

REPORT of RESULTS
from the
2002 OHIO
POTATO GERMPLASM EVALUATIONS

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the
NORTH-CENTRAL (NCR-84)
and
NORTHEAST (NE-184)
REGIONAL PROJECTS
COOPERATING



OARDC

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## OHIO POTATO GERMPLASM EVALUATIONS - 2002

### Summary

Ohio cooperates with private and public breeders in the U.S. and elsewhere in evaluating varieties and experimental lines of fresh and processing potatoes. In 2002, we evaluated a total of distinct 167 varieties and experimental lines developed in nine breeding programs (Table 1). Entries were placed into one of four experiments (Table 2) completed at the Ohio Agricultural Research and Development Center (OARDC) in Wooster, OH; North-Central Regional Project 84 (NCR-84), Northeast Regional Project 184 (NE-184), Observation (OB), and Single Observation (SOB). Named varieties were included in at least one study, numbered entries in only one study. Entries were contributed by breeding programs in Alberta, Canada (CAA), Maine (ME), Michigan (MI), Minnesota (MN), New York (NY), North Dakota (ND), Oregon (OR), Wisconsin (WI), and the USDA-ARS (ARS) in Beltsville, MD. A total of 43 entries were contributed by ME, 8 by NY, 5 by WI, 4 by MN, 13 by CAA, 4 by MI, 4 by ND, 1 by OR, 63 by USDA-ARS/Beltsville and 22 various named or numbered varieties. Entries from ARS, CAA, ME, and NY represented the NE-184 Regional Project. Entries from MI, MN, ND, OR, and WI represented the NCR-84 Regional Project.

The studies were established to evaluate the growth and market traits of each entry when grown under non-irrigated conditions in Ohio. The fact that the trials at the OARDC are not irrigated tends to affect the performance of individual entries. In general, heat and drought stress decreased tuber yield and quality in 2002. Marketable yield of six varieties and seasonal rainfall for 1993-2002 at the OARDC are shown in Table 3.

Eighty-eight, fifty-seven, and twenty-two entries were rated as early-, mid-, and late-maturing respectively. Total and U.S. #1 yield averaged 106 and 74 cwt/A across all studies, respectively, with a range of 29-212 (total) and 12-154 (U.S. #1) cwt/A. Average total yield was 156 and 117 cwt/A in the NE-184 and NCR-84 studies, respectively. Twenty-eight entries were rated as producing tubers with good-excellent overall appearance. Based on positive yield and external tuber traits at harvest, tubers from seventy entries were forwarded for measures of specific gravity and chip quality. Twenty-five entries were rated as having acceptable chip quality. Ohio's potato crop are sold fresh market and to potato chip manufacturers. Therefore, as in past years, consumer-oriented aspects of cooking quality are also being assessed in a number of entries.

### Procedures

#### Planting

Seed potatoes were cut on May 14, 15, and 17 and then cured and stored under recommended temperature and humidity conditions at the OARDC until planting on May 23. Table 4 contains information on cultural, nutrient, and pest management practices. Table 6 contains pre-plant soil analysis results. Soil type was a well-drained Wooster silt loam. All entries in the NCR-84

and NE-184 experiments were replicated three times. Entries in the Observation studies were replicated once, twice, or three times depending on seed availability (Table 2).

### **Field Observations**

Plant stands were recorded five and seven weeks after planting. Whole plots were harvested on October 8-9. At harvest, observations were taken on external tuber characteristics. Observations included tuber shape, color, surface texture, eye depth, general appearance, and uniformity. These observations, along with yield data, determined which entries were included in chip and cooking quality evaluations and which may be evaluated in the 2003 season. In addition tubers were graded for size on October 23 and 29. At grading, 10 randomly selected tubers from each replicate in the NCR-84, NE-184, and Observations studies and 5 randomly selected tubers from the Single Observation study were examined for hollow heart and other internal defects. Scab and external defects were rated in a second random sample of 20 tubers. An 8 lb sample from each entry in the NCR-84 and NE-184 studies and from promising entries in the Observation plots were saved for specific gravity and chipping quality measurements on November 22.

### **Chipping and Cooking Quality Evaluations**

Samples were held in refrigerated storage (44-48° F) October 23 and 29-November 15 and then removed from storage and held under ambient conditions (approx. 70° F) until being processed on November 22.

For chipping quality evaluation, 4 randomly selected tubers were placed in an abrasive peeler and sliced to an approximate thickness of 0.063 inches (approximately 16 slices per inch). Raw slices were rinsed in cold water and then fried in a continuous fryer containing clear liquid shortening maintained at 190°C (372°F). After frying, a representative sample was taken for visual color evaluation by the standards contained in the manual published by the SFA by which chips light in color are scored “1” and very dark chips are scored “5”. Chip color was also measured with an Agtron Electronic Model M-350. Agtron readings and chip color are negatively related (high readings indicate lighter chip color). Samples were also evaluated for blistering. The percentage of chips with blister(s) greater than 1 cm (0.39 in.) was recorded.

Cooking quality of a number of entries from all experiments will be assessed using tubers held under refrigerated conditions for three months. These data will be summarized for a report planned in Spring 2003.

### **Results**

Yield, plant and tuber trait, and chipping quality data are present in Tables 7-13. Total and U.S. #1 yield averaged 106 and 74 cwt/A across all studies, respectively, with a range of 29-212 (total) and 12-154 (U.S.#1) cwt/A. Average total and U.S. #1 yield in the NCR84 study was 117 and 65 cwt/A, respectively. Average total and U.S. #1 yield in the NE184 study was 156 and 109

cwt/A, respectively. Eighty-eight entries were rated as early, fifty-seven as mid-season, and twenty-two as late. Of the 119 entries evaluated, overall tuber appearance was rated poor-fair, fair-good, and good-excellent in twenty-seven, sixty, and twenty-eight entries, respectively. Of the entries evaluated for chipping quality, specific gravity was = 1.080 in sixteen entries and chip quality (based on SFA color and percent blistering) was acceptable in twenty-five entries.

1. Entries having an external tuber rating of = 7 (good-excellent) at grading.
  - NCR-84: MN 18747 RUS, NorValley, MSF 313-3, MSE 018-1, ND 2470-27, ND 5822 C-7, B 0564-8
  - NE-184: AF 1470-6, Keuka Gold (NY01), AF 1938-3, Katahdin, Aquilon, Kennebec, Atlantic, AF 1455-20, NY 102, AF 1569-2, B 1240-1, NY 112
  - All entries listed in Tables 11 and 12 (Observations studies).
2. Entries having an external tuber rating of = 7 (good-excellent) at grading and marketable yield = the study average.
  - NCR-84: NorValley, MSF 313-3, ND 2470-27, ND 5822 C-7
  - NE-184: Keuka Gold (NY01), AF 1938-3, Katahdin, Aquilon, Kennebec, Atlantic, AF 1455-20, B 1240-1, NY 112
  - Single Observations: AF 2341-3
  - Observation: none
3. Entries having a specific gravity = the study average
  - NCR-84: Atlantic, Snowden, MN 18710 RUS, W 1386, W 1201, W 1431, MSF 313-3, MSE 018-1, A 9014-2, ND 2470-27, ND 5822 C-7, B 0766-3
  - NE-184: B 1425-9, AF 1938-3, Aquilon, Snowden, ARS W96 40022-5, ARS W96 4654-1, Atlantic, AF 1455-20, NY 102, NY 115, B 1240-1
  - Single Observations: AF 222-2, AF 2326-1, B 2135-163
  - Observation: B 0564-9, B 0564-8, B 1240-1, B 1870-17
4. Entries having a chip score of = 3.
  - NCR-84: NorValley, W 1201, W 1431, ND 2470-27, B 0564-8
  - NE-184: W 1242, ARS W96 4654-1, Atlantic, NY 102, AF 1569, NY 115, B 1223-4, NY 112
  - Single Observations: AF 2341-3, AF 222-2, AF 2360-2, V 15-27, B 1235-163
  - Observation: B 2001-197

#### **Experimental Selections to Watch in the Future**

- AF 1470-6, AF 1569-2, B 1240-1, B 1870-17, V 78-25

Table 1. List of programs participating in the 2002 Ohio Potato Germplasm Evaluations.

| Number       | Program                  | Genotypic Code(s) | ----- 2002 experiment -----         |        |             |                     | Total |
|--------------|--------------------------|-------------------|-------------------------------------|--------|-------------|---------------------|-------|
|              |                          |                   | NCR-84                              | NE-184 | Observation | Single <sup>1</sup> |       |
|              |                          |                   | ----- # entries in experiment ----- |        |             |                     |       |
| 1            | Oregon                   | A                 | 1                                   |        |             |                     | 1     |
| 2            | Univ. Maine              |                   |                                     |        |             |                     | 43    |
|              |                          | AF                |                                     | 7      |             | 33                  | 40    |
|              |                          | VW                |                                     |        |             | 3                   | 3     |
| 3            | USDA                     |                   |                                     |        |             |                     | 64    |
|              | ARS                      | ARS               |                                     | 2      |             |                     | 2     |
|              | Beltsville               | B                 | 2                                   | 3      | 37          | 20                  | 62    |
| 4            | Michigan State Univ.     |                   |                                     |        |             |                     | 4     |
|              |                          | MSE               | 1                                   |        |             |                     | 1     |
|              |                          | MSF               | 3                                   |        |             |                     | 3     |
| 5            | Univ. Minnesota          | MN                | 4                                   |        |             |                     | 4     |
| 6            | North Dakota State Univ. | ND                | 4                                   |        |             |                     | 4     |
| 7            | Cornell Univ.            |                   |                                     |        |             |                     | 8     |
|              |                          | NY                |                                     | 4      | 2           |                     | 6     |
|              |                          | U                 |                                     |        | 1           |                     | 1     |
|              |                          | T # only          |                                     |        | 1           |                     | 1     |
| 8            | Ag and Agri-Food Canada  | V                 | 3                                   |        |             | 10                  | 13    |
| 9            | Univ. Wisconsin          |                   |                                     |        |             |                     | 5     |
|              |                          | W                 | 4                                   |        |             |                     | 4     |
|              |                          | CV                | 1                                   |        |             |                     | 1     |
|              | various                  | named/# variety   | 7                                   | 9      | 10          |                     | 26    |
| <b>Total</b> |                          |                   | 30                                  | 25     | 51          | 66                  | 172*  |

<sup>1</sup> refer to number of single-row replicates. All other experiments contained three replicates.

\* number higher than reported due to varieties in two trials. Actual number is 167

Table 2. List of varieties and experimental lines planted in the potato germplasm evaluations at the Ohio Agricultural Research and Development Center (OARDC) in Wooster, OH in 2002.

| ----- Regional Project and Experiment ----- |                   |               |                  |                    |                        |                           |            |
|---------------------------------------------|-------------------|---------------|------------------|--------------------|------------------------|---------------------------|------------|
| <u>NE-184</u>                               |                   | <u>NCR-84</u> |                  | <u>Observation</u> |                        | <u>Single Observation</u> |            |
| 1                                           | AF 1470-6         | 1             | Atlantic         | 1                  | B 1871-1               | 1                         | VW 9309-9  |
| 2                                           | B 1425-9          | 2             | Snowden          | 2                  | B 1991-126             | 2                         | AF 2291-10 |
| 3                                           | Dark Red Norland  | 3             | MN 18710 RUS     | 3                  | B 0564-9               | 3                         | AF 2341-3  |
| 4                                           | W 1242            | 4             | MN 18747 RUS     | 4                  | B 1952-2               | 4                         | AF 2219-10 |
| 5                                           | Keuka Gold (NY01) | 5             | MN 19252 R       | 5                  | B 2021-3               | 5                         | AF 2222-2  |
| 6                                           | Superior          | 6             | NorValley        | 6                  | B 2017-2               | 6                         | AF 2351-7  |
| 7                                           | AF 1938-3         | 7             | Red Pontiac      | 7                  | B 1145-2               | 7                         | AF 2215-1  |
| 8                                           | Katahdin          | 8             | Russet Norkotah  | 8                  | B 1971-11              | 8                         | AF 2349-3  |
| 9                                           | Aquilon           | 9             | MN 15620LR       | 9                  | B 1529-1               | 9                         | AF 2351-3  |
| 10                                          | Chieftain         | 10            | W 1386           | 10                 | B 0984-1               | 10                        | AF 2261-1  |
| 11                                          | Snowden           | 11            | Dark Red Norland | 11                 | B 1491-5               | 11                        | AF 2267-8  |
| 12                                          | ARS W96 40022-5   | 12            | Russet Burbank   | 12                 | B 0564-8               | 12                        | AF 2353-1  |
| 13                                          | ARS W96 4654-1    | 13            | W 1836-3 Russet  | 13                 | NY 127                 | 13                        | AF 2322-4  |
| 14                                          | Kennebec          | 14            | W 1201           | 14                 | 19298 (Larson Farms)   | 14                        | AF 2363-11 |
| 15                                          | Atlantic          | 15            | W 1431           | 15                 | 96013-1 (Larson Farms) | 15                        | AF 2326-1  |
| 16                                          | AF 1455-20        | 16            | MSF 313-3        | 16                 | Satina                 | 16                        | AF 2207-4  |
| 17                                          | NY 102            | 17            | MSE 018-1        | 17                 | Katahdin               | 17                        | AF 2351-2  |
| 18                                          | Yukon Gold        | 18            | MSE 221-1        | 18                 | Langlade               | 18                        | AF 2259-7  |
| 19                                          | AF 1569-2         | 19            | MSE 202-3 Russet | 19                 | Reba                   | 19                        | AF 2351-6  |
| 20                                          | NY 115            | 20            | A 9014-2         | 20                 | Sandy                  | 20                        | AF 2351-4  |
| 21                                          | B 1223-4          | 21            | ND 2470-27       | 21                 | NY 129                 | 21                        | AF 1921-4  |
| 22                                          | B 1240-1          | 22            | V 0498-9         | 22                 | T 17-2                 | 22                        | AF 2363-9  |
| 23                                          | AF 1775-2         | 23            | ND 5084-3R       | 23                 | B 2001-197             | 23                        | AF 2276-8  |
| 24                                          | AF 1758-7         | 24            | ND 5822 C-7      | 24                 | B 1240-1               | 24                        | AF 2366-1  |
| 25                                          | AF 1763-2         | 25            | ND 3196-1R       | 25                 | B 1960-18              | 25                        | AF 2211-4  |
| 26                                          | NY 112            | 26            | V 0498-1         | 26                 | B 1870-17              | 26                        | AF 2215-5  |
|                                             |                   | 27            | CV 98023-2       | 27                 | B 1880-4               | 27                        | AF 2268-6  |
|                                             |                   | 28            | V 0497-1         | 28                 | B 1884-9               | 28                        | AF 2242-10 |
|                                             |                   | 29            | B 0564-8         | 29                 | B 1763-4               | 29                        | AF 2206-9  |
|                                             |                   | 30            | B 0766-3         | 30                 | B 2003-136             | 30                        | AF 2360-2  |
|                                             |                   |               |                  | 31                 | B 0811-4               | 31                        | AF 2293-2  |
|                                             |                   |               |                  | 32                 | B 2024-26              | 32                        | AF 2267-7  |
|                                             |                   |               |                  | 33                 | B 1958-53              | 33                        | VW 9501-5  |
|                                             |                   |               |                  | 34                 | B 2033-3               | 34                        | VW 9503-4  |
|                                             |                   |               |                  | 35                 | B 2001-186             | 35                        | AF 2269-1  |
|                                             |                   |               |                  | 36                 | B 1873-4               | 36                        | B 2066-3   |
|                                             |                   |               |                  | 37                 | B 1806-8               | 37                        | B 2100-2   |
|                                             |                   |               |                  | 38                 | B 1991-129             | 38                        | B 2125-156 |
|                                             |                   |               |                  | 39                 | B 1953-3               | 39                        | B 2133-123 |
|                                             |                   |               |                  | 40                 | B 1956-86              | 40                        | B 2078-5   |
|                                             |                   |               |                  | 41                 | B 1870-3               | 41                        | B 2098-11  |
|                                             |                   |               |                  | 42                 | B 1826-1               | 42                        | B 2095-1   |
|                                             |                   |               |                  | 43                 | B 1873-6               | 43                        | B 2133-127 |
|                                             |                   |               |                  | 44                 | B 1870-17              | 44                        | B 2078-13  |
|                                             |                   |               |                  | 45                 | B 1970-1               | 45                        | B 2098-1   |
|                                             |                   |               |                  | 46                 | B 1816-5               | 46                        | B 2100-13  |
|                                             |                   |               |                  | 47                 | B 1880-6               | 47                        | V 101-9    |
|                                             |                   |               |                  | 48                 | U 47-21                | 48                        | V 75-9     |
|                                             |                   |               |                  | 49                 | Ida Rose               | 49                        | V 100-1    |
|                                             |                   |               |                  | 50                 | All Blue               |                           |            |
|                                             |                   |               |                  | 51                 | True Blue              |                           |            |



Table 3. Marketable yield of standard varieties grown at the OARDC in Wooster, OH 1993-2002.

| -----Wooster - U.S. No. 1 (cwt/A)----- |      |      |      |      |      |      |      |      |      |      |
|----------------------------------------|------|------|------|------|------|------|------|------|------|------|
| Variety                                | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
| Atlantic                               | 213  | 268  | 214  | 288  | 216  | 196  | 152  | 175  | 213  | 125  |
| Katahdin                               | 138  | 312  | 207  | 339  | 178  | 205  | 238  | 204  | 61   | 103  |
| Kennebec                               | 179  | 223  | 180  | --   | 188  | 151  | 118  | 242  | 184  | 116  |
| Russet Burbank                         | --   | --   | --   | --   | --   | --   | --   | 150  | 41   | 19   |
| Superior                               | 170  | 267  | 184  | 241  | 245  | 167  | 165  | 174  | 66   | 100  |
| Yukon Gold                             | --   | 262  | 204  | --   | 170  | 248  | 174  | 224  | 165  | 103  |
| Rainfall (inches, July-Aug.)           | 2.81 | 7.08 | 6.85 | 5.51 | 4.64 | 6.31 | 5.67 | 5.22 | 6.20 | 2.83 |

Table 4. Cultural, nutrient, and pest management practices for the potato germplasm evaluations completed at the OARDC in Wooster, OH in 2002.

|                             |                                                       |                                                     |
|-----------------------------|-------------------------------------------------------|-----------------------------------------------------|
| Date Planted                | May 23, 2002                                          |                                                     |
| Date Harvested              | October 8-9, 2002                                     |                                                     |
| 2001 Main Crop              | Sudan grass                                           |                                                     |
| 2001 Cover Crop             | wheat                                                 |                                                     |
| Fertilizer                  | 10-20-20                                              | 600 lb/A preplant (disc-in)<br>600 lb/A at planting |
| Herbicide                   | May 27, 2002 Dual II (2 pt/A) + Sencor 75 DF (1 lb/A) |                                                     |
| Spacing Between Hill x Row  | 1' x 3'                                               |                                                     |
| Plot Size                   | 3' x 30'                                              |                                                     |
| Soil Conditions at Planting | moist                                                 |                                                     |
| Irrigation (inches)         | none                                                  |                                                     |
| Sprays Applied:             | May 23                                                | Admire (1 pt/A)                                     |
|                             | June 13                                               | Dithane (1 lb/A)                                    |
|                             | June 19                                               | Dithane (2 lb/A) and Kocide (1 lb/A)                |
|                             | June 28                                               | Dithane (2 lb/A) and Phaser 3EC (1 pt/A)            |
|                             | July 03                                               | Bravo 720 (1.5 pt/A)                                |
|                             | July 12                                               | Dithane (2 lb/A)                                    |
|                             | July 17                                               | Dithane (2 lb/A) and Phaser 3EC (1 qt/A)            |
|                             | August 01                                             | Bravo Ultrex (2 pt/A) and Asana (10 oz/A)           |
|                             | August 17                                             | Bravo (2 pt/A) and Asana (20 oz/A)                  |
|                             | August 26                                             | Dithane DF (2 lb/A)                                 |
|                             | September 04                                          | Dithane DF (2 lb/A)                                 |
|                             | September 13                                          | vine killer Rely (3 pt/A)                           |

Table 5. Seasonal and historical climatic data for the potato germplasm evaluations completed at the OARDC in Wooster, OH in 2002.

|                                    | <u>May (23-31)</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>October (1-8)</u> |
|------------------------------------|--------------------|-------------|-------------|---------------|------------------|----------------------|
| Avg. High Temp. (F)                | 78.5               | 83.4        | 87.9        | 86.0          | 81.4             | 73.8                 |
| Avg. Low Temp. (F)                 | 51.0               | 58.2        | 62.4        | 60.4          | 53.7             | 51.5                 |
| Avg. Temp. (F)                     | 64.2               | 70.5        | 75.3        | 72.9          | 67.1             | 62.3                 |
| Normal Avg. Temp. (F)              | 61.8               | 67.6        | 71.5        | 69.9          | 63.4             | 56.4                 |
| 2002 Total Precip. (in.)           | 0.98               | 3.25        | 0.86        | 1.97          | 3.56             | 0.25                 |
| 50-year Avg. Precip. (in.)         | 1.25               | 3.94        | 4.10        | 3.63          | 3.14             | 0.69                 |
| 2002 Precip. deficit/surplus (in.) |                    |             |             |               |                  |                      |
| period                             | -0.27              | -0.69       | -3.24       | -1.66         | 0.42             | -0.44                |
| cumulative                         | -0.27              | -0.96       | -4.20       | -5.86         | -5.44            | -5.88                |

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Table 6. Soil analyses for land used in the potato germplasm evaluations completed at the OARDC in Wooster, OH in 2002.

| <u>Factor</u>          | <u>Level</u> |
|------------------------|--------------|
| pH                     | 5.61         |
| P ( $\mu\text{g/g}$ )  | 57           |
| K ( $\mu\text{g/g}$ )  | 105          |
| Ca ( $\mu\text{g/g}$ ) | 810          |
| Mg ( $\mu\text{g/g}$ ) | 206          |

Soil analyses conducted at Service Testing and Analytical Research (STAR) Lab at the OARDC.

Table 7. Percent stand, maturity, yield and chip quality for entries grown in the Ohio NCR-84 Regional Project experiment in 2002.

| Entry #        | Entry Name       | Stand % | Plant Maturity <sup>1</sup> | Total cwt/A | US # 1 cwt/A | US #1 % | B Size % | Cull % | Specific Gravity <sup>2</sup> | Chip Color <sup>3</sup> | Blister <sup>4</sup> % | Agtron 350 |
|----------------|------------------|---------|-----------------------------|-------------|--------------|---------|----------|--------|-------------------------------|-------------------------|------------------------|------------|
| 1              | Atlantic         | 87      | 3                           | 139         | 120          | 86      | 6        | 7      | 1.080                         | 4                       | 0                      | 19         |
| 2              | Snowden          | 87      | 4                           | 186         | 154          | 83      | 9        | 8      | 1.077                         | 3-4                     | 0                      | 28         |
| 3              | MN 18710 RUS     | 73      | 6                           | 117         | 69           | 59      | 14       | 27     | 1.073                         | 4                       | 20                     | 27         |
| 4              | MN 18747 RUS     | 63      | 2                           | 76          | 29           | 39      | 11       | 51     | 1.063                         | 4                       | 10                     | 27         |
| 5              | MN 19252 R       | 77      | 5                           | 118         | 62           | 53      | 18       | 30     | -----                         | ----                    | ----                   | ----       |
| 6              | NorValley        | 71      | 5                           | 121         | 69           | 57      | 15       | 28     | 1.069                         | 3                       | 30                     | 40         |
| 7              | Red Pontiac      | 63      | 7                           | 107         | 56           | 52      | 12       | 36     | < 1.060                       | 5                       | 40                     | 17         |
| 8              | Russet Norkotah  | 76      | 1                           | 108         | 43           | 40      | 20       | 40     | 1.064                         | 5                       | 20                     | 16         |
| 9              | MN 15620LR       | 40      | 4                           | 54          | 17           | 32      | 20       | 48     | -----                         | ----                    | ----                   | ----       |
| 10             | W 1386           | 80      | 4                           | 154         | 83           | 54      | 10       | 36     | 1.078                         | 3-4                     | 10                     | 35         |
| 11             | Dark Red Norland | 87      | 2                           | 148         | 90           | 61      | 4        | 35     | 1.063                         | 5                       | 0                      | 17         |
| 12             | Russet Burbank   | 91      | 6                           | 103         | 19           | 18      | 36       | 46     | -----                         | ----                    | ----                   | ----       |
| 13             | W 1836-3 Russet  | 92      | 9                           | 120         | 44           | 37      | 22       | 41     | 1.070                         | 5                       | 0                      | 26         |
| 14             | W 1201           | 74      | 6                           | 114         | 52           | 45      | 8        | 46     | 1.083                         | 3                       | 0                      | 41         |
| 15             | W 1431           | 88      | 6                           | 148         | 67           | 45      | 7        | 48     | 1.077                         | 2-3                     | 0                      | 41         |
| 16             | MSF 313-3        | 69      | 6                           | 117         | 68           | 58      | 11       | 31     | 1.075                         | 3-4                     | 0                      | 36         |
| 17             | MSE 018-1        | 51      | 6                           | 108         | 62           | 58      | 7        | 35     | 1.083                         | 4                       | 0                      | 30         |
| 18             | MSE 221-1        | 84      | 5                           | 124         | 71           | 57      | 6        | 37     | 1.069                         | 4                       | 10                     | 21         |
| 19             | MSE 202-3 Russet | 71      | 3                           | 89          | 33           | 37      | 24       | 39     | -----                         | ----                    | ----                   | ----       |
| 20             | A 9014-2         | 65      | 5                           | 118         | 60           | 51      | 6        | 43     | 1.081                         | 4                       | 10                     | 25         |
| 21             | ND 2470-27       | 78      | 6                           | 178         | 118          | 66      | 8        | 26     | 1.073                         | 3                       | 0                      | 37         |
| 22             | V 0498-9         | 28      | 2                           | 60          | 36           | 60      | 1        | 39     | 1.063                         | 4-5                     | 10                     | 18         |
| 23             | ND 5084-3R       | 69      | 7                           | 157         | 111          | 71      | 7        | 23     | < 1.060                       | 5                       | 0                      | 11         |
| 24             | ND 5822 C-7      | 95      | 8                           | 173         | 108          | 62      | 4        | 33     | 1.083                         | 3-4                     | 10                     | 37         |
| 25             | ND 3196-1R       | 82      | 1                           | 93          | 50           | 54      | 10       | 36     | 1.063                         | 5                       | 10                     | 12         |
| 26             | V 0498-1         | 74      | 1                           | 82          | 39           | 48      | 16       | 36     | < 1.060                       | 5                       | 0                      | 18         |
| 27             | CV 98023-2       | 79      | 4                           | 146         | 71           | 48      | 19       | 32     | 1.066                         | 5                       | 0                      | 19         |
| 28             | V 0497-1         | 28      | 1                           | 48          | 30           | 62      | 15       | 23     | 1.067                         | 4                       | 20                     | 31         |
| 29             | B 0564-8         | 51      | 2                           | 75          | 38           | 51      | 8        | 41     | 1.067                         | 3                       | 10                     | 30         |
| 30             | B 0766-3         | 72      | 7                           | 116         | 80           | 68      | 4        | 28     | 1.076                         | 3-4                     | 0                      | 32         |
| <b>Average</b> |                  | 71      | 4                           | 117         | 65           | 54      | 12       | 34     | 1.072                         | 4                       | 8                      | 26         |

<sup>1</sup> See reference table for rating system on page 15.

<sup>2</sup> See reference table on page 16 for starch and dry matter conversions.

<sup>3</sup> SFA Standard (1 = light, 5 = dark).

<sup>4</sup> Percentage of chips that developed blisters greater than 20 mm in diameter during the frying process.

Table 8. Tuber characteristics for entries grown in the Ohio NCR-84 Regional Project experiment in 2002.

| Entry # | Entry Name       | ----- External <sup>1</sup> ----- |              |             |           |                    | ----- Internal <sup>2</sup> ----- |                        |                   |     | % Defected tubers |
|---------|------------------|-----------------------------------|--------------|-------------|-----------|--------------------|-----------------------------------|------------------------|-------------------|-----|-------------------|
|         |                  | Skin Color                        | Skin Texture | Tuber Shape | Eye Depth | Overall Appearance | Hollow Heart                      | Vascular Discoloration | Internal Necrosis |     |                   |
| 1       | Atlantic         | 6                                 | 5            | 1           | 1         | 3                  | 0                                 | 0                      | 5                 | 50  |                   |
| 2       | Snowden          | 6                                 | 5            | 1           | 1         | 3                  | 0                                 | 8                      | 0                 | 80  |                   |
| 3       | MN 18710 RUS     | 7                                 | 6            | 1           | 7         | 4                  | 0                                 | 0                      | 1                 | 10  |                   |
| 4       | MN 18747 RUS     | 7                                 | 6            | 3           | 1         | 7                  | 0                                 | 0                      | 0                 | 0   |                   |
| 5       | MN 19252 R       | 3                                 | 6            | 1           | 6         | 3                  | 0                                 | 0                      | 0                 | 0   |                   |
| 6       | NorValley        | 2                                 | 6            | 2           | 8         | 8                  | 0                                 | 0                      | 2                 | 20  |                   |
| 7       | Red Pontiac      | 3                                 | 8            | 2           | 5         | 5                  | 0                                 | 0                      | 1                 | 10  |                   |
| 8       | Russet Norkotah  | 5                                 | 4            | 5           | 9         | 5                  | 0                                 | 0                      | 0                 | 0   |                   |
| 9       | MN 15620LR       | 3                                 | 8            | 3           | 9         | 1                  | 0                                 | 0                      | 0                 | 0   |                   |
| 10      | W 1386           | 6                                 | 6            | 2           | 9         | 6                  | 0                                 | 0                      | 2                 | 20  |                   |
| 11      | Dark Red Norland | 3                                 | 6            | 2           | 5         | 3                  | 0                                 | 0                      | 2                 | 20  |                   |
| 12      | Russet Burbank   | 7                                 | 6            | 2           | 5         | 1                  | 0                                 | 0                      | 0                 | 0   |                   |
| 13      | W 1836-3 Russet  | 5                                 | 4            | 4           | 9         | 1                  | 0                                 | 0                      | 1                 | 10  |                   |
| 14      | W 1201           | 6                                 | 6            | 2           | 5         | 6                  | 0                                 | 0                      | 1                 | 10  |                   |
| 15      | W 1431           | 6                                 | 6            | 2           | 3         | 3                  | 0                                 | 0                      | 3                 | 30  |                   |
| 16      | MSF 313-3        | 6                                 | 5            | 2           | 7         | 7                  | 0                                 | 0                      | 2                 | 20  |                   |
| 17      | MSE 018-1        | 6                                 | 5            | 3           | 8         | 7                  | 0                                 | 1                      | 6                 | 70  |                   |
| 18      | MSE 221-1        | 6                                 | 5            | 2           | 7         | 6                  | 0                                 | 0                      | 5                 | 50  |                   |
| 19      | MSE 202-3 Russet | 5                                 | 4            | 4           | 9         | 5                  | 0                                 | 0                      | 2                 | 20  |                   |
| 20      | A 9014-2         | 6                                 | 3            | 4           | 8         | 3                  | 0                                 | 0                      | 8                 | 80  |                   |
| 21      | ND 2470-27       | 7                                 | 8            | 1           | 8         | 7                  | 0                                 | 0                      | 7                 | 70  |                   |
| 22      | V 0498-9         | 2                                 | 8            | 2           | 3         | 6                  | 0                                 | 0                      | 4                 | 40  |                   |
| 23      | ND 5084-3R       | 2                                 | 9            | 2           | 5         | 3                  | 0                                 | 2                      | 5                 | 70  |                   |
| 24      | ND 5822 C-7      | 7                                 | 6            | 2           | 6         | 7                  | 0                                 | 1                      | 9                 | 100 |                   |
| 25      | ND 3196-1R       | 2                                 | 8            | 2           | 5         | 3                  | 0                                 | 0                      | 6                 | 60  |                   |
| 26      | V 0498-1         | 3                                 | 8            | 2           | 9         | 3                  | 0                                 | 0                      | 8                 | 80  |                   |
| 27      | CV 98023-2       | 3                                 | 6            | 3           | 8         | 3                  | 0                                 | 0                      | 7                 | 70  |                   |
| 28      | V 0497-1         | 7                                 | 6            | 1           | 8         | 6                  | 0                                 | 0                      | 7                 | 70  |                   |
| 29      | B 0564-8         | 6                                 | 5            | 1           | 7         | 7                  | 0                                 | 0                      | 4                 | 40  |                   |
| 30      | B 0766-3         | 6                                 | 6            | 2           | 8         | 3                  | 0                                 | 0                      | 5                 | 50  |                   |

<sup>1</sup> See reference table for rating system on page 15.

<sup>2</sup> Number of tubers out of 10 tubers that contain the defect.

Table 9. Percent stand, maturity, yield and chip quality for entries grown in the Ohio NE-184 Regional Project experiment in 2002.

| Entry #        | Entry Name        | Stand % | Plant Maturity <sup>1</sup> | Total cwt/A | US # 1 cwt/A | US #1 % | B Size % | Cull % | Specific Gravity <sup>2</sup> | Chip Color <sup>3</sup> | Blister <sup>4</sup> % | Agtron 350 |
|----------------|-------------------|---------|-----------------------------|-------------|--------------|---------|----------|--------|-------------------------------|-------------------------|------------------------|------------|
| 1              | AF 1470-6         | 75      | 1                           | 138         | 90           | 65      | 6        | 29     | < 1.060                       | 5                       | 10                     | 14         |
| 2              | B 1425-9          | 86      | 1                           | 147         | 99           | 67      | 8        | 25     | 1.086                         | 4                       | 0                      | 26         |
| 3              | Dark Red Norland  | 95      | 1                           | 166         | 127          | 77      | 7        | 17     | 1.065                         | 5                       | 0                      | 19         |
| 4              | W 1242            | 88      | 2                           | 121         | 84           | 69      | 11       | 20     | 1.073                         | 3                       | 20                     | 45         |
| 5              | Keuka Gold (NY01) | 92      | 5                           | 171         | 123          | 72      | 8        | 20     | 1.067                         | 4-5                     | 20                     | 16         |
| 6              | Superior          | 85      | 1                           | 154         | 100          | 65      | 5        | 30     | 1.067                         | 5                       | 10                     | 18         |
| 7              | AF 1938-3         | 82      | 1                           | 156         | 117          | 75      | 5        | 20     | 1.080                         | 4-5                     | 30                     | 18         |
| 8              | Katahdin          | 88      | 6                           | 170         | 118          | 70      | 4        | 26     | 1.067                         | 5                       | 10                     | 21         |
| 9              | Aquilon           | 92      | 2                           | 184         | 129          | 70      | 9        | 21     | 1.079                         | 4                       | 20                     | 34         |
| 10             | Chieftain         | 87      | 1                           | 149         | 114          | 77      | 7        | 16     | 1.068                         | 5                       | 50                     | 20         |
| 11             | Snowden           | 95      | 2                           | 152         | 109          | 72      | 10       | 18     | 1.077                         | 4                       | 30                     | 26         |
| 12             | ARS W96 40022-5   | 92      | 2                           | 142         | 89           | 63      | 19       | 18     | 1.086                         | 4                       | 20                     | 24         |
| 13             | ARS W96 4654-1    | 92      | 6                           | 155         | 70           | 45      | 27       | 28     | 1.088                         | 2                       | 40                     | 34         |
| 14             | Kennebec          | 83      | 3                           | 168         | 116          | 69      | 11       | 20     | 1.069                         | 5                       | 0                      | 23         |
| 15             | Atlantic          | 93      | 3                           | 163         | 129          | 79      | 4        | 17     | 1.083                         | 2                       | 10                     | 32         |
| 16             | AF 1455-20        | 86      | 4                           | 154         | 117          | 76      | 9        | 15     | 1.084                         | 4                       | 10                     | 25         |
| 17             | NY 102            | 74      | 2                           | 127         | 96           | 76      | 8        | 17     | 1.084                         | 2                       | 20                     | 40         |
| 18             | Yukon Gold        | 74      | 2                           | 136         | 103          | 76      | 7        | 18     | 1.074                         | 5                       | 20                     | 26         |
| 19             | AF 1569-2         | 90      | 1                           | 159         | 133          | 84      | 10       | 6      | 1.074                         | 3                       | 40                     | 28         |
| 20             | NY 115            | 100     | 1                           | 143         | 83           | 58      | 17       | 25     | 1.077                         | 2                       | 30                     | 49         |
| 21             | B 1223-4          | 83      | 5                           | 164         | 105          | 64      | 13       | 24     | 1.071                         | 3                       | 0                      | 31         |
| 22             | B 1240-1          | 81      | 8                           | 182         | 135          | 74      | 3        | 23     | 1.083                         | 4                       | 30                     | 40         |
| 23             | AF 1775-2         | 92      | 8                           | 212         | 146          | 69      | 5        | 26     | 1.074                         | 4                       | 0                      | 33         |
| 24             | AF 1758-7         | 83      | 1                           | 111         | 59           | 53      | 10       | 37     | 1.070                         | 4                       | 10                     | 22         |
| 25             | AF 1763-2         | 89      | 1                           | 155         | 102          | 65      | 12       | 23     | 1.072                         | 4                       | 40                     | 22         |
| 26             | NY 112            | 76      | 2                           | 163         | 126          | 77      | 3        | 20     | 1.071                         | 2-3                     | 10                     | 40         |
| <b>Average</b> |                   | 87      | 3                           | 156         | 109          | 70      | 9        | 22     | 1.076                         | 4                       | 19                     | 28         |

<sup>1</sup> See reference table for rating system on page 15.

<sup>2</sup> See reference table on page 16 for starch and dry matter conversions.

<sup>3</sup> SFA Standard (1 = light, 5 = dark).

<sup>4</sup> Percentage of chips that developed blisters greater than 20 mm in diameter during the frying process.

Table 10. Tuber characteristics for entries grown in the Ohio NE-184 Regional Project experiment in 2002.

| Entry # | Entry Name        | ----- External <sup>1</sup> ----- |              |             |           |                    | ----- Internal <sup>2</sup> ----- |                        |                   |    | % Defected Tubers |
|---------|-------------------|-----------------------------------|--------------|-------------|-----------|--------------------|-----------------------------------|------------------------|-------------------|----|-------------------|
|         |                   | Skin Color                        | Skin Texture | Tuber Shape | Eye Depth | Overall Appearance | Hollow Heart                      | Vascular Discoloration | Internal Necrosis |    |                   |
| 1       | AF 1470-6         | 7                                 | 8            | 1           | 8         | 8                  | 0                                 | 0                      | 3                 | 30 |                   |
| 2       | B 1425-9          | 6                                 | 6            | 2           | 9         | 4                  | 0                                 | 0                      | 1                 | 10 |                   |
| 3       | Dark Red Norland  | 2                                 | 6            | 2           | 5         | 3                  | 0                                 | 0                      | 1                 | 10 |                   |
| 4       | W 1242            | 7                                 | 6            | 2           | 7         | 5                  | 0                                 | 0                      | 1                 | 10 |                   |
| 5       | Keuka Gold (NY01) | 7                                 | 5            | 2           | 9         | 7                  | 0                                 | 0                      | 7                 | 70 |                   |
| 6       | Superior          | 6                                 | 5            | 2           | 4         | 6                  | 0                                 | 0                      | 2                 | 20 |                   |
| 7       | AF 1938-3         | 7                                 | 8            | 1           | 7         | 7                  | 0                                 | 0                      | 1                 | 10 |                   |
| 8       | Katahdin          | 7                                 | 8            | 2           | 6         | 7                  | 0                                 | 1                      | 7                 | 80 |                   |
| 9       | Aquilon           | 7                                 | 7            | 1           | 9         | 7                  | 0                                 | 0                      | 4                 | 40 |                   |
| 10      | Chieftain         | 3                                 | 7            | 2           | 3         | 5                  | 0                                 | 0                      | 2                 | 20 |                   |
| 11      | Snowden           | 6                                 | 5            | 2           | 4         | 4                  | 0                                 | 1                      | 2                 | 30 |                   |
| 12      | ARS W96 40022-5   | 5                                 | 6            | 2           | 5         | 5                  | 0                                 | 3                      | 3                 | 60 |                   |
| 13      | ARS W96 4654-1    | 6                                 | 5            | 2           | 5         | 2                  | 0                                 | 0                      | 1                 | 10 |                   |
| 14      | Kennebec          | 7                                 | 7            | 2           | 9         | 7                  | 0                                 | 0                      | 1                 | 10 |                   |
| 15      | Atlantic          | 6                                 | 5            | 2           | 5         | 8                  | 0                                 | 0                      | 8                 | 80 |                   |
| 16      | AF 1455-20        | 7                                 | 6            | 2           | 9         | 7                  | 0                                 | 0                      | 3                 | 30 |                   |
| 17      | NY 102            | 6                                 | 6            | 1           | 5         | 7                  | 0                                 | 0                      | 1                 | 10 |                   |
| 18      | Yukon Gold        | 6                                 | 5            | 2           | 1         | 5                  | 0                                 | 0                      | 2                 | 20 |                   |
| 19      | AF 1569-2         | 6                                 | 5            | 1           | 5         | 8                  | 0                                 | 0                      | 4                 | 40 |                   |
| 20      | NY 115            | 5                                 | 5            | 1           | 7         | 6                  | 0                                 | 0                      | 2                 | 20 |                   |
| 21      | B 1223-4          | 2                                 | 5            | 2           | 8         | 5                  | 0                                 | 0                      | 1                 | 10 |                   |
| 22      | B 1240-1          | 6                                 | 5            | 1           | 9         | 7                  | 0                                 | 0                      | 4                 | 40 |                   |
| 23      | AF 1775-2         | 7                                 | 6            | 2           | 5         | 6                  | 0                                 | 0                      | 8                 | 80 |                   |
| 24      | AF 1758-7         | 6                                 | 6            | 2           | 7         | 6                  | 0                                 | 0                      | 2                 | 20 |                   |
| 25      | AF 1763-2         | 6                                 | 6            | 2           | 7         | 6                  | 0                                 | 0                      | 3                 | 30 |                   |
| 26      | NY 112            | 5                                 | 5            | 2           | 5         | 7                  | 0                                 | 0                      | 5                 | 50 |                   |

<sup>1</sup> See reference table for rating system on page 15.

<sup>2</sup> Number of tubers out of 10 tubers that contain the defect.

Table 11. Percent stand, maturity, yield, and chip quality for entries grown in the Ohio Observations Plots and selected for chipping quality evaluation in 2002.

| Entry #                   | Entry Name | Stand % | Plant Maturity <sup>1</sup> | Total cwt/A | US # 1 cwt/A | US #1 % | B Size cwt/A | B Size % | Cull cwt/A | Cull % | Specific Gravity <sup>2</sup> | Chip Color <sup>3</sup> | Blister <sup>4</sup> % | Agtron 350 |
|---------------------------|------------|---------|-----------------------------|-------------|--------------|---------|--------------|----------|------------|--------|-------------------------------|-------------------------|------------------------|------------|
| <b>Single Observation</b> |            |         |                             |             |              |         |              |          |            |        |                               |                         |                        |            |
| 3                         | AF 2341-3  | 62      | 5                           | 44          | 32           | 73      | 1            | 3        | 10         | 23     | 1.073                         | 3                       | 20                     | 38         |
| 5                         | AF 2222-2  | 80      | 3                           | 61          | 37           | 61      | 4            | 7        | 19         | 32     | 1.089                         | 3                       | 40                     | 37         |
| 15                        | AF 2326-1  | 63      | 5                           | 48          | 12           | 24      | 2            | 4        | 34         | 71     | 1.086                         | 5                       | 20                     | 21         |
| 30                        | AF 2360-2  | 77      | 9                           | 60          | 36           | 61      | 2            | 3        | 21         | 35     | 1.076                         | 2-3                     | 40                     | 35         |
| 51                        | V 15-72    | 87      | 1                           | 71          | 42           | 60      | 4            | 6        | 24         | 34     | 1.074                         | 2                       | 20                     | 45         |
| 56                        | V 78-25    | 60      | 3                           | 47          | 22           | 47      | 3            | 5        | 22         | 47     | 1.061                         | 5                       | 20                     | 24         |
| 61                        | B 2135-163 | 70      | 3                           | 53          | 31           | 59      | 4            | 8        | 17         | 33     | 1.078                         | 2-3                     | 20                     | 33         |
| <b>Average</b>            |            | 71      | 4                           | 55          | 30           | 55      | 3            | 5        | 21         | 39     | 1.077                         | 3                       | 26                     | 33         |
| <b>Observation</b>        |            |         |                             |             |              |         |              |          |            |        |                               |                         |                        |            |
| 2                         | B 1991-126 | 61      | 8                           | 129         | 92           | 71      | 8            | 6        | 29         | 23     | 1.063                         | 5                       | 40                     | 21         |
| 3                         | B 0564-9   | 74      | 1                           | 124         | 91           | 73      | 7            | 6        | 26         | 21     | 1.076                         | 3-4                     | 30                     | 29         |
| 12                        | B 0564-8   | 81      | 1                           | 131         | 89           | 68      | 16           | 12       | 26         | 20     | 1.073                         | 4                       | 40                     | 30         |
| 18                        | Langlade   | 83      | 4                           | 157         | 110          | 70      | 8            | 5        | 39         | 25     | 1.071                         | 4                       | 80                     | 29         |
| 23                        | B 2001-197 | 77      | 2                           | 139         | 89           | 64      | 2            | 2        | 47         | 34     | 1.070                         | 3                       | 20                     | 40         |
| 24                        | B 1240-1   | 44      | 8                           | 114         | 88           | 77      | 4            | 3        | 23         | 20     | 1.078                         | 4                       | 30                     | 30         |
| 44                        | B 1870-17  | 80      | 1                           | 119         | 86           | 73      | 20           | 17       | 12         | 10     | 1.081                         | 5                       | 10                     | 30         |
| <b>Average</b>            |            | 71      | 3                           | 130         | 92           | 71      | 9            | 7        | 29         | 22     | 1.073                         | 4                       | 36                     | 30         |

<sup>1</sup> See reference table for rating system on page 15.

<sup>2</sup> See reference table on page 16 for starch and dry matter conversions.

<sup>3</sup> SFA Standard (1 = light, 5 = dark).

<sup>4</sup> Percentage of chips that developed blisters greater than 20 mm in diameter during the frying process.

Table 12. Tuber characteristics for entries grown in the Ohio Observations Plots and selected for chipping quality evaluation in 2002.

| Entry #                          | Entry Name        | ----- External <sup>1</sup> ----- |              |             |           |                    | ----- Internal <sup>2</sup> ----- |                        |                   | % Defected tubers |
|----------------------------------|-------------------|-----------------------------------|--------------|-------------|-----------|--------------------|-----------------------------------|------------------------|-------------------|-------------------|
|                                  |                   | Skin Color                        | Skin Texture | Tuber Shape | Eye Depth | Overall Appearance | Hollow Heart                      | Vascular Discoloration | Internal Necrosis |                   |
| <b><u>Single Observation</u></b> |                   |                                   |              |             |           |                    |                                   |                        |                   |                   |
| 3                                | <b>AF 2341-3</b>  | 7                                 | 7            | 1           | 7         | 7                  | 0                                 | 0                      | 0                 | 0                 |
| 5                                | <b>AF 2222-2</b>  | 7                                 | 6            | 3           | 8         | 5                  | 0                                 | 0                      | 3                 | 60                |
| 15                               | <b>AF 2326-1</b>  | 6                                 | 6            | 2           | 5         | 6                  | 0                                 | 0                      | 4                 | 80                |
| 30                               | <b>AF 2360-2</b>  | 7                                 | 7            | 2           | 5         | 5                  | 0                                 | 0                      | 0                 | 0                 |
| 51                               | <b>V 15-72</b>    | 6                                 | 7            | 2           | 8         | 7                  | 0                                 | 0                      | 1                 | 20                |
| 56                               | <b>V 78-25</b>    | 6                                 | 5            | 1           | 5         | 6                  | 0                                 | 0                      | 0                 | 0                 |
| 61                               | <b>B 2135-163</b> | 6                                 | 7            | 2           | 7         | 5                  | 0                                 | 0                      | 3                 | 60                |
| <b><u>Observation</u></b>        |                   |                                   |              |             |           |                    |                                   |                        |                   |                   |
| 2                                | <b>B 1991-126</b> | 7                                 | 7            | 2           | 8         | 6                  | 0                                 | 0                      | 1                 | 10                |
| 3                                | <b>B 0564-9</b>   | 7                                 | 6            | 1           | 7         | 6                  | 0                                 | 0                      | 1                 | 10                |
| 12                               | <b>B 0564-8</b>   | 7                                 | 6            | 1           | 5         | 5                  | 0                                 | 0                      | 0                 | 0                 |
| 18                               | <b>Langlade</b>   | 6                                 | 6            | 2           | 5         | 6                  | 0                                 | 0                      | 7                 | 70                |
| 23                               | <b>B 2001-197</b> | 7                                 | 8            | 1           | 8         | 8                  | 0                                 | 0                      | 4                 | 40                |
| 24                               | <b>B 1240-1</b>   | 6                                 | 5            | 1           | 9         | 8                  | 0                                 | 0                      | 3                 | 30                |
| 44                               | <b>B 1870-17</b>  | 6                                 | 6            | 5           | 8         | 7                  | 0                                 | 0                      | 3                 | 30                |

<sup>1</sup> See reference table for rating system on page 15.

<sup>2</sup> Number of tubers out of 5 or 10 tubers that contain the defect in the Single and Double Observations, respectively.



Table 13. Percent stand, maturity, and yield information for entries grown in the Ohio Observations Plots but not selected for chipping quality evaluation in 2002.

| Entry #      | Entry Name                    | % Stand | Plant Maturity | Total cwt/A | Entry #      | Entry Name        | % Stand | Plant Maturity | Total cwt/A |
|--------------|-------------------------------|---------|----------------|-------------|--------------|-------------------|---------|----------------|-------------|
| <b>S</b> 7   | <b>AF 2215-1</b>              | 97      | 3              | 61          | <b>OB</b> 25 | <b>B 1960-18</b>  | 77      | 2              | 89          |
| <b>S</b> 8   | <b>AF 2349-3</b>              | 80      | 3              | 36          | <b>OB</b> 26 | <b>B 1870-17</b>  | 80      | 1              | 134         |
| <b>S</b> 19  | <b>AF 2351-6</b>              | 77      | 5              | 61          | <b>OB</b> 27 | <b>B 1880-4</b>   | 90      | 2              | 147         |
| <b>S</b> 36  | <b>B 2066-3</b>               | 73      | 3              | 29          | <b>OB</b> 28 | <b>B 1884-9</b>   | 72      | 1              | 111         |
| <b>S</b> 40  | <b>B 2078-5</b>               | 100     | 3              | 49          | <b>OB</b> 29 | <b>B 1763-4</b>   | 91      | 2              | 123         |
| <b>S</b> 41  | <b>B 2098-11</b>              | 83      | 1              | 33          | <b>OB</b> 30 | <b>B 2003-136</b> | 95      | 2              | 164         |
| <b>S</b> 63  | <b>B 2078-1</b>               | 80      | 1              | 46          | <b>OB</b> 31 | <b>B 0811-4</b>   | 89      | 1              | 64          |
| <b>S</b> 64  | <b>B 2133-124</b>             | 53      | 7              | 41          | <b>OB</b> 32 | <b>B 2024-26</b>  | 82      | 6              | 150         |
| <b>OB</b> 1  | <b>B 1871-1</b>               | 61      | 1              | 90          | <b>OB</b> 33 | <b>B 1958-53</b>  | 77      | 4              | 158         |
| <b>OB</b> 4  | <b>B 1952-2</b>               | 68      | 1              | 110         | <b>OB</b> 34 | <b>B 2033-3</b>   | 92      | 4              | 124         |
| <b>OB</b> 5  | <b>B 2021-3</b>               | 96      | 4              | 136         | <b>OB</b> 35 | <b>B 2001-186</b> | 79      | 2              | 138         |
| <b>OB</b> 6  | <b>B 2017-2</b>               | 91      | 4              | 67          | <b>OB</b> 36 | <b>B 1873-4</b>   | 83      | 5              | 145         |
| <b>OB</b> 7  | <b>B 1145-2</b>               | 80      | 1              | 111         | <b>OB</b> 37 | <b>B 1806-8</b>   | 81      | 1              | 141         |
| <b>OB</b> 8  | <b>B 1971-11</b>              | 81      | 1              | 142         | <b>OB</b> 38 | <b>B 1991-129</b> | 63      | 6              | 150         |
| <b>OB</b> 9  | <b>B 1529-1</b>               | 83      | 4              | 131         | <b>OB</b> 39 | <b>B 1953-3</b>   | 90      | 1              | 110         |
| <b>OB</b> 10 | <b>B 0984-1</b>               | 78      | 3              | 128         | <b>OB</b> 40 | <b>B 1956-86</b>  | 86      | 3              | 133         |
| <b>OB</b> 11 | <b>B 1491-5</b>               | 69      | 1              | 109         | <b>OB</b> 41 | <b>B 1870-3</b>   | 90      | 1              | 149         |
| <b>OB</b> 13 | <b>NY127</b>                  | 51      | 2              | 103         | <b>OB</b> 42 | <b>B 1826-1</b>   | 76      | 4              | 142         |
| <b>OB</b> 14 | <b>19298 (Larson Farms)</b>   | 85      | 2              | 115         | <b>OB</b> 43 | <b>B 1873-6</b>   | 88      | 1              | 141         |
| <b>OB</b> 15 | <b>96013-1 (Larson Farms)</b> | 70      | 2              | 119         | <b>OB</b> 45 | <b>B 1970-1</b>   | 87      | 1              | 104         |
| <b>OB</b> 16 | <b>Satina</b>                 | 78      | 8              | 138         | <b>OB</b> 46 | <b>B 1816-5</b>   | 80      | 1              | 131         |
| <b>OB</b> 17 | <b>Katahdin</b>               | 77      | 4              | 146         | <b>OB</b> 47 | <b>B 1880-6</b>   | 87      | 1              | 149         |
| <b>OB</b> 19 | <b>Reba</b>                   | 93      | 3              | 133         | <b>OB</b> 48 | <b>U 47-21</b>    | 72      | 2              | 158         |
| <b>OB</b> 20 | <b>Sandy</b>                  | 81      | 4              | 143         | <b>OB</b> 49 | <b>Ida Rose</b>   | 71      | 7              | 134         |
| <b>OB</b> 21 | <b>NY 129</b>                 | 77      | 4              | 160         | <b>OB</b> 50 | <b>All Blue</b>   | 92      | 4              | 89          |
| <b>OB</b> 22 | <b>T 17-2</b>                 | 75      | 1              | 122         | <b>OB</b> 51 | <b>True Blue</b>  | 99      | 4              | 53          |

<sup>1</sup> Entries lacking yield data were not harvested.

## TUBER DATA RATING SYSTEM FOR POTATO VARIETY TRIALS

### Tuber Skin Color

1. Purple
2. Red
3. Pink
4. Dark Brown
5. Brown
6. Tan
7. Buff
8. White
9. Cream

### Skin Texture

1. Part. russet
2. Heavy russet
3. Mod. russet
4. Light russet
5. Netted
6. Slight netting
7. Moderately
8. Smooth
9. Very smooth

### Tuber Shape

1. Round
2. Mostly round
3. Round to oblong
4. Mostly oblong
5. Oblong to long
6. Mostly long
7. Long
8. Cylindrical

### Eye Depth

1. VD
2. --
3. D
4. --
5. Intermediate
6. --
7. S
8. --
9. VS

### Appearance

1. Very poor
2. --
3. Poor
4. --
5. Fair
6. --
7. Good
8. --
9. Excellent

## PLANT RATING SYSTEM

### Plant Type

1. Decumbent-poor canopy
2. Decumbent-fair canopy
3. Decumbent-good canopy
4. Spreading-poor canopy
5. Spreading-fair canopy
6. Spreading-good canopy
7. Upright-poor canopy
8. Upright-fair canopy
9. Upright-good canopy

### Air Pollution

0. Dead
1. Decreasing plant appearance
2. with varying degrees
3. of defoliation
- 4.
5. most leaves have symptoms, but generally appearance is still good
6. good plant condition with decreasing
7. percent of foliar symptoms
- 8.
9. no symptoms

### Plant size

1. Very small
2. +
3. Small
4. +
5. Medium
6. +
7. Large
8. +
9. Very large

### Plant Maturity

1. Very early
2. Early
3. +
4. Medium early
5. Medium
6. Medium late
7. +
8. Late
9. Very late

### Plant Appearance

1. Very poor
2. Poor
3. +
4. --
5. Fair
6. +
7. --
8. Good
9. Excellent

**Conversion Table for Specific Gravity of Potato Tubers to Content of Starch and Dry Matter % (Calculated from Von Scheele equations: % starch = 17.565 + 199.07 (Sp. Gr.-1.0988); % dry matter = 24.181 + 211.04 (Sp. Gr.-1.0988))**

| Specific Gravity | Starch % | Dry Matter % | Specific Gravity | Starch % | Dry Matter% |
|------------------|----------|--------------|------------------|----------|-------------|
| 1.050            | 7.85     | 13.88        | 1.081            | 14.02    | 20.43       |
| 1.051            | 8.05     | 14.09        | 1.082            | 14.22    | 20.64       |
| 1.052            | 8.25     | 14.31        | 1.083            | 14.42    | 20.85       |
| 1.053            | 8.45     | 14.32        | 1.084            | 14.62    | 21.06       |
| 1.054            | 8.65     | 14.73        | 1.085            | 14.82    | 21.27       |
| 1.055            | 8.85     | 14.94        | 1.086            | 15.02    | 21.48       |
| 1.056            | 9.04     | 15.15        | 1.987            | 15.22    | 21.69       |
| 1.057            | 9.24     | 15.38        | 1.088            | 15.41    | 21.90       |
| 1.058            | 9.44     | 15.57        | 1.089            | 15.61    | 22.11       |
| 1.059            | 9.64     | 15.78        | 1.090            | 15.81    | 22.33       |
| 1.060            | 9.84     | 15.99        | 1.091            | 16.01    | 22.54       |
| 1.061            | 10.04    | 16.21        | 1.092            | 16.20    | 22.75       |
| 1.062            | 10.24    | 16.42        | 1.093            | 16.41    | 22.96       |
| 1.063            | 10.44    | 16.63        | 1.094            | 16.61    | 23.17       |
| 1.064            | 10.64    | 16.84        | 1.095            | 16.81    | 23.38       |
| 1.065            | 10.84    | 17.05        | 1.096            | 17.01    | 23.59       |
| 1.066            | 11.04    | 17.26        | 1.097            | 17.21    | 23.89       |
| 1.067            | 11.23    | 17.47        | 1.098            | 17.41    | 24.01       |
| 1.068            | 11.43    | 17.68        | 1.099            | 17.60    | 24.22       |
| 1.069            | 11.63    | 17.89        | 1.100            | 17.80    | 24.44       |
| 1.070            | 11.83    | 18.10        | 1.101            | 18.00    | 24.65       |
| 1.071            | 12.03    | 18.32        | 1.102            | 18.20    | 24.86       |
| 1.072            | 12.23    | 18.53        | 1.103            | 18.40    | 25.07       |
| 1.073            | 12.43    | 18.74        | 1.104            | 18.60    | 25.28       |
| 1.074            | 12.63    | 18.95        | 1.105            | 18.80    | 25.49       |
| 1.075            | 12.83    | 19.16        | 1.106            | 19.00    | 25.70       |
| 1.076            | 13.03    | 19.37        | 1.107            | 19.20    | 25.91       |
| 1.077            | 13.22    | 19.58        | 1.180            | 19.40    | 26.12       |
| 1.078            | 13.42    | 19.79        | 1.109            | 29.60    | 26.34       |
| 1.079            | 13.62    | 20.00        | 1.110            | 19.79    | 26.55       |
| 1.080            | 13.82    | 220.21       | 1.111            | 19.99    | 26.76       |

Factors Affecting the Specific Gravity of the White Potato in Maine. Maine Agricultural Experiment Station. Bulletin 583. May 1959.