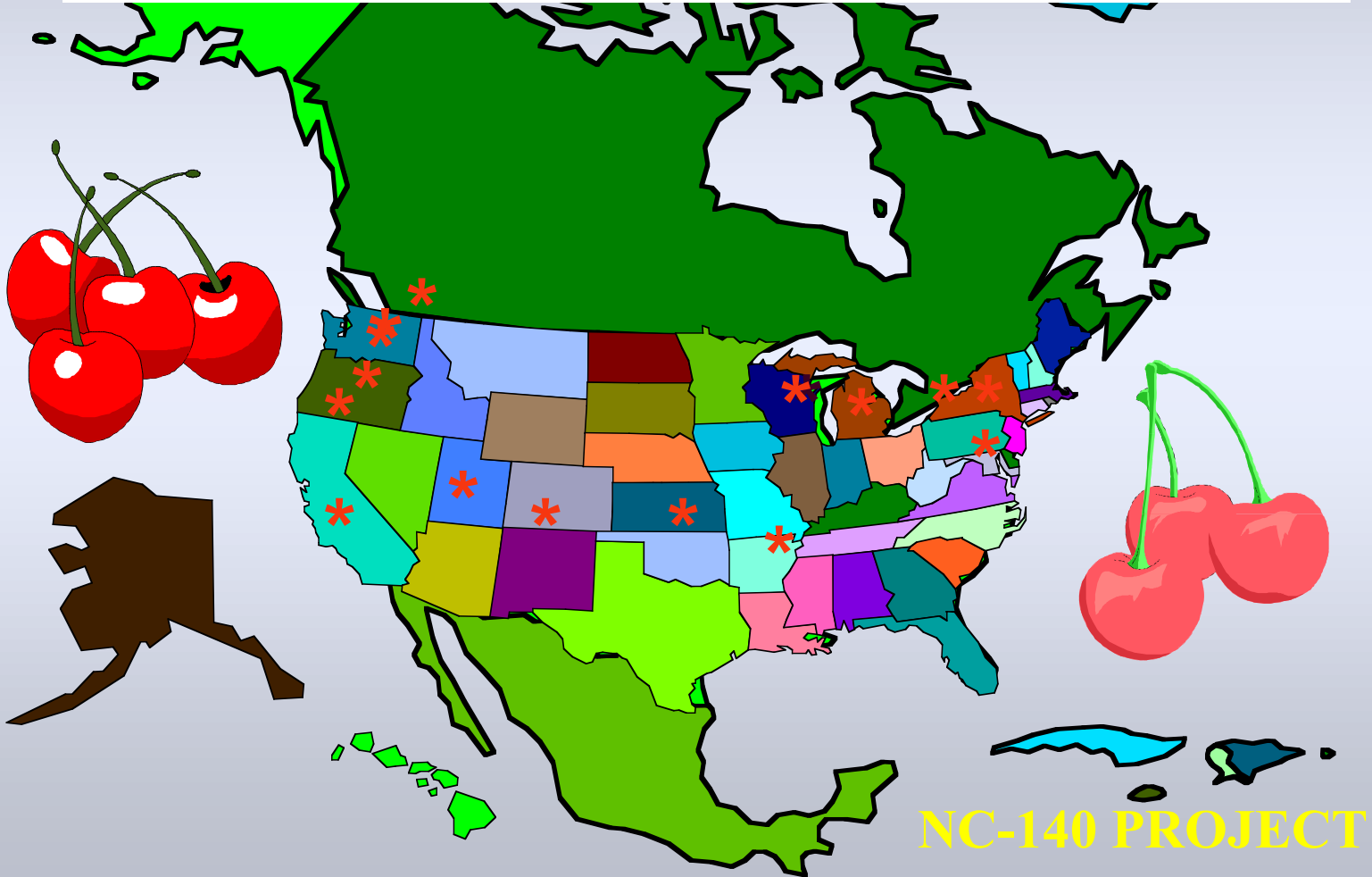



# **Preliminary Performance of Montmorency on Eleven Rootstocks in the 1998 NC-140 Tart Cherry Rootstock Trial**



**R. Perry, L. Anderson, R. Andersen, G.  
Greene, B. Lay, T. Roper, , F. Kappel, G.  
Lang and D. Stefanelli \***

# 1998 NC-140 CHERRY ROOTSTOCK TRIAL SITES



<b><u>Cooperators</u></b>	<b><u>State/Prov</u></b>	<b><u>Site Loc.</u></b>	
<b>R. Perry</b>	<b>MI</b>	<b>Traverse City</b>	
<b>R. Andersen</b>	<b>NY</b>	<b>Geneva</b>	
<b>B. Lay</b>	<b>ONT</b>	<b>Vineland</b>	
<b>G. Greene</b>	<b>PA</b>	<b>Biglerville</b>	
<b>T. Roper</b>	<b>WI</b>	<b>Sturgeon Bay</b>	
<b>L. Anderson</b>	<b>UT</b>	<b>Farmington</b>	
<b><u>Trial Committee Chairpersons</u></b>			
<b>F. Kappel</b>	<b>Ag Canada, BC</b>		
<b>G. Lang</b>	<b>MSU, East Lansing, MI</b>		
<b>* D. Stefanelli, Univ. Bologna, IT, Data Analysis</b>			

## **Abstract**



**An NC-140 tart cherry rootstock trial was established at 6 sites (Michigan, Wisconsin, Pennsylvania, Utah, New York and Ontario, Canada) in 1998. This preliminary report summarizes the performance of Montmorency on only 11 rootstocks tested uniformly among all 6 sites. Except where noted, each site established the trees in a randomized complete block design with 8 replications of single plant plots per treatment. This is an early report demonstrating rootstock influence on tree survival and vigor after 3 years and blossom density and cropping in the first year.**

## **Abstract (cont.)**



**Cropping of Montmorency averaged below 0.5 kg per tree for all sites and treatments in 2000 (no yield reported by Utah). Ontario reported significantly higher yield than all other states with two rootstock treatments approaching 2.0 kg per tree. Highest yields were on Gisela series 195/20, 6, and 7 and lowest on W.10, Mahaleb seedling and W.158. The most vigorous trees after 3 years are in Michigan and Utah and least vigorous in Ontario. Differences among all treatments are relatively small with trees on Mahaleb largest and Edabriz smallest.**

## **Abstract (cont.)**



**More blossoms (expressed as a ratio of numbers of blossom clusters per trunk cross sectional area) were recorded in spring 2000 at PA than 4 other sites (data for NY not presented). Montmorency appears most precocious among the 5 sites (none recorded for Wisconsin) on Gisela series 195/20, 6, 5 and 7. Three trees succumbed in 2000 at Michigan on W.53. Preliminary diagnosis suggests tree collapse due to Prune Dwarf or Prunus Necrotic Ringspot virus infection.**

## Procedure



**An NC-140 tart cherry rootstock trial was established at 6 sites (Michigan, Pennsylvania, Wisconsin, Utah, New York and Ontario, Canada) in 1998. This preliminary report summarizes the performance of Montmorency on only 11 rootstocks tested uniformly among all 6 sites. Some sites were established with an additional number of rootstock treatments beyond the 11 tested in all sites. Except where noted, each site established the trees in a randomized complete block design with 8 replications of single plant plots per treatment.**

## **Procedure (cont.)**



**Trees were planted at a spacing of 3 x 4.5 m or a density of 740 trees / ha (10 X 15 ft. or 290 trees / acre) and trained to a modified central leader training system. Trees were planted so that the initial union height with respect to soil was established at 7.5-10 cm. Tree vigor has been assessed annually by making trunk measurements and expressed as trunk cross sectional area . Precocity is expressed here as a ratio of numbers of blossom clusters to trunk cross sectional area in fall 2000. Significant yield was only recorded at 2 sites.**



## **Results and Discussion**



**The most vigorous trees after 3 years are in Michigan and Utah and least vigorous in Ontario. Differences among all treatments are relatively small with trees on Mahaleb largest and Edabriz smallest. Cropping of Montmorency averaged below 0.5 kg per tree for all sites and treatments in 2000 (no yield reported by Utah). Ontario reported significantly higher yield than all other states with two rootstock treatments approaching 2.0 kg per tree. Highest yields were on W. 53, Gi. 6, and Gi. 7 and lowest on W.10, Mahaleb seedling and W.158 (Table 1).**

## **Results (cont.)**



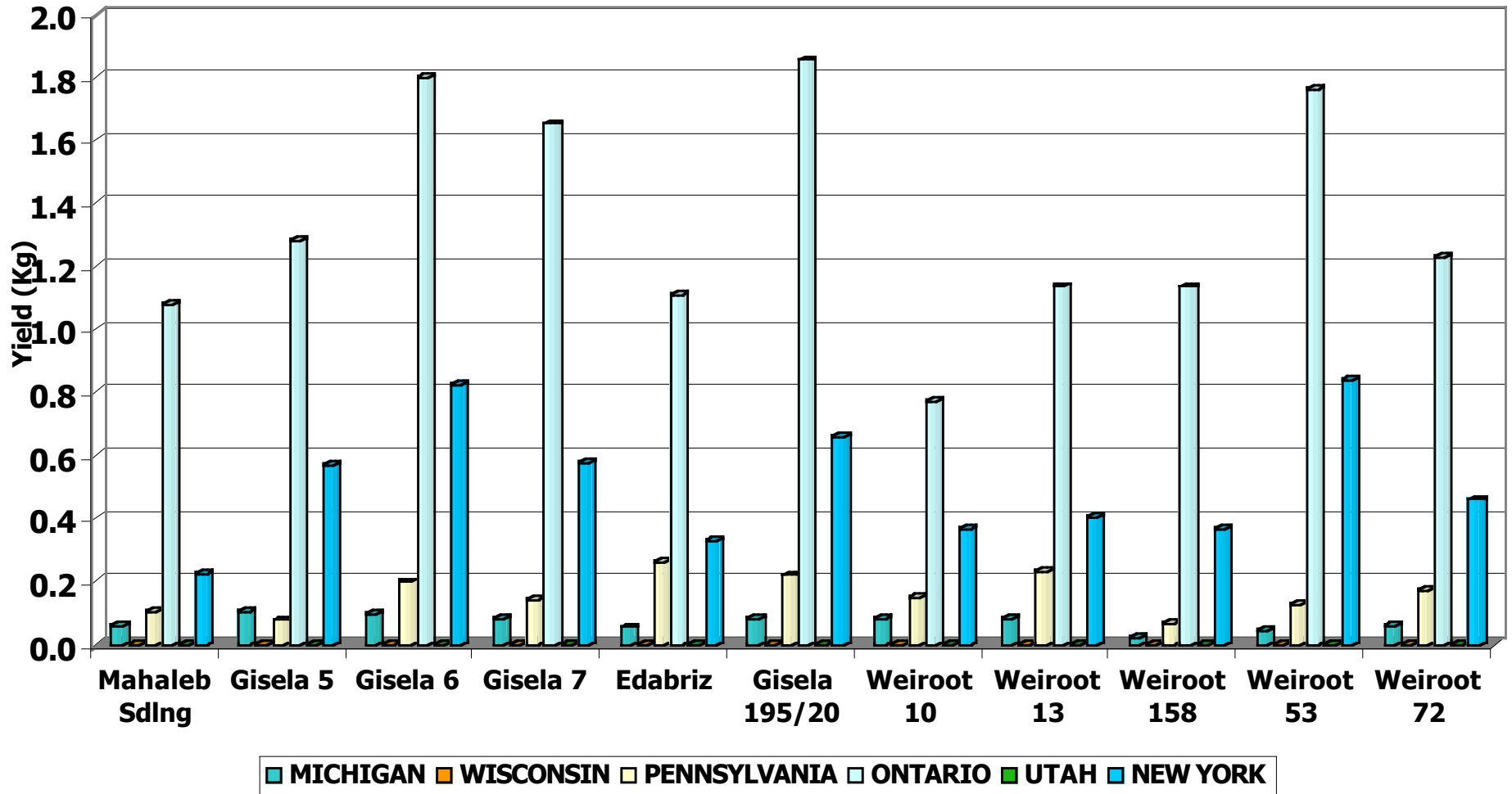
**More blossoms (expressed as a ratio of numbers of blossom clusters per trunk cross sectional area) were recorded in spring 2000 at PA than 4 other sites (data for NY not presented). Montmorency appears most precocious among the 5 sites (none recorded for Wisconsin) on Gisela series 195/20, 6, 5 and 7. Three trees succumbed in 2000 at Michigan on W.53. Preliminary diagnosis suggests tree collapse due to Prune Dwarf or Prunus Necrotic Ringspot virus infection.**



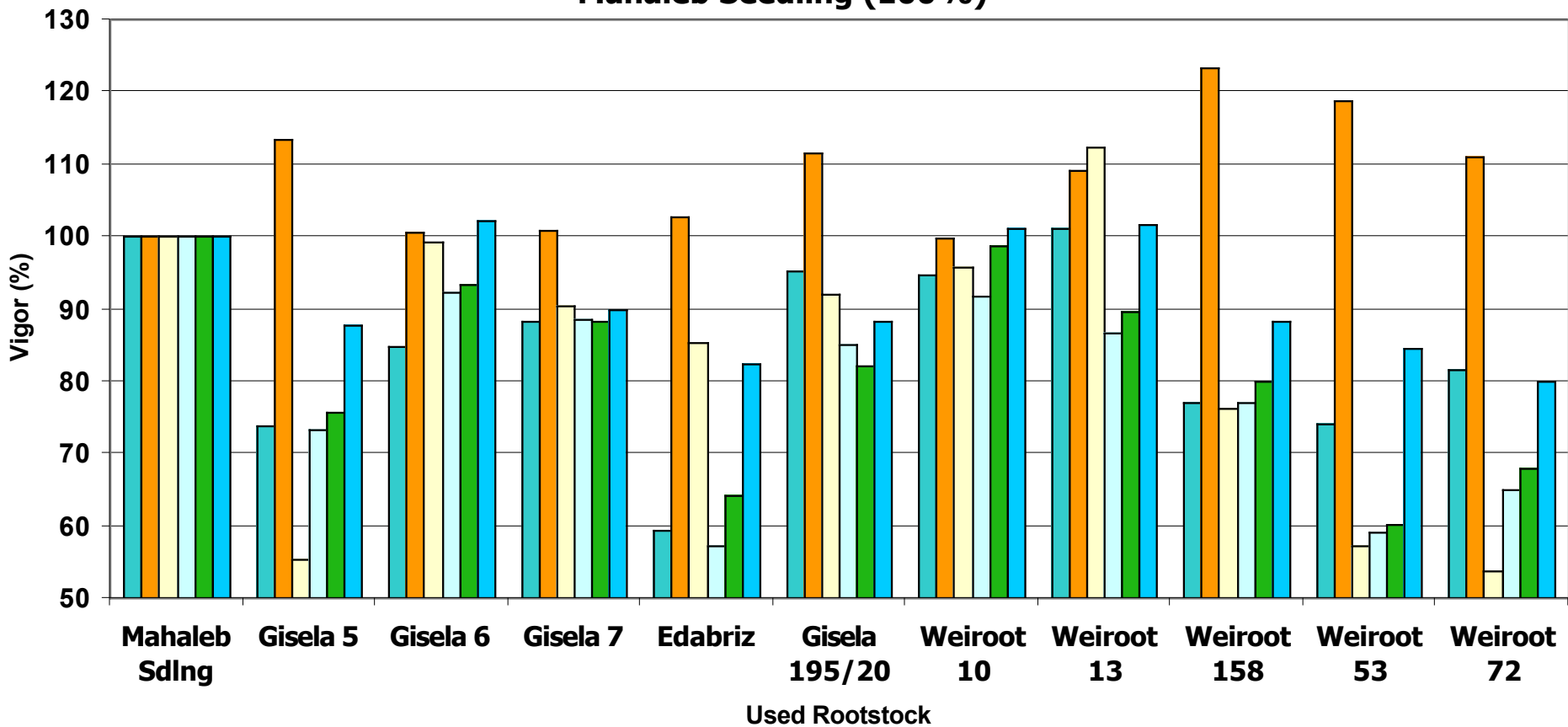
**Table 1. Cropping in 2000 in 6 sites in NC-140 (kg/tree).**

<b>Yield 2000 (Kg)</b>														
	<b>ROOTSTOCK</b>													
	<b>Mah</b>	<b>Gi. 5</b>	<b>Gi.6</b>	<b>Gi.7</b>	<b>Eda.</b>	<b>Gi.195/20</b>	<b>W.10</b>	<b>W.13</b>	<b>W.158</b>	<b>W.53</b>	<b>W.72</b>	<b>Avg.</b>	<b>LSD</b>	<b>C.V.</b>
<b>MI</b>	<b>0.06</b>	<b>0.11</b>	<b>0.10</b>	<b>0.08</b>	<b>0.06</b>	<b>0.08</b>	<b>0.08</b>	<b>0.08</b>	<b>0.02</b>	<b>0.05</b>	<b>0.06</b>	<b>0.07</b>	<b>1.17</b>	<b>589.55</b>
<b>WI</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>.</b>
<b>PA</b>	<b>0.10</b>	<b>0.08</b>	<b>0.20</b>	<b>0.15</b>	<b>0.26</b>	<b>0.22</b>	<b>0.15</b>	<b>0.24</b>	<b>0.07</b>	<b>0.13</b>	<b>0.18</b>	<b>0.16</b>	<b>0.11</b>	<b>63.09</b>
<b>ON</b>	<b>1.09</b>	<b>1.29</b>	<b>1.80</b>	<b>1.66</b>	<b>1.12</b>	<b>1.86</b>	<b>0.77</b>	<b>1.14</b>	<b>1.14</b>	<b>1.77</b>	<b>1.24</b>	<b>1.35</b>	<b>1.13</b>	<b>77.89</b>
<b>UT</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>.</b>
<b>NY</b>	<b>0.23</b>	<b>0.57</b>	<b>0.83</b>	<b>0.58</b>	<b>0.33</b>	<b>0.66</b>	<b>0.37</b>	<b>0.41</b>	<b>0.37</b>	<b>0.84</b>	<b>0.46</b>	<b>0.52</b>	<b>0.33</b>	<b>63.38</b>
<b>Avg.</b>	<b>0.26</b>	<b>0.35</b>	<b>0.51</b>	<b>0.45</b>	<b>0.31</b>	<b>0.48</b>	<b>0.24</b>	<b>0.32</b>	<b>0.28</b>	<b>0.52</b>	<b>0.33</b>	<b>0.37</b>		

### Tart Cherry RootStock Trial - Yield 2000



## NC140 tart Cherry Rootstock Trial - Rootstock vigor compared with Mahaleb Seedling (100%)



■ MICHIGAN  
 ■ WISCONSIN  
 ■ PENNSYLVANIA  
 ■ ONTARIO  
 ■ UTAH  
 ■ NEW YORK

## **Summary of Results**



- 1. Ontario reported higher yield than all states/ prov. with two rootstocks approaching 2.0 kg per tree.**
- 2. Highest yields were on Gisela series 195/20, 6, and 7.**
- 3. Three trees succumbed in 2000 at Michigan on W.53 – suspect PRSV or PD.**