RUSSET NUGGET: A FRESH MARKET AND PROCESSING POTATO CULTIVAR WITH RESISTANCE TO COMMON SCAB

D. G. Holm, J. C. Miller, Jr., and D. G. Smallwood

Abstract

Russet Nugget is an oblong, smooth, high yielding potato with fresh market and processing qualities. It emerges quickly, produces an erect, large, vigorous vine with a profusion of white flowers, and is late maturing. Russet Nugget is very resistant to common scab, and moderately resistant to leafroll net necrosis, *Verticillium* wilt, and early blight (tuber and foliage). In the San Luis Valley of Colorado, yield of Russet Nugget is comparable to Russet Burbank, with a significantly greater percentage of U.S. No. 1 tubers. In Texas, total yield is comparable to Norgold 40, with a slightly lower percentage of U.S. No. 1 tubers. Tubers of Russet Nugget have high specific gravity and vitamin C content.

Compendio

Russet Nugget es un cultivar de papa de forma oblonga, cáspera lisa, maduración tardía y rendimiento superior con características tanto de mercado fresco como de procesamiento. Emerge rápidamente y produce tallos erectos y vigorosos, con una profusión marcada de flores blancas. Russet Nugget exibe resistencia superior a la costra común, y es moderadamente resistente a la necrosis reticulada, la marchitez causada por *Verticillium* y el tizón temprano (tubérculos y follaje). Russet Nugget demuestra un rendimiento potencial comparable a Russet Burbank, en el Valle de San Luis en Colorado, con un porcentaje significativamente mayor de tubérculos U.S. no. 1. En Texas, el rendimiento total es comparable a el de Norgold 40, pero el porcentaje de tubérculos U.S. no. 1 es un poco menor. Tubérculos de Russet Nugget exhiben una gravedad específica alta y un contenido de vitamina C elevado.

---

1Funding was provided by the Colorado Agricultural Experiment Station (Projects 712 and 109) and the Colorado Potato Administrative Committee, Area II. Texas Agricultural Experiment Station Technical Article 29037.
2Superintendent, Department of Horticulture, Colorado State University, San Luis Valley Research Center, Center, Colorado 81125.
3Professor, Department of Horticultural Sciences, Texas A&M University, College Station, TX 77843-2133.
4Senior Research Associate, Texas Agricultural Experiment Station, Lubbock, TX 79401-9757.

Accepted for publication December 6, 1991.
ADDITIONAL KEY WORDS: New potato cultivar, common scab resistance, leafroll, ring rot, vitamin C, french fries.
Introduction

Russet Nugget was officially released and named in January, 1989, by the Colorado and Texas Agricultural Experiment Stations. Russet Nugget, tested under pedigree number TC582-1, resulted from a cross of Krantz and AND71609-1 made at the Texas A&M University Agricultural Research and Extension Center, Lubbock, Texas in 1977. It was selected at the San Luis Valley Research Center, Center, CO in 1979.

The female parent, Krantz, is an oblong russet, with outstanding culinary and processing qualities and resistance to hollow heart, common scab, and late blight. The male parent, AND71609-1 (also tested as I39-1), is an oblong pink-eyed russet, with high solids, high yield, and vigorous vines. The wild species *S. phureja*, *S. spegazzinii* and *S. raphanifolium* are in the ancestry on the maternal side. The clone G65103 is from a cross of Yema de huevo (*S. phureja* from Peru) and W5289-2. The clone G65139 is from a cross of *S. spegazzinii* and *S. raphanifolium*.

The pedigree is as follows:

```
  MN108.56-1
   MN366.65-3
      F158-4
    G6743-5 (2x)

  Krantz
   MN108.56-1
    MN366.65-3
       F158-4
     G6743-5 (2x)
   G65103
     G65139
   A6698-4
     Nooksack
     Norgold Russet
   A66133-8
     Shoshoni
     Nooksack

  AND71609-1
   A6698-4
     Nooksack
   A66133-8
```

Description

PLANTS—Growth habit: large sized, upright, fast emergence, with a large root system. Stems: Thick, non-pigmented. Wings: inconspicuous small wings. Nodes: slightly enlarged. Leaves: dark green, moderately closed, moderately pubescent upper and lower surfaces. Terminal leaflets: ovate, apex symmetrically accumulate, base asymmetrically oblique, mean length (100 leaflets) 83 ± 8 mm, mean width 52 ± 6 mm, index width to length 0.62 ± 0.06. Primary leaflets: ovate, apex symmetrically accumulate, base asymmetrically oblique, generally four pairs, mean length (400 leaflets) 70 ± 8 mm, mean width 39 ± 5 mm, index width to length 0.55 ± 0.05. Secon-