2007
WESTERN REGIONAL CHIPPING
POTATO VARIETY TRIAL REPORT

State Experiment Stations and
USDA-ARS

California
Colorado
Idaho

Oregon
Texas
TABLE
1 Locations, Cooperators, and Cultural Information
2 Clone, Seed Source, Stand, Tuber and Vine Characteristics, Stems/plant
3 Total Yield (CWT/A) - Yield of U.S. No. 1's (CWT/A & %)
4 Yield of U.S. No. 1's Over 10/12 oz. - Yield of Tubers Under 4 oz. (CWT/A & %)
5 Specific Gravity
6 Average Tuber Size, and Tuber Shape
7 External Defects - Growth Cracks, Second Growth, Shatter Bruise, and Scab
8 Internal Defects - Hollow Heart/Brown Center, Internal Brown Spot, Vascular Discoloration, and Blackspot Bruise.
9 Chip Color and Percent Sugar Ends
10 Disease Evaluations, Metribuzin Reaction - Aberdeen, Hermiston, Corvallis, and Prosser
11 Solids, Dextrose, Sucrose, Protein, Vitamin C, and Glycoalkaloids - Aberdeen
12 Merit Scores
13 Summary of Entries' Performances
14 Three Year Summary of Advanced Entries' Performances
15 Extra Clonal Information
   Comments and Extra Information

Compiled by Peggy Bain

Revision - 3/7/2008
### TABLE 1: 2007 Western Regional Chipping Potato Variety Trial - LOCATIONS, COOPERATORS, AND CULTURAL INFORMATION

<table>
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<tr>
<th>Locations</th>
<th>Cooperators</th>
<th>Trial</th>
<th>Irrigation</th>
<th>Fertilizer N-P-K-S(lb/A)</th>
<th>Planting Date</th>
<th>Vine Kill Date</th>
<th>Harvest Date</th>
<th>Days to Vine Kill</th>
<th>Days to Harvest</th>
<th>Herbicides</th>
<th>Insecticides</th>
<th>Fungicides</th>
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<td>238N</td>
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<td>10-Sep</td>
<td>1-Oct</td>
<td>118</td>
<td>139</td>
<td>Sencor Matrix</td>
<td>Bravo</td>
<td>Dithane, Quadris</td>
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<td>D. Holm, F. Goktepe</td>
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<td>31-Aug</td>
<td>25-Sep</td>
<td>113</td>
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<td>Dual Magnum</td>
<td>Leverage 2.7 Actara</td>
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<td>1-May</td>
<td>4-Sep</td>
<td>24-Sep</td>
<td>126</td>
<td>146</td>
<td>Sencor DF, Eptam</td>
<td>Admire Pro</td>
<td>Quadris Opti, Dithane F-45</td>
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<td>Admire, Asana Monitor Onager Mocap EC Monitor Onager Comite</td>
<td>Vapam, Ridomil Gold, Bravo, Dithane, Quadris, Omega</td>
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- Days to Vine Kill: 118, 139
- Days to Harvest: 111, 126
- Herbicides: Sencor, Bravo, Dithane, Quadris
- Insecticides: Matrix, Admire, Asana Monitor Onager, Mocap EC Monitor Onager Comite
- Fungicides: Dithane, Quadris, Curzate, Vapam, Ridomil Gold, Bravo, Dithane, Quadris, Omega
TABLE 2: 2007 Western Regional Chipping Potato Variety Trial - CLONE, PARENTS, ENTERED BY, SEED SOURCE, STAND, TUBER AND VINE CHARACTERISTICS, AND STEMS PER PLANT

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<th>Seed Source</th>
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<th>Tuber Size</th>
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**Location Means**

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**LSD (.05)**

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Location Means: 1.100 1.095 1.089 1.082 1.078 1.068 1.086

LSD (.05): 0.006
### TABLE 6: 2007 Western Regional Chipping Potato Variety Trial - AVERAGE TUBER SIZE, AND TUBER SHAPE

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LSD (.05) 1.7 0.5
TABLE 7: 2007 Western Regional Chipping Potato Variety Trial - EXTERNAL DEFECTS - GROWTH CRACKS, SECOND GROWTH, SHATTER BRUISE, SCAB - MEANS OF LOCATIONS

<table>
<thead>
<tr>
<th>No. Clone</th>
<th>Growth Cracks 1</th>
<th>Second Growth 1</th>
<th>Shatter Bruise 1</th>
<th>Scab 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CO</td>
<td>ID</td>
<td>CV</td>
<td>HRL</td>
</tr>
<tr>
<td>1 ATLANTIC</td>
<td>4.0</td>
<td>4.8</td>
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</tr>
<tr>
<td>2 CHIPETA</td>
<td>4.0</td>
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<td>5.0</td>
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</tr>
<tr>
<td>3 IVORY CRISP</td>
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<td>4.0</td>
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<tr>
<td>4 AC97097-14W</td>
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<tr>
<td>5 CO96141-4W</td>
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<td>6 CO97043-14W</td>
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<tr>
<td>7 CO97065-7W</td>
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**MEANS**

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<th>Growth Cracks 1</th>
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<th>Shatter Bruise 1</th>
<th>Scab 1</th>
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1. Score 1-5, with 1=severe, 5=none.
2. Aberdeen shatter scores obtained from bruise evaluation conducted using a shatter chamber [1-5(none)].
3. Hermiston, Powdery Scab
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<thead>
<tr>
<th>No.</th>
<th>Clone</th>
<th>CO</th>
<th>ID</th>
<th>CV</th>
<th>HRL</th>
<th>TX</th>
<th>Percent Hollow Heart plus Brown Center</th>
<th>Means %</th>
<th>ID</th>
<th>CV</th>
<th>HRL</th>
<th>TX</th>
<th>Percent Internal Brown Spot</th>
<th>Means %</th>
<th>ID</th>
<th>CV</th>
<th>HRL</th>
<th>TX</th>
<th>Percent Net Necrosis</th>
<th>Means %</th>
<th>Blackspot Bruise</th>
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<td>NS</td>
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</tbody>
</table>

1 Score 1-5, with 1=severe, 5=none.
2 Aberdeen blackspot scores from an abrasive peel test [1-5(None)].
### TABLE 9: 2007 Western Regional Chipping Potato Variety Trial - CHIP COLOR

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<thead>
<tr>
<th>Clone</th>
<th>CV Field</th>
<th>Chip 40 a</th>
<th>Recon b</th>
<th>Chip 50 c</th>
<th>Recon d</th>
<th>ID Chip 40 a</th>
<th>Recon b</th>
<th>Chip 50 c</th>
<th>Location Means</th>
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<td>2.1</td>
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<td>1.6</td>
<td>1.6</td>
<td>1.4</td>
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<tr>
<td>5 CO96141-4W</td>
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<td>2.9</td>
<td>1.7</td>
<td>1.7</td>
<td>1.5</td>
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<td>1.5</td>
<td>3.7</td>
<td>2.6</td>
<td>1.5</td>
<td>2.1</td>
</tr>
</tbody>
</table>

**Location Means**

|      | 1.2 | 4.2 | 3.4 | 1.9 | 2.1 | 3.4 | 2.1 | 1.6 | 1.8 |

---

1 Color using Snack Food Association Frycolor Standards (1-5(darkest)).

a Stored 6-8 weeks at 40°F.

b Stored 6-8 weeks at 40°F plus 3 weeks at 60°F.

c Stored 6-8 weeks at 50°F.

d Stored 6-8 weeks at 50°F plus 3 weeks at 60°F.

e Stored 8 weeks at 45°F
TABLE 10: 2007 Western Regional Chipping Potato Variety Trial - DISEASE EVALUATIONS, METRIBUZIN REACTION

<table>
<thead>
<tr>
<th>No. Clone</th>
<th>Vert. Wilt/ Early Dying</th>
<th>Late Blight</th>
<th>Early Blight</th>
<th>Common Scab AB</th>
<th>Root- knot %Serious Defect</th>
<th>Metr. Reaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Atlantic</td>
<td>6.8 -- 6.0 9 -- 12.1 -- -- 4.3 45 53.1 0.0 -- -- 0.9 S/MS</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Chipeta</td>
<td>3.3 3.5 4.5 8.3 1555 17.5 7.5 S 3.0 20 57.2 1.6 60 100 2.4 R</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Ivory Crisp</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 AC97097-14W</td>
<td>6.0 5.8 6.3 9.0 1572 17.5 57.5 S 4.3 78 44.5 1.0 95 40 3.5 R</td>
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<td></td>
</tr>
<tr>
<td>5 CO96141-4W</td>
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<td></td>
</tr>
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<td>7.3 7.6 6.8 9.0 -- 27.5 42.5 S 3.7 53 44.6 0.0 100 95 0.4 R</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 CO97065-7W</td>
<td>8.0 8.9 7.3 9.0 -- 25.0 0.0 S 4.7 75 37.1 2.1 80 90 1.5 R</td>
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</table>

**MEANS**

<table>
<thead>
<tr>
<th>Vert. Wilt/ Early Dying</th>
<th>Late Blight</th>
<th>Early Blight</th>
<th>Common Scab AB</th>
<th>Root- knot %Serious Defect</th>
<th>Metr. Reaction</th>
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</thead>
<tbody>
<tr>
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</table>

**LSD @ .05**

<table>
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<tr>
<th>Vert. Wilt/ Early Dying</th>
<th>Late Blight</th>
<th>Early Blight</th>
<th>Common Scab AB</th>
<th>Root- knot %Serious Defect</th>
<th>Metr. Reaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0 1.5 2.0 0.5 90 24.6</td>
<td>1.4 19</td>
<td>27.0 6.0</td>
<td>2.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

1 Evaluations by Whitworth, Hane, and Yilma; 0 to 9, Where 0 or 1=No symptoms to a trace; 2=1-5%; 3=5-10%; 4=10-20%; 5=25-40%; 6=40-60%; 7=60-70%; 8=75-90%; 9=90-100% dead or dying with typical disease symptoms.

2 Evaluations made at Corvallis, Oregon by Solomon Yilma; AUDPC=area under the disease progress curve. Higher number indicates more disease over time.

3 Evaluations made at Corvallis, Oregon by Solomon Yilma; % of tubers examined with any late blight symptoms.


5 Evaluations made at Aberdeen, Idaho by Jonathan Whitworth; Percent serious defect = number of tubers with a 3 rating (0-5 scale) or higher, divided by the total number of tubers examined.

6 Evaluations made at Hermiston, Oregon by Dan Hane; scale as indicated, highest number being most severe.

7 % Virus are from ELISA test of sprouts from tubers grown under high virus pressure.

8 Metribuzin Reaction measured at Aberdeen, ID: VR=very resistant, R=Resistant, MR=Moderately resistant, MS=moderately susceptible, S=susceptible.
TABLE 11: 2007 Western Regional Chipping Potato Variety Trial - SOLIDS, DEXTROSE, SUCROSE, PROTEIN, VITAMIN C, AND GLYCOALKALOIDS - ABERDEEN

<table>
<thead>
<tr>
<th>Clone</th>
<th>Solids Oven Dry (%)</th>
<th>Sugars</th>
<th>Dextrose (%FWB)</th>
<th>Sucrose (%FWB)</th>
<th>Protein (%DWB)</th>
<th>Vitamin C (mg/100g FWB)</th>
<th>Glycoalkaloids (mg/100gFWB)</th>
</tr>
</thead>
<tbody>
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<td>1 ATLANTIC</td>
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Means: 22.4 0.02 0.12 6.2 22.9 5.5

FWB = fresh weight basis  DWB = dry weight basis
Glycoalkaloids: The 2007 Lenape check from Aberdeen was 43.7 mg/100g
<table>
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<th>Clone</th>
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<th>Fresh Merit Means</th>
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<td>Tuber Size (oz)</td>
<td>Specific Gravity</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>ATLANTIC</td>
<td>CK</td>
<td>507</td>
<td>med-low</td>
<td>392</td>
<td>78 med-high</td>
<td>7.1</td>
<td>med-large</td>
<td>89 high</td>
<td>1.4 good</td>
<td>2.6 medium</td>
</tr>
<tr>
<td>2</td>
<td>CHIPETA</td>
<td>CK</td>
<td>749</td>
<td>v. high</td>
<td>609</td>
<td>76 high</td>
<td>8.2</td>
<td>large</td>
<td>79 medium</td>
<td>2.3 fair</td>
<td>3.2 good</td>
</tr>
<tr>
<td>3</td>
<td>IVORY CRISP</td>
<td>CK</td>
<td>552</td>
<td>medium</td>
<td>421</td>
<td>76 medium</td>
<td>5.9</td>
<td>medium</td>
<td>85 med-high</td>
<td>1.3 excell.</td>
<td>3.9 v good</td>
</tr>
<tr>
<td>4</td>
<td>AC97097-14W</td>
<td>2</td>
<td>523</td>
<td>medium</td>
<td>392</td>
<td>75 medium</td>
<td>6.2</td>
<td>medium</td>
<td>87 high</td>
<td>1.4 good</td>
<td>2.4 med-poor</td>
</tr>
<tr>
<td>5</td>
<td>CO96141-4W</td>
<td>3</td>
<td>502</td>
<td>med-low</td>
<td>401</td>
<td>77 medium</td>
<td>5.9</td>
<td>medium</td>
<td>78 med-low</td>
<td>2.1 fair</td>
<td>3.4 good</td>
</tr>
<tr>
<td>6</td>
<td>CO97043-14W</td>
<td>2</td>
<td>556</td>
<td>medium</td>
<td>424</td>
<td>75 medium</td>
<td>6.1</td>
<td>medium</td>
<td>79 med-low</td>
<td>1.9 fair</td>
<td>3.8 v good</td>
</tr>
<tr>
<td>7</td>
<td>CO97065-7W</td>
<td>2</td>
<td>480</td>
<td>low</td>
<td>367</td>
<td>75 med-low</td>
<td>5.3</td>
<td>small</td>
<td>83 med-high</td>
<td>1.5 good</td>
<td>3.2 good</td>
</tr>
</tbody>
</table>
TABLE 14: 2007 Western Regional Chipping Potato Variety Trial - 3 YEAR SUMMARY ADVANCED CLONES

<table>
<thead>
<tr>
<th>Clone</th>
<th>Year in Trial</th>
<th>Yield Late</th>
<th>% US#1's</th>
<th>Tuber Size (oz)</th>
<th>Specific Gravity</th>
<th>Chip Color</th>
<th>Merit Score</th>
<th>Commets</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATLANTIC</td>
<td>2007</td>
<td>high</td>
<td>392</td>
<td>med-high</td>
<td>7.1</td>
<td>high</td>
<td>1.4</td>
<td>good</td>
</tr>
<tr>
<td></td>
<td>2006</td>
<td>high</td>
<td>436</td>
<td>med-high</td>
<td>6.4</td>
<td>medium</td>
<td>2.5</td>
<td>fair</td>
</tr>
<tr>
<td></td>
<td>2005</td>
<td>high</td>
<td>444</td>
<td>med-high</td>
<td>6.7</td>
<td>medium</td>
<td>2.3</td>
<td>fair</td>
</tr>
<tr>
<td>CO96141-4W</td>
<td>2007</td>
<td>med-low</td>
<td>401</td>
<td>medium</td>
<td>5.9</td>
<td>medium</td>
<td>2.1</td>
<td>fair</td>
</tr>
<tr>
<td></td>
<td>2006</td>
<td>medium</td>
<td>375</td>
<td>high</td>
<td>5.8</td>
<td>medium</td>
<td>1.5</td>
<td>good</td>
</tr>
<tr>
<td></td>
<td>2005</td>
<td>med-low</td>
<td>423</td>
<td>high</td>
<td>6.6</td>
<td>medium</td>
<td>1.8</td>
<td>good</td>
</tr>
</tbody>
</table>

Notes: "Hollow Heart" indicates specific comments related to each variety.
### Comments and Information from States

<table>
<thead>
<tr>
<th>Entry</th>
<th>Clone</th>
<th>Hermiston Late Trial</th>
<th>tubers/length/width</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Atlantic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Chipeta</td>
<td>few knobs, attached stems, some soft rot</td>
<td>11.4</td>
</tr>
<tr>
<td>3</td>
<td>Ivory Crisp</td>
<td>FBE</td>
<td>9.4</td>
</tr>
<tr>
<td>4</td>
<td>AC97097-14W</td>
<td>soft rot, oblong</td>
<td>10.4</td>
</tr>
<tr>
<td>5</td>
<td>CO96141-4W</td>
<td>flat</td>
<td>9.8</td>
</tr>
<tr>
<td>6</td>
<td>CO97043-14W</td>
<td>smooth, attached stems</td>
<td>10.2</td>
</tr>
<tr>
<td>7</td>
<td>CO97065-7W</td>
<td>little FBE</td>
<td>11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Idaho Comments</th>
<th>tubers/length/width</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Atlantic</td>
<td>typical, scaley,</td>
</tr>
<tr>
<td>2 Chipeta</td>
<td>large tubers</td>
</tr>
<tr>
<td>3 Ivory Crisp</td>
<td>flat, stolons, scab, shattered</td>
</tr>
<tr>
<td>4 AC97097-14W</td>
<td>smooth, scab</td>
</tr>
<tr>
<td>5 CO96141-4W</td>
<td>nice, smooth, bud ends</td>
</tr>
<tr>
<td>6 CO97043-14W</td>
<td>flat, deep ends, stolons</td>
</tr>
<tr>
<td>7 CO97065-7W</td>
<td>very small</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Texas Comments</th>
<th>Type</th>
<th>Vigor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Atlantic</td>
<td>nice, early, buff, nice shape and skin, yield+, large tubers, poor internals, best of trial, rough</td>
<td>1.65</td>
</tr>
<tr>
<td>2 Chipeta</td>
<td>late, very small</td>
<td>1.75</td>
</tr>
<tr>
<td>3 Ivory Crisp</td>
<td>nice, early, best of trial++, nice yield, very nice, yield+, nice tubers</td>
<td>2.125</td>
</tr>
<tr>
<td>4 AC97097-14W</td>
<td>some rot, small, late, very large tubers, oblong, lenticels, poor skin, raised lenticels</td>
<td>1.625</td>
</tr>
<tr>
<td>5 CO96141-4W</td>
<td>nice, early, very nice, best of trial, raised lenticels</td>
<td>1.975</td>
</tr>
<tr>
<td>6 CO97043-14W</td>
<td>nice, early, small, small</td>
<td>2.125</td>
</tr>
<tr>
<td>7 CO97065-7W</td>
<td>low yield, many small tubers, nice, nice shape, best of trial</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Precipitation was lower than normal during the last week of April, the first three weeks of May, the first, third, and fourth weeks of June, and the second week of August. Precipitation was higher than normal during the second week of April, the second week of May, the second and forth weeks of June, and the first week of August.