



Highland Russet

A high yielding processing russet

- Yield & Grade
- Tuber Uniformity
- Specific Gravity
- Few Defects
- Ranger Russet x Russet Legend

Disease Ratings

Verticillium	mod susceptible
Common Scab	mod resistant
Powdery Scab	mod resistant
PVY ^O	mod resistant
PVY ^N	susceptible
Net Necrosis	mod susceptible
Late Blight Foliar	susceptible
Late Blight Tuber	mod resistant
Soft Rot	mod susceptible
Early Blight	mod susceptible
Corky Ringspot	susceptible

Highland Russet, known as A9045-7 prior to release in 2006, is a mid to late season russet variety with good processing quality. It produces high yields with a high percentage of U.S. No. 1 tubers with relatively good size uniformity. It has moderately high specific gravity and is resistant to second growth, hollow heart and most internal defects. Fresh market use for Highland Russet may be limited due to its light skin, but tuber conformation and uniformity are excellent.



Management

Fertilization: Total and US No.1 yield responses to N application indicate that N

requirements for **Highland Russet** are about 100-110% of Russet Burbank. Petiole nitrate sufficiency levels for **Highland** are about 3,000 to 5,000 ppm higher than Russet Burbank through tuber bulking. Excessive nitrogen can reduce yield and quality and prolong maturation and also can decrease specific gravity. Increased N application rates increased the proportion of large tubers but also tended to increase the proportion of culls and no. 2's

Spacing: Total and U.S.No.1 yields for **Highland Russet** were highest at the 8.2 inch spacing in Idaho. As seed piece spacing increased, the yield of > 14 oz tubers z increased while yields of 6-10 oz tubers decreased. The data indicate that an 8 to 10 inch seed piece spacing for **Highland Russet** is optimal for yield in southeast Idaho. However, a narrower spacing of 7-8 inches should be used if having a high proportion of very large tubers is a concern.

Highland Russet produces exceptionally large tubers in the Columbia Basin of Washington. Therefore, growers should space 1½ - to 2½ oz seed pieces 6-8 inches apart within 34 inch wide rows for late harvest and 8 to 10 inches apart for early harvest (110-130 days after planting). Recommended final planting depth is 6 inches below soil level.

Irrigation: Seasonal irrigation requirements for **Highland Russet** are similar to those for Russet Burbank, although **Highland Russet** is significantly more resistant to water stress-related tuber defects. Therefore, available soil moisture (ASM) should be maintained within the range of 65 to 80% for optimal yield and quality. This irrigation regime should minimize the potential for common scab development. Plant water uptake decreases appreciably in late August, so irrigation appli-

Jenny Gentry,

PO Box 9729 Moscow, ID 83843

www.pvmi.org

Phone: 208-242-2644

E-mail: jennygentry@pvmi.org

cation rates need to be adjusted according to soil moisture measurements to avoid developing excessively wet soil conditions that promote disease and enlarged lenticels. Bruise susceptibility is similar to Russet Burbank. Therefore, low soil moisture (<60%ASM) conditions should be avoided during tuber maturation and harvest to minimize tuber dehydration.

Harvest:

Vines should be killed 2-3 weeks before harvest to allow for proper skin maturation and chemical maturity.

Storage:

Tuber dormancy for **Highland Russet** is approximately 110 days at 42°F, 85 days at 45°F, and 80 days at 48°F. On average, this is 60 days shorter dormancy length than Russet Burbank. If long term storage is desired, sprout inhibitors must be applied before dormancy break (80 days at 48°F). *Fusarium* dry rot susceptibility in **Highland Russet** is similar to Russet Burbank. In two years of trials, severity and incidence were not statistically different among the two varieties. In two years of testing, weight loss was significantly higher in **Highland Russet** compared to Russet Burbank. On average, **Highland Russet** had a total (after 9 months storage) weight loss approximately 1.5-2 times higher than that observed in Russet Burbank.



FRY COLOR RESULTS 01/07
102 days after harvest



Glucose concentrations for **Highland Russet** during two years of storage research ranged from 0.07 to 0.10% (fresh wt basis) at both 45°F and 48°F from about 30 days after harvest throughout nine months of storage. USDA fry color scores from non-stressed tubers also remained acceptable (≤ 2) during nine months of storage. At 45°F glucose peaked at about 180-190 days after harvest, but at 48°F, glucose peaked at about 80-110 days in storage and then gradually decreased with time. Research indicates that in growing seasons with normal temperatures, a storage temperature of 45°F is appropriate for processing. However, in years with significant periods of high temperature stress, a higher storage temperature 48°F may be necessary to maintain optimum processing quality.

Weaknesses:

Light russet colored skin and susceptibility to black spot bruise.

Other Notes: **Highland Russet** has exhibited resistance to metribuzen when applied at labeled rates.

The information contained within this flyer was supplied by researchers of the Northwest Potato Variety Development Program and their collaborators.