TECHNOLOGY BRIEF

Potato Test Selections for Chipping Use

Inventors:
Walter S. De Jong

Type:
Plant varieties

Licensing Contact:
Jess Lyga
607-255-0270
JML73@cornell.edu

Cornell Reference:
D-5150 (NY140)
D-6160 (NY152)
D-6675 (NY157)
D-7946 (NY162)

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:

Exp #	Chip color from 44F	Specific Gravity[1]	Yield[2]	Maturity	Scab Resistance	G. Nematode Resistance
NY152	Excellent	0.007 less than Atlantic	101%	Full season	Moderate to good	Susceptible
NY157	Good	0.006 less than Atlantic	92%	Mid-season	Moderate	Ro1
NY140	Very good	0.012 less than Atlantic	115%	Full season	Susceptible	Ro1, Ro2
NY162	Excellent	0.005 less than Atlantic	94%	Late season	Moderate	Ro1

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.