

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 are adapted to the Northeastern U.S. as well as comparable environments. These selections are for evaluation use.

Technology Overview

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

Exp #	Chip color from 44F	Scab Resistance	G. Nematode Resistance	Yield ¹	Maturity	Specific Gravity ²
NY148	Very good	Resistant	Ro1	112%	Full season	0.002 less than Atlantic
NY152	Excellent	Moderate	Susceptible	103%	Full season	0.008 less than Atlantic
NY153	Excellent	Moderate	Ro1	96%	Full season	0.001 less than Atlantic
NY154	Excellent	Resistant	Susceptible	120%	Full season	0.007 less than Atlantic
NY140	very good	Susceptible	Ro1, Ro2	115%	Full season	0.012 less than Atlantic

Inventors:

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Type:

Plant varieties

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Cornell Reference:

D-5150 (NY140)

D-5793 (NY148)

D-6160 (NY152)

D-6161 (NY153)

D-6671 (NY154)

NY148 is a **high specific gravity** chipstock clone that is **resistant to race Ro1** of the golden nematode, **resistant to scab**, resistant to **potato virus Y***, and **moderately resistant to both early and late blight**. It shows **good-yielding ability**, averaging 112% of the marketable yield of the cultivar 'Atlantic' in Tompkins County, New York. This selection displays a period of dormancy comparable to 'Atlantic' and its chip color from 44F storage is reasonable compared to 'Snowden'. It has scurfy skin and its tubers are similar in size to 'Snowden'.

NY152 presents **moderate resistance to scab** but is susceptible to race Ro1 of the golden nematode. It shows **good-yielding ability**, averaging 103% of the marketable yield of the cultivar 'Atlantic' in Tompkins County, New York. It also presents **excellent chip color** from 44F storage in December, January and February compared to 'Snowden'.

NY153 is a **high specific gravity** chipstock clone that is **resistant to race Ro1** of the golden nematode and presents **moderate resistant to scab**. It shows acceptable yield, averaging 96% of the marketable yield of the cultivar 'Atlantic' in Tompkins County, New York. It displays a **promising chip color** from 44F storage compared to 'Snowden' cultivar.

NY154 is **resistant to scab** but is susceptible to race Ro1 of the golden nematode. It shows a **high-yielding ability**, averaging 120% of the marketable yield of the cultivar 'Atlantic' in Tompkins County, New York and has a period of dormancy of 1 week longer than for 'Atlantic'. It also presents **promising chip color** from 44F storage compared to 'Snowden'.

¹ Yield compared to the marketable yield of the cultivar 'Atlantic' in Tompkins County, NY.

² Specific gravity of potato tubers as compared to the 'Atlantic' cultivar: difference of density (n less than the specific gravity of 'Atlantic').

NY140 selection is a dual use 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.

Potential Applications

Potato selections suitable for chipping.

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: Powdery scab, golden nematode, blackspot bruise, and potato virus Y*³);
- 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.

³ NY148 is resistant to PVY, potato virus Y.