Potato Test Selections for Chipping Use

Invention Summary

New potato test selections for chipping with very good to excellent fry color out of long term cold storage, low pickouts, and adapted to the Northeastern U.S. as well as comparable environments. These selections are available for evaluation.

Technology Overview

The Cornell potato breeding program has developed new potato selections that present great features for chipping use:

<table>
<thead>
<tr>
<th>Exp #</th>
<th>Chip color from 44F</th>
<th>Specific Gravity¹</th>
<th>Yield²</th>
<th>Maturity</th>
<th>Scab Resistance</th>
<th>G. Nematode Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>NY152</td>
<td>Excellent</td>
<td>0.007 less than Atlantic</td>
<td>101%</td>
<td>Full season</td>
<td>Moderate to good</td>
<td>Susceptible</td>
</tr>
<tr>
<td>NY157</td>
<td>Good</td>
<td>0.006 less than Atlantic</td>
<td>92%</td>
<td>Mid-season</td>
<td>Moderate</td>
<td>Ro1</td>
</tr>
<tr>
<td>NY140</td>
<td>Very good</td>
<td>0.012 less than Atlantic</td>
<td>115%</td>
<td>Full season</td>
<td>Susceptible</td>
<td>Ro1, Ro2</td>
</tr>
<tr>
<td>NY162</td>
<td>Excellent</td>
<td>0.005 less than Atlantic</td>
<td>94%</td>
<td>Late season</td>
<td>Moderate</td>
<td>Ro1</td>
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</tbody>
</table>

NY152 presents moderate to good resistance to common scab but is susceptible to race Ro1 of the golden nematode. It may also be resistant to potato virus Y. NY152 shows good-yielding ability, averaging 101% of the marketable yield of the cultivar ‘Atlantic’ in Tompkins County, New York. Tuber dormancy is about 4 weeks longer than ‘Atlantic’. NY152 presents excellent chip color from 44F storage in December, January and February compared to ‘Snowden’.

NY157 is a mid-season chipstock clone that is resistant to race Ro1 of the golden nematode and presents moderate resistance to scab. It demonstrates acceptable yielding ability, averaging 92% of the marketable yield of the cultivar ‘Atlantic’ in Tompkins County, New York. It presents also good chip color from 44F storage in December, January and February compared to ‘Snowden’.

NY140 is a dual purpose chipstock/tablestock clone that is resistant to blackspot bruise, resistant to both races Ro1 or Ro2 of the golden nematode and moderately resistant to early and late blight. It is susceptible to common scab. It demonstrates excellent yielding ability, averaging 115% of the marketable yield of the cultivar ‘Atlantic’ in Tompkins County, New York. Its specific gravity will, however, limit the locations where it could be grown for chips. It features a lightly textured skin; its tubers are large, remain white after boiling and do not slough significantly.

NY162 is a late season chipstock clone that is resistant to race Ro1 of the golden nematode and presents intermediate reaction to common scab. The tubers are round to oblong with moderately textured skin. NY162 demonstrates acceptable yielding ability, averaging 94% of the marketable yield of the cultivar ‘Atlantic’ in Tompkins County, New York. Tuber dormancy is two weeks longer than ‘Atlantic’. NY162 exhibits excellent chip color when processed after cold storage.

Potential Applications

Potato selections suitable for chipping.

¹ Specific gravity of potato tubers as compared to the ‘Atlantic’ cultivar: difference of density (n less than the specific gravity of ‘Atlantic’).
² Yield compared to the marketable yield of the cultivar ‘Atlantic’ in Tompkins County, NY.
Advantages

- Very good to excellent fry color out of long term cold storage;
- Resistance to common pathogens and pests facing the potato industry (Selection dependent: common scab, golden nematode, late blight, and potato virus Y);
- A low frequency of pickouts due to knobs, misshapes and growth cracks, as well as a low levels of internal defects (hollow heart, internal necrosis, black center);
- Adaptability to many growing areas and climate conditions.