

**RESEARCH PROGRESS REPORT FOR 1988**

**"Physiological and Cultural Studies"**

**Submitted to the**

**SLV Research Center Committee**

**and the**

**Area II Potato Administrative Committee**

**by**

**David G. Holm**

**San Luis Valley Research Center**

RESEARCH PROGRESS REPORT FOR 1988  
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Postharvest evaluations were conducted in the following areas in 1988:

- A) Blackspot Susceptibility
- B) Storage Weight Loss and Dormancy
- C) Specific Gravity, Chip Color, French Fry Color and Texture
- D) Baked Flavor and Color, Enzymatic Browning, Vitamin C, Glycoalkaloids, Protein, and Sugars (tests conducted by Dr. Joe Maga, Department of Food Science and Human Nutrition).

General Comments

Eighty-seven samples representing 58 advanced selections and 10 cultivars were evaluated for two or more of the following characteristics: blackspot susceptibility, storage weight loss, dormancy, specific gravity, chip color, french fry color and texture. Thirty clones (24 selections and 6 cultivars) were selected for additional quality evaluations as itemized in item D above.

Blackspot

Ten randomly selected tubers from each clone tested were bruised on the stem and bud ends with a 150 g weight dropped from a height of 60 cm. Tubers were stored at 40°F prior to bruising. After bruising, tubers were stored at room temperature for three days prior to evaluation. Blackspot susceptibility was evaluated by cutting the tubers in half longitudinally and rating the extent of damage.

Blackspot indices ranged from 2.0 to 4.9 (Table 1). Thirty advanced selections had little or no discoloration. Selections with severe discoloration were: AC80369-1, AC82693-4, CO08014-1, and W842. Two of these selections, AC80369-1 and CO08014-1, have Lemhi Russet as a parent. Lemhi Russet is very susceptible to blackspot.

### Specific Gravity

Specific gravities were lower in 1988 than typically. This may be associated with stress induced from a hail storm which hit the Research Center on August 7.

Twenty-eight advanced selections had specific gravities  $\geq 1.080$  (Table 1). Specific gravities  $\geq 1.080$  are required for processing selections. Selections with very high gravities ( $\geq 1.090$ ) were: A7816-14, A80559-2, AC80369-1, AC83172-1, CO81103-1, CO8204-3, CO83120-3, and W842.

### Storage Weight Loss and Dormancy

Ten randomly selected tubers were weighed into storage on October 11, 1988 and held at 45°F for a four month period under low relative humidity conditions. Dormancy evaluations were made at the same time tubers were weighed at the end of four months. Results are summarized in Table 1.

Percent weight loss ranged from 3.4 to 12.0% (Table 1). Most selections had greater weight losses in storage than Russet Burbank.

Most selections also had shorter dormancy periods than Russet Burbank. Only eight selections had dormancy periods comparable to Russet Burbank.

Based on these results, more emphasis needs to be placed on breeding for a longer dormancy period. This is especially needed if some of the sprout inhibiting chemicals were to be banned.

### Fry Color and Texture

Data are presented in Table 2 on french fry color and texture. Thirteen selections produced french fries with acceptable color. They were: A7816-14, AC77226-13, AC7869-17, AC80369-1, AC83064-6, AC83172-1, BC0224-3, BC0038-1, CO7918-11, CO8138-6, CO8195-4, CO8204-3, and CO08014-1.

Several selections had good french fry texture ratings. Clones with excellent fry texture (rating  $\geq 4$ ) were: A7816-14, AC79100-1, AC80369-1, AC83064-6, BC0038-1, and CO8195-4.

### Baked Flavor and Color. Enzymatic Browning. Vitamin C. Glycoalkaloids. Protein. and Sugars

Results of these tests are summarized in Table 3. None of the selections evaluated were disliked strongly for baked potato flavor or color. Only AC77101-1 had a 1 rating (liked a lot) for both flavor and color.

Six selections did not show any discoloration 30 minutes after slicing fresh tubers in half lengthwise. They were: AC75430-1, AC80545-1, CO8138-6, CO8190-1, CO81103-1, and CO82142-4. This characteristic will be of increasing importance with the concern over the use of sulfites in the food processing industry.

Russet Nugget had more vitamin C than any of the selections. Selections with more vitamin C than Russet Burbank and Centennial were: AC82693-4, CO8138-6, and CO81103-1.

None of the selections had excessively high levels of glycoalkaloids. Selections with  $\geq 20$  mg/100 g on a fresh weight basis are discarded.

Little variation was observed among the selections for protein (2.11 to 2.38%) and total sugars (1.21 to 1.55%).

Table 1. Specific gravity, blackspot, storage weight loss, and dormancy evaluations for chipping, intermediate, advanced, and Regional Trial clones - 1988.

| Clone                        | Specific Gravity | Blackspot Index <sup>1</sup> |          |         | % Weight Loss <sup>2</sup> | Dormancy Index <sup>3</sup> |
|------------------------------|------------------|------------------------------|----------|---------|----------------------------|-----------------------------|
|                              |                  | Bud End                      | Stem End | Average |                            |                             |
| *** SLV Chipping Study ***   |                  |                              |          |         |                            |                             |
| A80559-2                     | 1.108            | 3.8                          | 2.9      | 3.4     | 4.2                        | 3                           |
| AC80545-1                    | 1.083            | 4.2                          | 4.3      | 4.3     | 3.7                        | 4                           |
| AC81592-2                    | 1.078            | 3.6                          | 3.4      | 3.5     | 5.0                        | 2                           |
| AC83305-2                    | 1.071            | 3.9                          | 3.7      | 3.8     | 4.5                        | 2                           |
| AC83306-1                    | 1.083            | 5.0                          | 4.6      | 4.8     | 4.9                        | 3                           |
| BC0038-1                     | 1.079            | 3.9                          | 3.9      | 3.9     | 4.8                        | 2                           |
| BR7093-24                    | 1.082            | 4.2                          | 3.8      | 4.0     | 4.7                        | 4                           |
| CO81103-1                    | 1.091            | 4.8                          | 4.6      | 4.7     | 5.9                        | 2                           |
| W842                         | 1.094            | 3.0                          | 4.1      | 3.6     | 4.5                        | 1                           |
| Atlantic                     | 1.092            | 3.9                          | 3.7      | 3.8     | 5.4                        | 2                           |
| Norchip                      | 1.080            | 4.7                          | 4.3      | 4.5     | 5.8                        | 2                           |
| *** Intermediate Trial ***   |                  |                              |          |         |                            |                             |
| A74212-1                     | 1.083            | 3.7                          | 4.3      | 4.0     | 4.7                        | 3                           |
| AC79229-1                    | 1.088            | 4.9                          | 4.1      | 4.5     | 6.1                        | 2                           |
| AC81240-2                    | 1.078            | 3.6                          | 3.0      | 3.3     | 5.0                        | 3                           |
| AC83034-1                    | 1.080            | 4.9                          | 4.1      | 4.5     | 6.9                        | 1                           |
| AC83044-1                    | 1.088            | 4.2                          | 3.2      | 3.7     | 9.3                        | 5                           |
| AC83044-2                    | 1.085            | 3.8                          | 3.8      | 3.8     | 4.5                        | 1                           |
| AC83064-1                    | 1.076            | 4.6                          | 4.8      | 4.7     | 5.9                        | 1                           |
| AC83064-6                    | 1.077            | 4.2                          | 4.6      | 4.4     | 6.0                        | 1                           |
| AC83068-1                    | 1.086            | 3.2                          | 3.5      | 3.4     | 4.3                        | 3                           |
| AC83172-1                    | 1.096            | 4.6                          | 4.0      | 4.3     | 5.6                        | 1                           |
| CO8327-2                     | 1.089            | 5.0                          | 4.8      | 4.9     | 7.1                        | 1                           |
| CO8327-3                     | 1.075            | 4.1                          | 4.6      | 4.4     | 7.0                        | 1                           |
| CO8329-2                     | 1.082            | 4.8                          | 3.6      | 4.2     | 8.2                        | 3                           |
| CO8394-4                     | 1.089            | 3.9                          | 3.3      | 3.6     | 4.4                        | 4                           |
| CO83120-3                    | 1.091            | 4.5                          | 4.0      | 4.3     | 4.8                        | 3                           |
| Centennial Russet            | 1.084            | 4.5                          | 4.4      | 4.5     | 6.9                        | 2                           |
| Lemhi Russet                 | 1.090            | 2.4                          | 2.2      | 2.3     | 4.8                        | 3                           |
| Norgold Russet               | 1.076            | 4.0                          | 3.4      | 3.7     | 5.5                        | 1                           |
| Russet Burbank               | 1.079            | 3.5                          | 4.3      | 3.9     | 3.9                        | 5                           |
| Russet Nugget                | 1.089            | 4.7                          | 4.1      | 4.4     | 4.7                        | 4                           |
| Sangre                       | 1.076            | 3.7                          | 3.9      | 3.8     | 4.3                        | 3                           |
| *** Advanced Yield Trial *** |                  |                              |          |         |                            |                             |
| AC75430-1                    | 1.085            | 3.6                          | 3.3      | 3.5     | 4.2                        | 4                           |
| AC7869-17                    | 1.083            | 4.2                          | 4.4      | 4.3     | 4.6                        | 3                           |

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Table 1. Continued.

| Clone | Specific Gravity | Blackspot Index <sup>1</sup> |          |         | % Weight Loss <sup>2</sup> | Dormancy Index <sup>3</sup> |
|-------|------------------|------------------------------|----------|---------|----------------------------|-----------------------------|
|       |                  | Bud End                      | Stem End | Average |                            |                             |

  

\*\*\* Advanced Yield Trial (continued) \*\*\*

|                   |       |     |     |     |      |   |
|-------------------|-------|-----|-----|-----|------|---|
| AC81138-1         | 1.076 | 4.4 | 4.4 | 4.4 | 10.5 | 3 |
| AC81198-11        | 1.068 | 3.7 | 3.6 | 3.7 | 5.0  | 3 |
| AC82263-1         | 1.078 | 4.4 | 4.2 | 4.3 | 6.8  | 3 |
| AC82693-4         | 1.065 | 2.2 | 2.7 | 2.4 | 5.6  | 2 |
| AC82706-2         | 1.070 | 4.1 | 4.3 | 4.2 | 4.4  | 2 |
| BC0169-12         | 1.078 | 4.7 | 3.9 | 4.3 | 5.7  | 3 |
| BC0224-3          | 1.084 | 3.9 | 3.2 | 3.6 | 7.2  | 1 |
| CO7918-11         | 1.073 | 4.2 | 4.0 | 4.1 | 5.3  | 2 |
| CO8118-2          | 1.072 | 4.7 | 4.6 | 4.7 | 12.0 | 1 |
| CO8138-6          | 1.074 | 4.6 | 3.9 | 4.3 | 7.9  | 2 |
| CO8182-1          | 1.068 | 5.0 | 4.8 | 4.9 | 6.0  | 2 |
| CO8190-1          | 1.070 | 3.8 | 4.1 | 4.0 | 8.5  | 1 |
| CO8195-4          | 1.089 | 3.7 | 3.1 | 3.4 | 5.8  | 2 |
| CO8204-3          | 1.090 | 4.5 | 3.9 | 4.2 | 4.4  | 2 |
| CO82142-4         | 1.080 | 3.9 | 4.5 | 4.2 | 6.2  | 2 |
| NDTX9-1069-4RU    | 1.072 | 4.3 | 4.1 | 4.2 | 4.0  | 4 |
| Centennial Russet | 1.075 | 4.8 | 4.8 | 4.8 | 8.6  | 2 |
| Norgold Russet    | 1.069 | 3.4 | 3.2 | 3.3 | 6.5  | 1 |
| Russet Burbank    | 1.074 | 3.7 | 3.6 | 3.7 | 3.7  | 5 |
| Sangre            | 1.071 | 4.2 | 4.1 | 4.2 | 4.9  | 3 |

  

\*\*\* Western Regional Chipping Trial \*\*\*

|           |       |     |     |     |     |   |
|-----------|-------|-----|-----|-----|-----|---|
| A80559-2  | 1.097 | 3.2 | 2.8 | 3.0 | 5.9 | 4 |
| AC80545-1 | 1.081 | 3.8 | 4.3 | 4.1 | 5.1 | 4 |
| AC81592-2 | 1.078 | 4.0 | 3.3 | 3.7 | 6.4 | 2 |
| BR7093-24 | 1.080 | 3.8 | 3.7 | 3.8 | 6.9 | 3 |
| CO81103-1 | 1.085 | 4.0 | 4.0 | 4.0 | 8.0 | 1 |
| W842      | 1.089 | 1.8 | 2.6 | 2.2 | 5.1 | 1 |
| Atlantic  | 1.092 | 3.4 | 3.4 | 3.4 | 6.1 | 2 |
| Norchip   | 1.072 | 3.8 | 4.2 | 4.0 | 7.6 | 1 |

  

\*\*\* Western Regional Trial \*\*\*

|            |       |     |     |     |     |   |
|------------|-------|-----|-----|-----|-----|---|
| A7816-14   | 1.090 | 4.6 | 4.1 | 4.4 | 6.9 | 3 |
| A7961-1    | 1.084 | 4.3 | 3.4 | 3.9 | 6.8 | 2 |
| AC77101-1  | 1.076 | 3.6 | 3.0 | 3.3 | 6.5 | 3 |
| AC77226-13 | 1.072 | 3.9 | 4.8 | 4.4 | 7.8 | 4 |
| AC79100-1  | 1.075 | 4.5 | 4.5 | 4.5 | 6.0 | 4 |
| AC80369-1  | 1.090 | 2.2 | 1.7 | 2.0 | 7.2 | 2 |
| BC0038-1   | 1.082 | 3.8 | 3.5 | 3.7 | 5.5 | 3 |
| CO8011-5   | 1.069 | 4.0 | 3.8 | 3.9 | 5.8 | 2 |

Continued

Table 1. Continued.

| Clone                                      | Specific Gravity | Blackspot Index <sup>1</sup> |          |         | % Weight Loss <sup>2</sup> | Dormancy Index <sup>3</sup> |
|--|------------------|------------------------------|----------|---------|----------------------------|-----------------------------|
|  |                  | Bud End                      | Stem End | Average |                            |                             |
| *** Western Regional Trial (continued) *** |                  |                              |          |         |                            |                             |
| CO08014-1                                  | 1.086            | 3.0                          | 2.5      | 2.8     | 4.6                        | 2                           |
| NDTX9-1068-11R                             | 1.066            | 3.5                          | 2.9      | 3.2     | 9.1                        | 3                           |
| Centennial Russet                          | 1.081            | 4.2                          | 4.2      | 4.2     | 8.7                        | 2                           |
| Lemhi Russet                               | 1.090            | 2.1                          | 2.0      | 2.1     | 5.3                        | 2                           |
| Norgold Russet                             | 1.080            | 4.5                          | 4.0      | 4.3     | 7.0                        | 1                           |
| Red LaSoda                                 | 1.077            | 3.4                          | 3.2      | 3.3     | 5.3                        | 2                           |
| Russet Burbank                             | 1.080            | 4.1                          | 4.4      | 4.3     | 3.4                        | 5                           |
| Russet Nugget                              | 1.089            | 4.4                          | 4.9      | 4.7     | 3.9                        | 3                           |
| Sangre                                     | 1.067            | 3.9                          | 4.2      | 4.1     | 5.1                        | 3                           |
| White Rose                                 | 1.070            | 4.1                          | 4.3      | 4.2     | 6.6                        | 2                           |

<sup>1</sup>Blackspot was rated on a 1 to 5 scale, with 5 indicating no discoloration.

<sup>2</sup>Tubers were stored at 45°F for a four month period.

<sup>3</sup>Dormancy was rated based on sprout length after the tubers were stored at 45°F for four months. The following scale was used: 1=>2"; 2=1-2"; 3=1/4-1"; 4=<1/4"; and 5=no visible growth.

Table 2. Specific gravity, french fry color, and fry texture for intermediate, advanced, and Western Regional Trial clones.

| Clone                        | Specific Gravity | Fry Color <sup>1</sup> |             | Fry Texture <sup>2</sup> |             |
|------------------------------|------------------|------------------------|-------------|--------------------------|-------------|
|                              |                  | At Harvest             | 4 wks 50°F+ | At Harvest               | 4 wks 50°F+ |
|                              |                  |                        | 9 wks 45°F  |                          | 9 wks 45°F  |
| *** Intermediate Trial ***   |                  |                        |             |                          |             |
| A74212-1                     | 1.083            | 2                      | 2           | 3                        | 2           |
| AC79229-1                    | 1.088            | 1                      | 2           | 2                        | 2           |
| AC81240-2                    | 1.078            | 1                      | 2           | 1                        | 1           |
| AC83034-1                    | 1.080            | 2                      | 3           | 2                        | 2           |
| AC83044-1                    | 1.088            | 3                      | 2           | 3                        | 3           |
| AC83044-2                    | 1.085            | 1                      | 1           | 2                        | 3           |
| AC83064-1                    | 1.076            | 3                      | 1           | 4                        | 3           |
| AC83064-6                    | 1.077            | 4                      | 3           | 3                        | 4           |
| AC83068-1                    | 1.086            | 3                      | 2           | 3                        | 3           |
| AC83172-1                    | 1.096            | 4                      | 3           | 2                        | 2           |
| CO8327-2                     | 1.089            | 3                      | 2           | 3                        | 2           |
| CO8327-3                     | 1.075            | 1                      | 1           | 2                        | 2           |
| CO8329-2                     | 1.082            | 2                      | 2           | 3                        | 3           |
| CO8394-4                     | 1.089            | 2                      | 2           | 3                        | 3           |
| CO83120-3                    | 1.091            | 4                      | 2           | 4                        | 3           |
| Lemhi Russet                 | 1.090            | 3                      | 3           | 2                        | 3           |
| Russet Burbank               | 1.079            | 3                      | 3           | 4                        | 3           |
| Russet Nugget                | 1.089            | 3                      | 3           | 4                        | 4           |
| *** Advanced Yield Trial *** |                  |                        |             |                          |             |
| AC75430-1                    | 1.085            | 3                      | 2           | 2                        | 3           |
| AC7869-17                    | 1.083            | 4                      | 3           | 3                        | 3           |
| AC81138-1                    | 1.076            | 3                      | 2           | 3                        | 2           |
| AC81198-11                   | 1.068            | 2                      | 1           | 3                        | 2           |
| AC82263-1                    | 1.078            | 3                      | 2           | 2                        | 3           |
| AC82693-4                    | 1.065            | 2                      | 2           | 3                        | 2           |
| AC82706-2                    | 1.070            | 2                      | 1           | 3                        | 3           |
| BC0169-12                    | 1.078            | 2                      | 2           | 3                        | 2           |
| BC0224-3                     | 1.084            | 4                      | 4           | 2                        | 3           |
| CO7918-11                    | 1.073            | 3                      | 3           | 4                        | 3           |
| CO8118-2                     | 1.072            | 2                      | 2           | 4                        | 3           |
| CO8138-6                     | 1.074            | 4                      | 3           | 3                        | 3           |
| CO8182-1                     | 1.068            | 1                      | 1           | 3                        | 3           |
| CO8190-1                     | 1.070            | 2                      | 1           | 4                        | 3           |
| CO8195-4                     | 1.089            | 4                      | 4           | 5                        | 4           |
| CO8204-3                     | 1.090            | 4                      | 3           | 3                        | 3           |
| CO82142-4                    | 1.080            | 1                      | 2           | 2                        | 2           |
| NDTX9-1069-4RU               | 1.072            | 2                      | 2           | 2                        | 2           |
| Centennial Russet            | 1.075            | 1                      | 1           | 4                        | 3           |

Continued



Table 2. Continued.

| Clone                                    | Specific Gravity | Fry Color <sup>1</sup> |                           | Fry Texture <sup>2</sup> |                           |
|--|------------------|------------------------|---------------------------|--------------------------|---------------------------|
|  |                  | At Harvest             | 4 wks 50°F+<br>9 wks 45°F | At Harvest               | 4 wks 50°F+<br>9 wks 45°F |
| *** Advanced Yield Trial (continued) *** |                  |                        |                           |                          |                           |
| Norgold Russet                           | 1.069            | 1                      | 1                         | 3                        | 2                         |
| Russet Burbank                           | 1.074            | 3                      | 3                         | 4                        | 3                         |
| Sangre                                   | 1.071            | 2                      | 1                         | 2                        | 2                         |
| *** Western Regional Trial ***           |                  |                        |                           |                          |                           |
| A7816-14                                 | 1.090            | 3                      | 3                         | 4                        | 4                         |
| A7961-1                                  | 1.084            | 3                      | 2                         | 5                        | 3                         |
| AC77101-1                                | 1.076            | 2                      | 3                         | 3                        | 3                         |
| AC77226-13                               | 1.072            | 4                      | 4                         | 2                        | 3                         |
| AC79100-1                                | 1.075            | 3                      | 2                         | 4                        | 4                         |
| AC80369-1                                | 1.090            | 4                      | 4                         | 4                        | 4                         |
| BC0038-1                                 | 1.082            | 4                      | 5                         | 4                        | 4                         |
| CO8011-5                                 | 1.069            | 3                      | 2                         | 2                        | 2                         |
| CO08014-1                                | 1.086            | 4                      | 4                         | 3                        | 3                         |
| NDTX9-1068-11R                           | 1.066            | 2                      | 1                         | 3                        | 2                         |
| Centennial Russet                        | 1.081            | 2                      | 1                         | 4                        | 3                         |
| Lemhi Russet                             | 1.090            | 3                      | 3                         | 4                        | 4                         |
| Norgold Russet                           | 1.080            | 2                      | 2                         | 4                        | 3                         |
| Red LaSoda                               | 1.077            | 3                      | 2                         | 3                        | 3                         |
| Russet Burbank                           | 1.080            | 4                      | 3                         | 4                        | 3                         |
| Russet Nugget                            | 1.089            | 4                      | 4                         | 5                        | 4                         |
| Sangre                                   | 1.067            | 2                      | 2                         | 4                        | 3                         |
| White Rose                               | 1.070            | 2                      | 2                         | 3                        | 3                         |

<sup>1</sup>Fry color was rated on a 1 to 5 scale, with 5 being the lightest or best color. Color ratings of  $\geq 3$  are acceptable.

<sup>2</sup>Fry texture was rated on a 1 to 5 scale, with 5 indicating the cooked flesh is dry, with 1 representing a soggy, wet texture.

Table 3. Potato quality evaluations - Joe Maga, 1988.

| Clone             | Baked<br>Flavor <sup>1</sup> | Baked<br>Color <sup>2</sup> | Enzymatic<br>Browning <sup>3</sup> | Vitamin<br>C <sup>4</sup> | Total Glyco-<br>alkaloids <sup>4</sup> | %<br>Protein <sup>5</sup> | % Total<br>Sugars <sup>5</sup> |
|-------------------|------------------------------|-----------------------------|------------------------------------|---------------------------|--|---------------------------|--------------------------------|
| A74212-1          | 2                            | 2                           | 3                                  | 25                        | 13.0                                   | 2.27                      | 1.41                           |
| AC75430-1         | 2                            | 2                           | 1                                  | 27                        | 12.0                                   | 2.31                      | 1.35                           |
| AC77101-1         | 1                            | 1                           | 3                                  | 27                        | 11.1                                   | 2.19                      | 1.37                           |
| AC7869-17         | 3                            | 2                           | 2                                  | 24                        | 10.0                                   | 2.17                      | 1.30                           |
| AC80369-1         | 2                            | 2                           | 3                                  | 25                        | 11.8                                   | 2.11                      | 1.27                           |
| AC80545-1         | 2                            | 2                           | 1                                  | 20                        | 10.1                                   | 2.22                      | 1.33                           |
| AC81198-11        | 2                            | 2                           | 3                                  | 19                        | 8.5                                    | 2.29                      | 1.35                           |
| AC81592-2         | 3                            | 2                           | 2                                  | 24                        | 9.3                                    | 2.25                      | 1.30                           |
| AC82263-1         | 2                            | 1                           | 5                                  | 29                        | 11.1                                   | 2.16                      | 1.32                           |
| AC82693-4         | 1                            | 2                           | 2                                  | 31                        | 11.5                                   | 2.20                      | 1.34                           |
| AC82706-2         | 3                            | 3                           | 3                                  | 28                        | 12.2                                   | 2.18                      | 1.37                           |
| BC0038-1          | 4                            | 3                           | 2                                  | 20                        | 13.6                                   | 2.41                      | 1.33                           |
| BC0169-12         | 3                            | 3                           | 2                                  | 22                        | 13.3                                   | 2.35                      | 1.37                           |
| BC0224-3          | 3                            | 3                           | 4                                  | 23                        | 13.4                                   | 2.31                      | 1.35                           |
| BR7093-24         | 2                            | 2                           | 2                                  | 21                        | 15.8                                   | 2.16                      | 1.30                           |
| CO7918-11         | 2                            | 2                           | 2                                  | 25                        | 10.7                                   | 2.27                      | 1.27                           |
| CO8011-5          | 2                            | 1                           | 2                                  | 27                        | 10.2                                   | 2.25                      | 1.25                           |
| CO8118-2          | 2                            | 2                           | 2                                  | 28                        | 8.0                                    | 2.21                      | 1.28                           |
| CO8138-6          | 2                            | 3                           | 1                                  | 30                        | 7.9                                    | 2.24                      | 1.31                           |
| CO8182-1          | 3                            | 3                           | 2                                  | 27                        | 9.7                                    | 2.29                      | 1.30                           |
| CO8190-1          | 3                            | 3                           | 1                                  | 27                        | 10.1                                   | 2.31                      | 1.24                           |
| CO8195-4          | 2                            | 3                           | 4                                  | 25                        | 8.9                                    | 2.30                      | 1.21                           |
| CO81103-1         | 3                            | 3                           | 1                                  | 32                        | 8.7                                    | 2.24                      | 1.24                           |
| CO82142-4         | 2                            | 3                           | 1                                  | 30                        | 8.6                                    | 2.21                      | 1.27                           |
| Atlantic          | 4                            | 3                           | 1                                  | 25                        | 11.0                                   | 2.19                      | 1.40                           |
| Centennial Russet | 1                            | 2                           | 2                                  | 29                        | 7.5                                    | 2.38                      | 1.50                           |
| Norchip           | 3                            | 3                           | 2                                  | 27                        | 11.9                                   | 2.27                      | 1.43                           |
| Russet Burbank    | 2                            | 2                           | 2                                  | 28                        | 10.1                                   | 2.31                      | 1.55                           |
| Russet Nugget     | 2                            | 2                           | 2                                  | 35                        | 8.9                                    | 2.34                      | 1.37                           |
| Sangre            | 4                            | 3                           | 1                                  | 30                        | 12.6                                   | 2.25                      | 1.35                           |
| Mean              | 2                            | 2                           | 2                                  | 26                        | 10.7                                   | 2.25                      | 1.33                           |

<sup>1</sup>Based on a taste panel assessment using the following scale: 1=like a lot; 2=like a little; 3=neither like nor dislike; 4=dislike a little; 5=dislike a lot.

<sup>2</sup>Rating based on whiteness and uniformity of interior color. Same scale used as for baked flavor.

<sup>3</sup>Degree of darkening rated 30 minutes after slicing fresh tubers in half lengthwise. Rated on a 1 to 5 scale, with 1 indicating no color change.

<sup>4</sup>Fresh weight basis, mg/100 g.

<sup>5</sup>Fresh weight basis.