National Elm Trial in New Jersey- 2014

• Established: April 12, 2005,
• Located at Rutgers University, Fruit and Ornamentals Research and Extension Center, 283 Route 539, Cream Ridge, NJ 08514-9634
• Visitors are welcome-please check in at the office
• 16 cultivars are in the trial
• The site is on gentle slope with mowed grass
• Insects: Japanese beetle, minor scale and finger galls.
• Best Cultivars: Morton Stalwart Commendation, Frontier, New Horizon, New Harmony, Morton Red Tip Danada Charm,
• Poor Cultivars: Homestead, Morton Plainsman’ Vanguard
• Overall rating based on form and tolerance to Japanese beetle and scale.
National Elm Trial
New Jersey Contact

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- New Brunswick, NJ 08901
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  Lab phone:  848-932-6315
### Elm cultivars in New Jersey National Elm Trial

<table>
<thead>
<tr>
<th>No.</th>
<th>Cultivar Name</th>
<th>Parentage</th>
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<tbody>
<tr>
<td>1</td>
<td>‘Emerald Sunshine’</td>
<td>U. propinqua</td>
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<tr>
<td>2</td>
<td>‘Kuhar II’</td>
<td>U. americana</td>
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<tr>
<td>3</td>
<td>‘Frontier’</td>
<td>U. carpinifolia X U. parvifolia</td>
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<tr>
<td>4</td>
<td>‘Homestead’</td>
<td>U. glabra X U. carpinifolia X U. pumila</td>
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<tr>
<td>5</td>
<td>‘Morton Glossy’ Triumph</td>
<td>U. pumila X U. japonica X U. wilsoniana</td>
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<tr>
<td>6</td>
<td>‘Morton Plainsman’ Vanguard</td>
<td>U. pumila X U. japonica</td>
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<td>7</td>
<td>‘Morton Red Tip’ Danada Charm</td>
<td>U. japonica X U. wilsoniana</td>
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<tr>
<td>8</td>
<td>‘Morton Stalwart’ Commendation</td>
<td>U. carpinifolia X U. pumila X U. wilsoniana</td>
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<tr>
<td>9</td>
<td>‘Morton’ Accolade</td>
<td>U. japonica X U. wilsoniana</td>
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<tr>
<td>10</td>
<td>‘New Horizon’</td>
<td>U. pumila X U. japonica</td>
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<tr>
<td>11</td>
<td>‘Patriot’</td>
<td>(U. glabra X U. carpinifolia X U. pumila) X U. wilsoniana</td>
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<tr>
<td>12</td>
<td>‘Pioneer’</td>
<td>U. glabra X U. carpinifolia</td>
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<tr>
<td>13</td>
<td>‘Prospector’</td>
<td>U. wilsoniana</td>
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<tr>
<td>14</td>
<td>‘Valley Forge’</td>
<td>U. americana</td>
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<tr>
<td>15</td>
<td>‘Princeton’</td>
<td>U. americana</td>
</tr>
<tr>
<td>16</td>
<td>‘New Harmony’</td>
<td>U. americana</td>
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National Elm Trial Plot Plan - New Jersey

Elm Trial
Cream Ridge
Plot Layout

<table>
<thead>
<tr>
<th>Block</th>
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<th>7</th>
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National Elm Trial Plot Plan - New Jersey
Terms

- **Incidence**: percent of leaves or stem or branches affected
- **Severity**: Average amount of surface damaged as a percent for the whole tree
- **Color**: Leaf color rating
  - 1 = poor (yellow/chlorotic)
  - 2 = fair (green/yellow)
  - 3 = good (dark green)
‘Valley Forge’ (*Ulmus americana*)

- **Date:** 7/2014
- **Survival:** 100%
- **Diameter at 1.4m (cm):** 18.8
- **Height (m):** na
- **Crown shape:** Vase (Oval) spreading
- **Insects:**
  - Japanese beetle defoliation: 35% incidence, 34% severity
  - European fruit Lecanium scale: 84% incidence, 24% severity
  - European elm flea weevil defoliation: 0% incidence, 0% severity
  - Tetraneura sp. Finger gall aphid: 20% incidence, 4% severity
  - Fungal leaf spot: negligible
- **Comments:** Strong grower, broad spreading, Color: 2.5

‘Morton Stalwart’ Commendation™ (*U. carpinifolia X U. pumila X U. wilsoniana*)

- **Date:** 7/2014
- **Survival:** 100%
- **Diameter at 1.4m (cm):** 17.0
- **Height (m):** na
- **Crown shape:** Vase
- **Insects:**
  - Japanese beetle defoliation: 24% incidence, 30% severity
  - European fruit Lecanium scale: 18% incidence, 2% severity
  - European elm flea weevil defoliation: 0% incidence, 0% severity
  - Tetraneura sp. Finger gall aphid: 10% incidence, 5% severity
  - Fungal leaf spot: negligible
- **Comments:** spreading or open crown, Color: 2.6
‘Frontier’ (*Ulmus carpinifolia X U. parvifolia*)

Date: 7/2014
Survival: 100%
Diameter at 1.4m (cm): 11.9
Height (m): na
Crown shape: Vase

Damages: Japanese beetle defoliation: 14% incidence, 26% severity
European fruit Lecanium scale: 34% incidence, 10% severity
European elm flea weevil defoliation: 0% incidence, 0% severity
Tetraneura sp. Finger gall aphid: 17% incidence, 2% severity
Fungal leaf spot: negligible

Comments: variable crown upright, tight, spreading or open, Color: 2.7

‘Homestead’ (*U. glabra X U. carpinifolia X U. pumila*)

Date: 7/2014
Survival: 80%
Diameter at 1.4m (cm): 15.0
Height (m): na
Crown shape: Vase

Damages: Japanese beetle defoliation: 55% incidence, 50% severity
European fruit Lecanium scale: 75% incidence, 15% severity
European elm flea weevil defoliation: 0% incidence, 0% severity
Tetraneura sp. Finger gall aphid: 10% incidence, 5% severity
Fungal leaf spot: 28% incidence, 5% severity

Comments: crown open or spreading, Color: 2.7
‘Patriot’  
(U. glabra X U. carpinifolia X U. pumila) X U. wilsoniana

Date: 7/2014
Survival: 100%
Diameter at 1.4m (cm): 17.5
Height (m): na
Crown shape: Vase (oval)
Damages: Japanese beetle defoliation: 25% incidence, 52% severity
   European fruit Lecanium scale: 92% incidence, 49% severity
   European elm flea weevil defoliation: 0% incidence, 0% severity
   Tetraneura sp. Finger gall aphid: 11% incidence, 4% severity
   Fungal leaf spot: negligible
Comments: crown spread, or open, Color: 2.9

‘Pioneer’  
(U. glabra X U. carpinifolia)

Date: 7/2014
Survival: 100%
Diameter at 1.4m (cm): 15.8
Height (m): na
Crown shape: Vase
Damages: Japanese beetle defoliation: 25% incidence, 41% severity
   European fruit Lecanium scale: 54% incidence, 8% severity
   European elm flea weevil defoliation: 0% incidence, 0% severity
   Tetraneura sp. Finger gall aphid: 11% incidence, 4% severity
   Fungal leaf spot: negligible
Comments: crown spreading or open, Color: 2.7
'Emer II' Allee® (*U. parvifolia*)

None of these trees established in 2005

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Date: 8/2014  
Survival: 0%  
Diameter at 1.4m (cm): na  
Height (m): na  
Crown shape: na  
Insects:  
Comments:

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‘New Horizon’ (*U. pumila X U. japonica*)

Date: 7/2014  
Survival: 100%  
Diameter at 1.4m (cm): 18.0  
Height (m): na  
Crown shape: Vase  
Damages: Japanese beetle defoliation: 19% incidence, 29% severity  
European fruit Lecanium scale: 62% incidence, 10% severity  
European elm flea weevil defoliation: 0% incidence, 0% severity  
Tetraneura sp. Finger gall aphid: 51% incidence, 14% severity  
Fungal leaf spot: negligible  
Comments: crown upright and open, Color: 2.5
‘Morton Plainsman’ Vanguard™ (U. pumila X U. japonica)

Date: 7/2014
Survival: 100%
Diameter at 1.4m (cm): 17.8
Height (m): na
Crown shape: Vase

Damages: Japanese beetle defoliation: 42% incidence, 46% severity
   European fruit Lecanium scale: 17% incidence, 4% severity
   European elm flea weevil defoliation: 0% incidence, 0% severity
   Tetraneura sp. Finger gall aphid: 0% incidence, 0% severity
   Fungal leaf spot: negligible

Comments: crown spreading or open, Color: 2.7

‘Morton Glossy’ Triumph™ (U. pumila X U. japonica X U. wilsoniana)

Date: 7/2014
Survival: 100%
Diameter at 1.4m (cm): 18.0
Height (m): na
Crown shape: Vase

Damages: Japanese beetle defoliation: 25% incidence, 30% severity
   European fruit Lecanium scale: 38% incidence, 7% severity
   European elm flea weevil defoliation: 0% incidence, 0% severity
   Tetraneura sp. Finger gall aphid: 44% incidence, 7% severity
   Fungal leaf spot: negligible

Comments: crown open, Color: 2.9
‘Morton’ Accolade ® (*U. japonica* X *U. wilsoniana*)

Date: 7/2014
Survival: 100%
Diameter at 1.4m (cm): 15.0
Height (m): na
Crown shape: Vase (Oval)
Damages: Japanese beetle defoliation: 35% incidence, 40% severity
   European fruit Lecanium scale: 5% incidence, 4% severity
   European elm flea weevil defoliation: 0% incidence, 0% severity
   Tetraneura sp. Finger gall aphid: 12% incidence, 4% severity
   Fungal leaf spot: negligible
Comments: upright with small leaves, Color: 2.8

‘Morton Red Tip’ Danada Charm ™ (*U. japonica* X *U. wilsoniana*)

Date: 7/2014
Survival: 60%
Diameter at 1.4m (cm): 14.7
Height (m): na
Crown shape: Vase
Damages: Japanese beetle defoliation: 23% incidence, 30% severity
   European fruit Lecanium scale: 33% incidence, 7% severity
   European elm flea weevil defoliation: 0% incidence, 0% severity
   Tetraneura sp. Finger gall aphid: 2% incidence, 2% severity
   Fungal leaf spot: negligible
Comments: upright or open crown, Color: 2.5
‘Prospector’ (U. wilsoniana)

Date: 7/2014
Survival: 100%
Diameter at 1.4m (cm): 19.3
Height (m): na
Crown shape: Vase
Damages: Japanese beetle defoliation: 17% incidence, 27% severity
   European fruit Lecanium scale: 70% incidence, 22% severity
   European elm flea weevil defoliation: 0% incidence, 0% severity
   Tetraneura sp. Finger gall aphid: 32% incidence, 2% severity
Fungal leaf spot: negligible
Comments: crown spreading, Color: 3.0, big leaves

‘Emerald Sunshine’ (U. propinqua)

Date: 7/2014
Survival: 100%
Diameter at 1.4m (cm): 9.9
Height (m): na
Crown shape: Vase (Oval)
Damages: Japanese beetle defoliation: 10% incidence, 21% severity
   European fruit Lecanium scale: 41% incidence, 7% severity
   European elm flea weevil defoliation: 0% incidence, 0% severity
   Tetraneura sp. Finger gall aphid: 0% incidence, 0% severity
Fungal leaf spot: negligible
Comments: crown upright and tight, Color: 2.5
‘Jefferson’ (U. americana)
These Jefferson reps were found to be the same cultivar as Princeton

This cultivar was not planted at this trial site

‘Princeton’ (U. americana)

Date: 7/2014
Survival: 80%
Diameter at 1.4m (cm): 15.2
Height (m): na
Crown shape: Vase
Damages: Japanese beetle defoliation: 22% incidence, 41% severity
European fruit Lecanium scale: 46% incidence, 15% severity
European elm flea weevil defoliation: 0% incidence, 0% severity
Tetraneura sp. Finger gall aphid: 0% incidence, 0% severity
Fungal leaf spot: negligible
Comments: crown tight, open, Color: 2.7
‘New Harmony’ (U. americana)

Date: 7/2014
Survival: 100%
Diameter at 1.4m (cm): 13.0
Height (m): na
Crown shape: Vase (Oval)
Damages: Japanese beetle defoliation: 9% incidence, 26% severity
European fruit Lecanium scale: 73% incidence, 22% severity
European elm flea weevil defoliation: 0% incidence, 0% severity
Tetraneura sp. Finger gall aphid: 0% incidence, 0% severity
Fungal leaf spot: negligible
Comments: upright, tight, Color: 2.8

‘Kuhar II (U. americana)

Date: 7/2014
Survival: 100%
Diameter at 1.4m (cm): 13.7
Height (m): na
Crown shape: Vase (Oval)
Damages: Japanese beetle defoliation: 15% incidence, 31% severity
European fruit Lecanium scale: 83% incidence, 32% severity
European elm flea weevil defoliation: 0% incidence, 0% severity
Tetraneura sp. Finger gall aphid: 0% incidence, 0% severity
Fungal leaf spot: negligible
Comments: crown upright and tight, Color: 2.7
European Fruit Lecanium scale

Japanese Beetle damage

Tetraneura sp. Finger gall aphid (not the feeding damage)
Winter storm damage

Upper crown foliar feeding by Japanese beetle adults- ‘Triumph’
New Jersey National Elm Trial Site Two Years After Planting (2007)