?

## Low levels of input

- Fertilizer
- Water
- Pesticides



# Beach Plum

*Prunus maritima*

- A wild native plum (*Prunus maritima*) inhabiting the Northeast seaboard
- Most commonly found growing near the ocean, sandy soils (coastline) or sand dunes
- Most famous for use in beach plum preserves or jelly, which commands high market demand in New England states
- Research – Dr. Richard Uva—previously at Cornell. Now farms on Eastern Shore at Seaberry Farms





<http://www.beachplum.cornell.edu/>

# Beach Plums in So MD?

- Is there a potential market for direct farm retail sales?
- What are the cultural demands for this crop?
- Can Beach Plums be a low input, sustainable crop?
- Experience with Beach Plums at Upper Marlboro Research Farm.

# Where's the Market?

- Potential Uses Include:
  - Jams, Preserves and Wine
  - Fresh fruit
  - Ornamental value
  - Erosion control





# Beach Plum Establishment

- Transplant in spring
- Choose a soil with good drainage

Upper Marlboro  
Research Farm  
(CMREC)






Prepare for at least a 3 foot weed-free strip

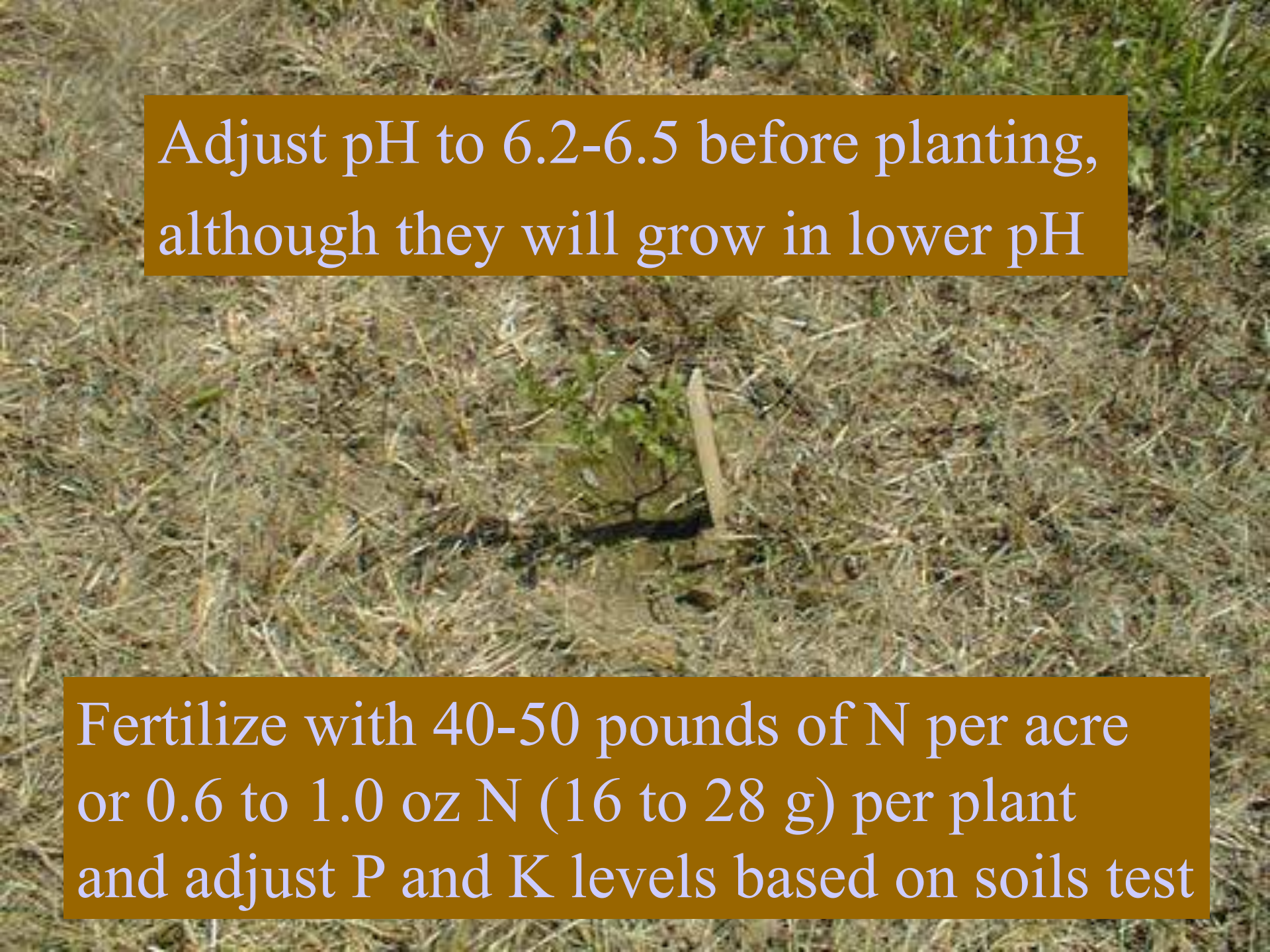




A photograph of a vineyard. In the foreground, there are several rows of young grapevines planted in a field. The vines are small and green, with some showing signs of being recently planted. The ground is covered with dry grass and some bare soil. In the middle ground, there are more rows of grapevines, some of which are more mature and have more leaves. A dirt road or path runs through the vineyard. In the background, there is a dense forest of tall trees with green foliage. The sky is clear and blue.

Space at 7-10 ft x 12 ft spacing,  
depending upon final desired plant size



A photograph of a young green plant growing in a field of dry, yellowish-brown grass. A wooden stake is visible next to the plant. The image is used as a background for text overlays.

Adjust pH to 6.2-6.5 before planting,  
although they will grow in lower pH

Fertilize with 40-50 pounds of N per acre  
or 0.6 to 1.0 oz N (16 to 28 g) per plant  
and adjust P and K levels based on soils test



# Cultivars and Planting Stock

- Few commercial varieties available
- Seed stock is available, mainly from the New England area
- Check the Cornell Beach Plum website and Rutgers Cooperative Extension site for more information

# Beach Plum

## Growth Habit and Pruning

- Beach Plum growth habit can vary widely.
- Most plants are shrub like in appearance.
- Pruning is essential:
  - Prune any low-lying, crossing, dead, diseased or weak wood
  - Next concentrate on removing excess old wood to provide an open canopy
  - Prune in late winter or early spring

Year 1





Year 2-2003



Year 3





Year 3





# Year 4--2005 Trial Overview





# Year 5--2006 Individual Plant Pictures







UNIVERSITY OF  
MARYLAND  
EXTENSION



June, 2010



# Crop Management

- Beach Plums require cross pollination- which is normally accomplished through wild insects (bees)
- A challenge with Beach Plum is the tendency for most wild plants to fruit heavily one year, followed by light fruit loads in consecutive 1-2 years. Newer selections bear more even fruit loads.

# Pest Management

## Disease Control:

- Beach Plums are susceptible to many of the same diseases as other Prunus species.
- Follow a Peach spray schedule.
- Brown Rot will be a consistent problem



<http://www.beachplum.cornell.edu/>

# Pest Management

## Insect Control:

- Plum Curculio and Plum Gouger
- Again, follow a Peach/plum spray schedule.





# Pest Management

## Insect Control:

- Scale
- Japanese Beetle



# Harvest

- Harvest begins in Early August continuing to Early September
- Hand harvest is time consuming— 20 minutes per plant
- Machine harvest with blueberry harvester may be possible, but has not been perfected.

# Harvest







# Yield

- Average yield for young plants is 6-8 lbs per plant, or 2700 to 3600 pounds per acre
- Yield can vary between year
- Processing to Jams and Jellies is most popular product in New England yielding 800-1000 pints per year



Harvest Date	Variety	Yield (lb)
1-Aug	C3	6.5
1-Aug	C-15	17.5
13-Aug	B-5	8
13-Aug	C-16	10.5
13-Aug	C11	8
13-Aug	C12	5.5
17-Aug	A8	11.5
17-Aug	A10	3
17-Aug	B11	15
17-Aug	B12	3

# Production Timeline

- Winter/Early Spring:
  - Prune; remove dead/diseased tissue
  - Apply Dormant oil for scale control
  - Apply dormant herbicide spray
- Early April
  - Apply fertilizer, half of N
  - Plant new crops

# Production Timeline

- Late April
  - Plant will begin bloom
  - Apply early fungicide treatment
- May
  - Evaluate pollination
  - Apply insecticide and fungicide sprays
- June-August
  - Continue with cover sprays
  - Apply second herbicide spray (follow standard plum recs)
    - Gramaxxone + Devrinol or Surflan
  - Brown Rot and Shot Hole Damage



# Production Timeline

- August
  - Evaluate Brown Rot and Shot Hole Damage
  - Begin Harvest
  - Bird Damage?
- September-October
  - Remove leaf drop and fruit mummies from understory



## Beach Plum Nurseries

Wholesale and retail suppliers of beach plum plants.

[Home page](#)

Wholesale suppliers of *Prunus maritima* plants:

**Bailey Nurseries, Inc.**  
1325 Bailey Road  
St. Paul, MN USA 55119-6199  
800-829-8898  
Fax 800-829-8894  
[plants@baileynursery.com](mailto:plants@baileynursery.com)  
<http://www.baileynursery.com>

**J.G. Akerboom**  
700 Main Street  
Cedarville, NJ 08311  
856-447-3346  
[sales@akerboom.com](mailto:sales@akerboom.com)  
[www.akerboom.com](http://www.akerboom.com)

**Princeton Nurseries**  
Ellisdale Road  
Allentown, NJ 08501  
800-916-1776 or 608-259-0492  
[adco@princetonnurseries.com](mailto:adco@princetonnurseries.com)  
[www.princetonnurseries.com](http://www.princetonnurseries.com)

**Concord Nurseries**  
10175 Mile Block Rd.  
North Collins, NY 14111  
(800) 223-2211  
[info@concordnursery.com](mailto:info@concordnursery.com)  
[www.concordnurseries.com](http://www.concordnurseries.com)

<http://www.beachplum.cornell.edu/>



# Chokeberry

*Photinia (Aronia) melanocarpa*

What are Chokeberries?

- A wild native fruit bearing shrub inhabiting the the mid-Atlantic region
- Most commonly found growing in the peidmont and mountain regions in moist soils
- In Eastern Europe it is extensively grown for juice, jelly, wine and color extract production
- Very high anti-oxidant levels





# Black Chokeberry in So. MD?

- Is there a potential market for direct farm retail sales?
- What are the cultural demands for this crop?
- Can Chokeberry be a low input, sustainable crop?

Andrew Ristvey's experience with Black and Red Chokeberry

# Where's the Market?

## Potential Uses Include:

- Jams, Jellies, Juices, Wine
- Ornamental value
- Mitigation, Restoration

\* Needs processing



# Chokeberry Establishment

- Transplant in spring
- Choose a moist soil with good drainage

Wye Research  
and Education  
Center  
(WREC)





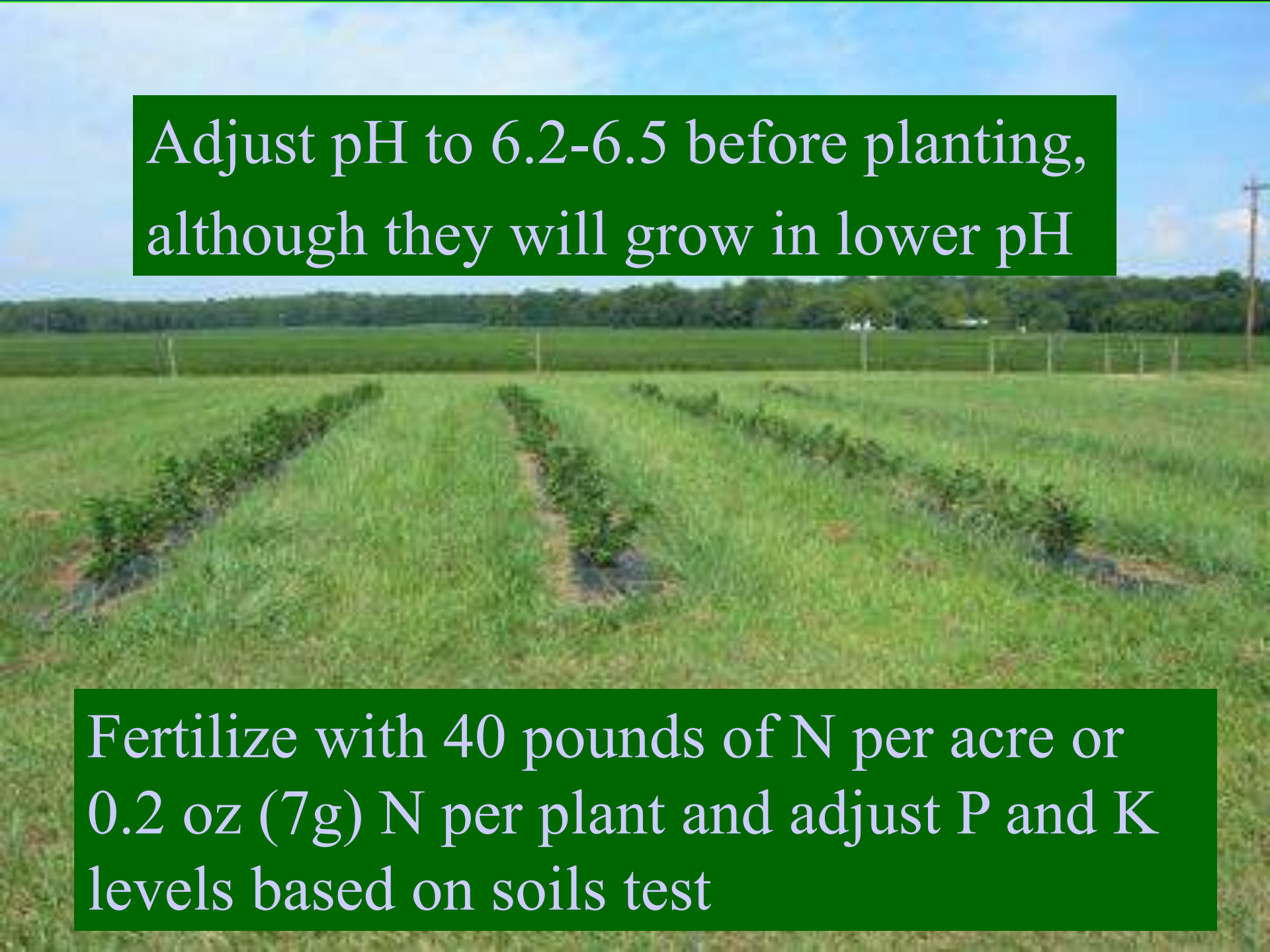
Prepare for at least  
a 3 foot weed-free  
strip





Space at 3-4 ft x 8-10 ft spacing,  
depending upon desired plant size,  
maintenance (mowing), clipping  
and harvesting





Adjust pH to 6.2-6.5 before planting,  
although they will grow in lower pH

Fertilize with 40 pounds of N per acre or  
0.2 oz (7g) N per plant and adjust P and K  
levels based on soils test



# Cultivars and Planting Stock

- ‘Nero’ from Eastern Europe
- ‘Viking’ from Scandanavia
- ‘Autumn Magic’ - new from British Columbia

# Chokeberry

## Growth Habit and Pruning

- Chokeberry growth habit is relatively predictable - plants are shrub like in appearance. Forms hedgerows.
- Pruning is important after 4 years:
  - Prune any low-lying, crossing, dead, diseased or weak wood
  - Next concentrate on removing excess old wood to provide an open canopy
  - Prune in late winter or early spring
  - Increases productivity

# Wye Research and Education Center Queenstown, MD





# Crop Management

- Chokeberries require cross pollination-which is normally accomplished through wild insects (bees)
- So far, very little needs to be done after establishment. Very hardy species.

# Pest Management

## Disease Control:

- Chokeberry does not seem to be susceptible to most major fungal diseases except cedar apple rust or apple quince rust (*Gymnosporangium* sp.)
- Seems to be able to pull out of infection, only a few berries in the cluster show symptoms

# Pest Management

## Insect Control:

- Aphids on new growth
- Japanese beetle
- Lace bug



## Oil Sprays

Plants seem to grow out of damage if you are interested in organic production



# Harvest

- Harvest begins in mid to late August on the shore
- Hand harvest may be time consuming – pull off whole berry bunches
- Mechanical Harvesting is used in Europe
- Hand held blueberry scoops may work



# Yield and Product

- Average yield for young plants is 17-25 lbs per mature plant.
- Yield is typically consistent
- Processing Juice extracts is most popular product in the mid-west and in Europe

- Basic Press

- Freezing



- Heat extraction - Mehu-Liisa Fruit Steamer

# Production Timeline

- Winter/Early Spring:
  - Prune; remove dead/diseased tissue
  - Apply Dormant oil for scale/lace bugs
  - Fertilize at 0.2 oz N per plant



# Production Timeline

- Late April
  - Plant will begin bloom
- May
  - Evaluate pollination
  - Look for Lace Bug
- June
  - Evaluate disease
  - Look for aphids on fresh growth
  - Watch for Japanese Beetles

# Production Timeline

- July
  - Watch for rust symptoms
  - Watch for Japanese Beetles
  - Watch for Lace bug
- August
  - Begin Harvest mid-to end of August
  - Bird problems?
- October or early March
  - Fertilize 0.2 oz N per plant

# More Information

University of Maryland Aronia

<https://extension.umd.edu/aronia>

Midwest Aronia Association:

<https://midwestaronia.org/>

Just Google “Aronia”



# More Information: Beach Plum

Cornell Extension Service

<http://www.beachplum.cornell.edu/>

New Jersey Cooperative Extension

Cape Cod Cooperative Extension

University of Maryland Extension

[http://www.westernmaryland.umd.edu/  
viticulturesmallfruit.htm](http://www.westernmaryland.umd.edu/viticulturesmallfruit.htm)

# Stone - Cherry

## Recommended Varieties For Reduced Sprays

- ◆ Hedelfingen, Schmidt - Sweet Varieties
- ◆ Montmorency - Tart Cherry

## Recommended Rootstocks

- ◆ Mazzard - Sweet Cherry
- ◆ Mahaleb - Tart Cherry

## Ripening Dates

- ◆ June 25 - July 20

## Training Systems

- ◆ Free Standing Open Center
- ◆ Central leader



## ◆ Stone - Cherry

### Pruning

- ◆ Head At Planting To 24-28" Whips, Determine Scaffold Limbs for 24-30" Crotch & Headback Scaffolds
- ◆ Prune Annually During Dormancy In Late Winter
- ◆ Remove Dead Wood

### Planting Instructions, Densities & Pollinators

- ◆ Plant In The Spring, Trim And Spread Roots, Place The Majority Of Roots & Lowest Scaffold Limb Towards Prevailing Wind
- ◆ 200 Trees/Acre; In Row Spacing 15' & Between Row 20'
- ◆ Sweet Types Cross Pollinated, Tart Types are Self-Fruitful





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