Red Pearl: A New Gourmet Red Potato Variety

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ABSTRACT

Red Pearl is a medium-late variety with round tubers of stable dark red skin and white flesh. It is an ideal gourmet and canning variety due to its high tuber set and high proportion of tubers less than 4.76 cm diameter (up to 71% of the total yield). Red Pearl has good boiling and baking qualities. Its specific gravity is slightly higher and the tuber dormancy is longer than Dark Red Norland. Red Pearl yields only 54% to 77% of Red Norland because of its small tuber size. Red Pearl is less susceptible to common scab (Streptomyces scabies) than Dark Red Norland, significantly more resistant to corky ring spot (Tobacco Rattle Virus) than Dark Red Norland and is resistant to bacterial wilt and brown rot (Ralstonia solanacearum). Red Pearl showed similar susceptibilities to several other diseases, including early blight, late blight, pink rot, and tuber soft rot, compared to Dark Red Norland. Red Pearl is more susceptible to shatter bruise and blackspot than Dark Red Norland when handled from storage at 7.2 C.

RESUMEN

Red Pearl es una variedad de papa de maduración mediana a tardía, con tubérculos de piel roja estable y pulpa blanca. Es una variedad de sabor delicado, ideal para enlatado debido a su alta tuberización y gran porción de tubérculos menores de 4.76 cm de diámetro (tamaño del 71% del rendimiento total). Red Pearl tiene buenas cualidades de cocción y horneado. Su gravedad específica es ligeramente más alta y el periodo de latencia del tubérculo es mayor que el de Dark Red Norland. El rendimiento de Red Pearl es de sólo un 54% a 77% que el de Red Norland debido a que sus tubérculos son más pequeños. Red Pearl es menos susceptible a la sarna común (Streptomyces scabies) y significativamente más resistente al anillo corchoso (Tobacco Rattle Virus) que Dark Red Norland. Es resistente a la marchitez bacteriana y a la pudrición morena (Ralstonia solanacearum). Red Pearl ha mostrado la misma susceptibilidad de Dark Red Norland a muchas otras otras enfermedades, incluyendo tizón temprano, tizón tardío, pudrición rosada y pudrición blanda del tubérculo. Red Pearl es más susceptible que Dark Red Norland a las magulladuras y a la mancha negra que se producen cuando los tubérculos son extraídos del almacén a 7.2 C.

BACKGROUND

Red Pearl (W 84-75R) was bred and selected at the University of Wisconsin-Madison’s Rhinelander Agricultural Research Station. It was developed from a cross between Red Norland and Redsen in 1983 (Figure 1). The clone was in the seedling stage in 1984, single-hill plots in 1985, 4-hill plots in 1986, 8-hill plots in 1987-1988, in the Wisconsin State Trials in 1990-1991 (Curwen et al. 1991), 1996-1997, 1999 (Kostichka 1997, 1998, 2000), and in the North Central Regional Trial (NCRT) in 1993 (Secor and Farnsworth 1994). It is notable for producing a high percentage of tubers of less than 4.76 cm (1 7/8 in.) diameter. Red Pearl was multiplied in Rhinelander in 1989 and tested for certifiable seed in the Florida winter test in 1990. Since then it has been included in the seed certification programs in Wisconsin, Minnesota, Colorado and New York. Red Pearl has been approved for Plant Variety Protection (PVP No. 9700269).
FIGURE 1.
Pedigree of Red Pearl.

DESCRIPTON

Plants

Growth habit: Spreading growth habit, stem type; 120-day maturity (mid-season variety); medium size. Stems: few and branched; medium anthocyanin coloration of the stem, and very weak single wings. Leaves: dark green (2.5 G 5/4 Munsell Color Chart) with sparse and short pubescence, with a medium open silhouette, and large leaf stipule size. Terminal leaflets: medium ovate shape, cuspidate tip and acute base shape, with medium margin waviness. Primary leaflets: medium ovate, medium small, and in 3-4 pairs. Secondary leaflets: 1-3 secondary. Petiole: medium anthocyanin coloration. Midribs: anthocyanin at the base.

Inflorescence


Tubers

Shape: Uniformly round, small size, with an average 15 to 25 tubers per plant; mean tuber length 47.6 mm (range 30-68, SD=6.9), mean tuber width 46.1 mm (range 32-68, SD=6.1), mean tuber thickness 37.3 mm (range 31-51, SD=4.9). Indices: width to length 97, thickness to length 78, and thickness to width 81. Skin: smooth, dark red (2.5 R 6/6 Munsell). Flesh: white (5 Y 8/4 Munsell). Eyes: medium deep, with a mean number eye per tuber of 9.8 (range 8-17), evenly distributed, eyebrows slightly prominent. Sprouts under diffuse light: a broad cylindrical general shape, having a strong pubescence on the sprout base, blue-violet sprout base with strong intensity of anthocyanin coloration; medium open sprout tip, weakly pubescent of reddish green color; medium frequency of sprout root initials, weak protrusion of lenticels, and medium long lateral shoots. Physiological characteristics: medium late vine maturity, low specific gravity (slightly higher than that of the Dark Red Norland), medium long dormancy.

Electrophoretic Pattern of Tubers

The isozyme pattern of Red Pearl is Mdh-1P5P1, Mdh-22222, Got-22222, Got-33333, Pgm-11111, Pgm-22222, Pgi-11111, Fru-33333, and 6-Pgdh-33333.