

# CLEARWATER RUSSET

## AGRONOMY NOTES

### Clearwater Russet – (AOA95154-1)

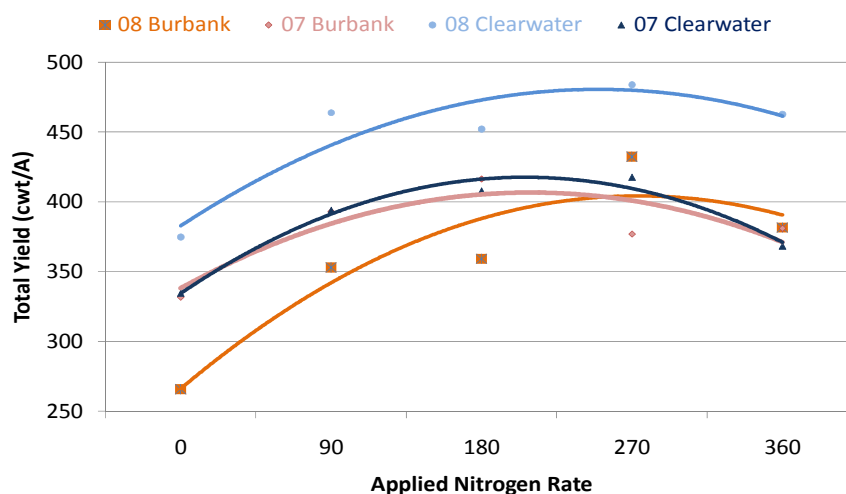
Clearwater Russet is a mid-late maturing variety with oblong medium heavy russeted tubers. Clearwater produces a high percentage of U.S. No. 1 tubers. Tubers of Clearwater Russet exhibit excellent fry color out of storage and their attractiveness make them suitable for both processing and fresh market usage. It has high specific gravity and is resistant to sugar ends. Clearwater has a low tuber set, with optimal size profile. External and internal defects are minimal for Clearwater even in stressed conditions.

### Fertilization

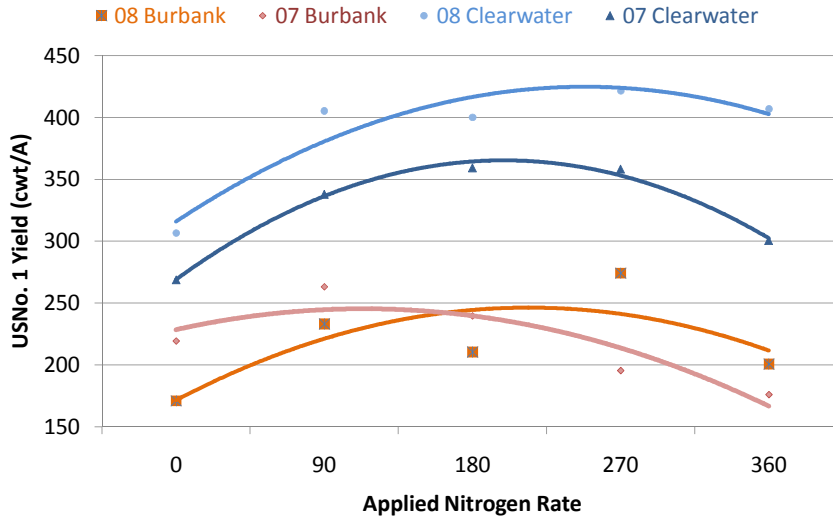
The following graphs present N response data from 2007 and 2008 for Clearwater Russet in comparison with Russet Burbank grown on a Declo sandy loam soil at the University of Idaho Aberdeen Research and Extension Center. Trials were grown following grain in the rotation. Row spacing was 36" and in-row spacing was 10.6". Crops were irrigated to maintain available soil moisture above 65%. University of Idaho recommendations were followed for herbicide, pesticide, and fungicide applications.

Nitrogen response studies were conducted using five application rates (0, 90, 180, 270, 360 lb N/acre) with half of total N applied pre-plant with the remainder divided into three equal applications at 2 week intervals starting at tuber initiation. Pre-plant available soil nitrate concentrations were 20 lb N/acre in 2007 and 30 lb N/acre in 2008.

2007-2008 Total Yield Response to N Rate of  
Clearwater Russet vs. R Burbank



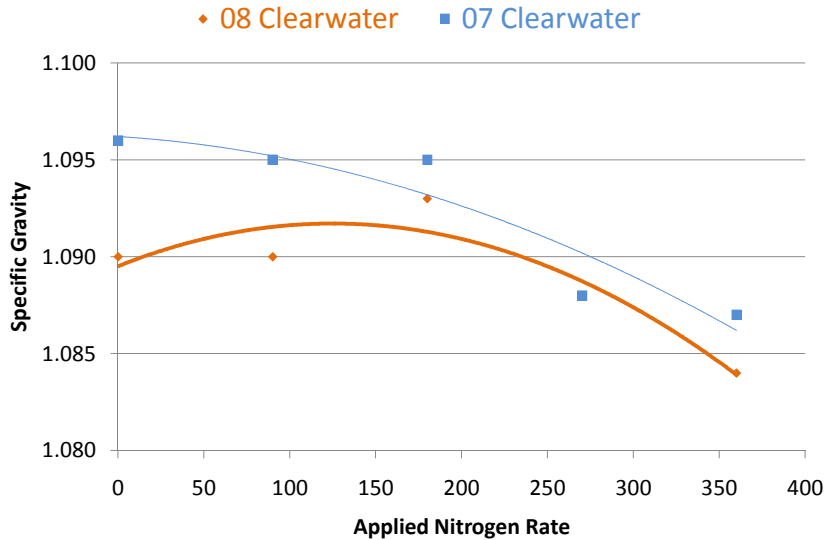
## 2007-2008 USNo.1 Yield Response to N Rate for Clearwater Russet vs. R Burbank



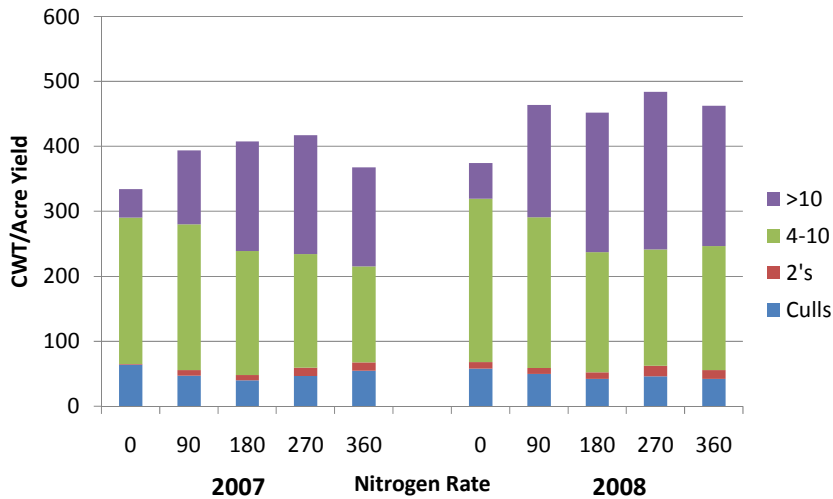
Total and USNo.1 Yield response to Nitrogen application indicate N fertilizer needs for Clearwater Russet were similar to Russet Burbank. Excessive nitrogen can lower yield and quality and prolong maturation. Higher nitrogen levels can lower specific gravity.

Clearwater Russet has moderately high Specific Gravity levels. Response to N Rate indicates a decline in gravity with higher nitrogen levels.

## 2007-2008 Specific Gravity Response to N Rate



### 2007-2008 Size Distribution Clearwater Russet

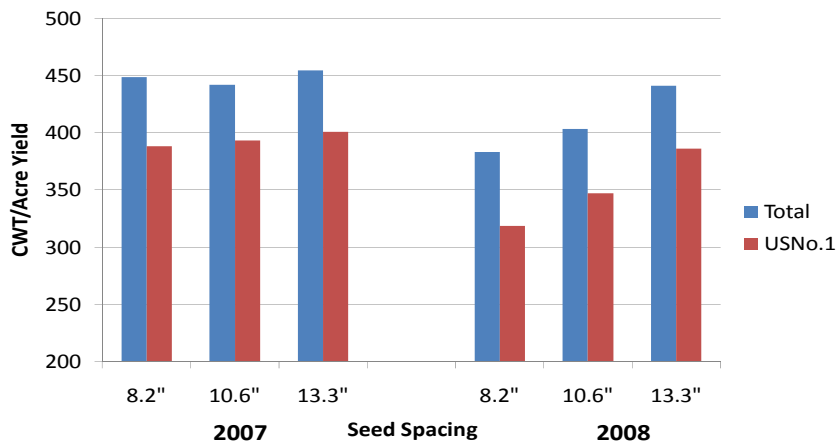


Increasing N significantly increases the proportions of large (>10 oz) tubers.

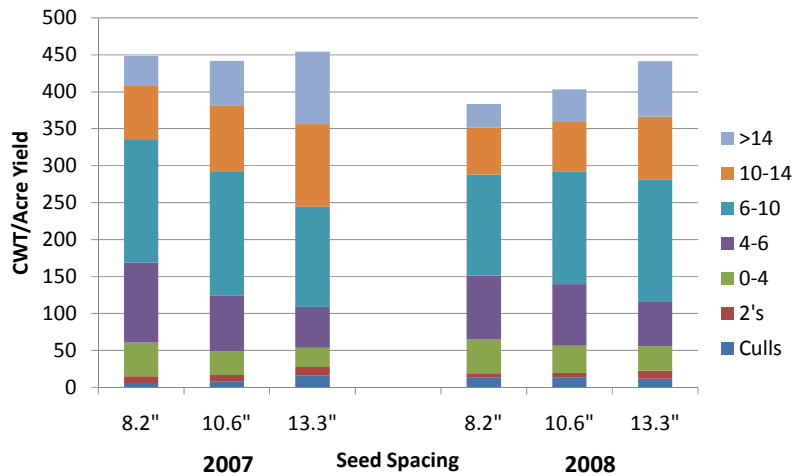
### Clearwater Russet - Spacing

The following graphs combine 2007 and 2008 years of data for Clearwater Russet grown at the University of Idaho Aberdeen Research and Extension Center. Row spacing was 36" and in-row spacing was 8.2", 10.6", 13.3". Yield increased with increased spacing up to 13.3" in 2008 but spacing had little effect on yield in 2007. Wider spacing also increased the proportions of large tubers.

### 2007-2008 Total & USNo.1 Yield Clearwater Russet – Seed Spacing



## 2007-2008 Size Distribution Clearwater Russet – Seed Spacing

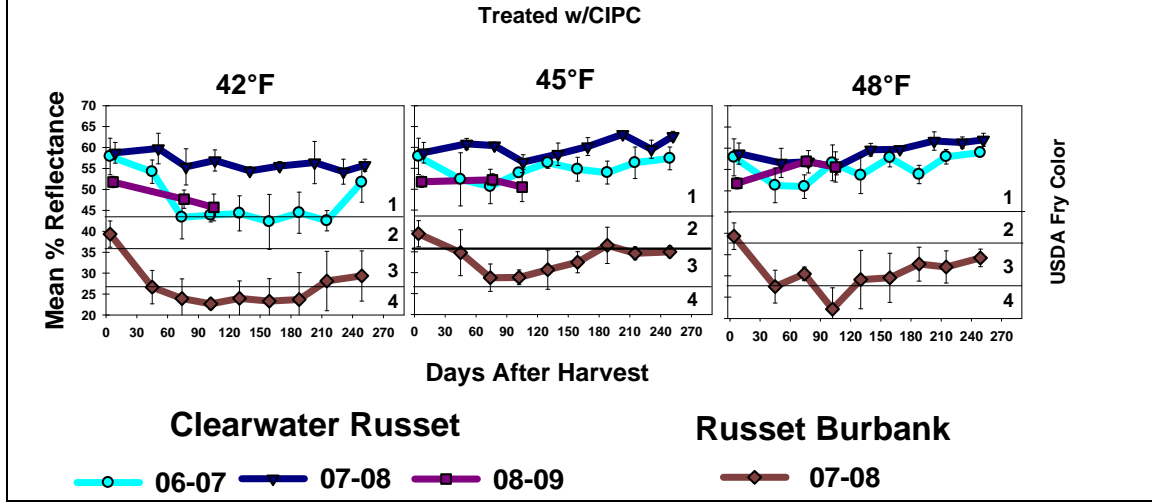


Total and U.S.No.1 Yield of Clearwater Russet is optimized at the 10-12" in-row spacing.

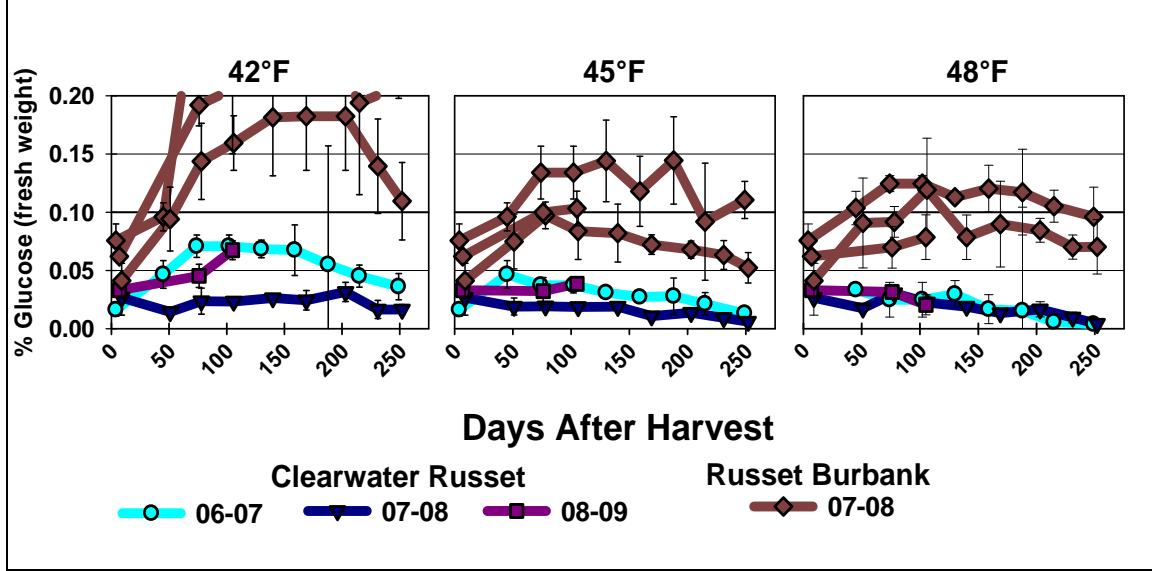
### Clearwater Russet - Storage

The dormancy of Clearwater Russet is relatively short, about 60 days shorter than Russet Burbank (RB). At 48°F, Clearwater Russet has a dormancy of 85 days, 90 days at 45°F and 110 days at 42°F. Clearwater Russet has a high Fusarium dry rot potential. In two years of disease testing, means were 30% decay (severity) and 73% incidence compared to 11% decay and 48% incidence for RB. Weight loss was higher in Clearwater Russet than RB at 42°F (9.2% and 5.6%). At 45 and 48F, there were no significant differences between the cultivars in the two year means and values ranged from 5 to 6% for the total weight loss. In the first year of the study weight loss was significantly higher in Clearwater Russet than RB, but in the second year few differences were measured. Percent glucose in storage was very low, <0.05% fresh weight (fwt) at 42, and <0.03% fwt at 45 and 48°F. Percent sucrose was similar in AOA95154-1 to RB, values ranged from a high of 0.15% to a low of 0.07% fwt. Stem end fry color remained at ≤ USDA 1 throughout the 9-month storage period at the three temperatures in both storage seasons. Mottling, a dark, uneven coloration which can occur in fried products, scored at a mild level at 42°F, and mild to none at 45 and 48°F.

**Mean percent reflectance (stem end) and USDA fry color in Clearwater Russet (A9305) at three storage temperatures and three years compared with Russet Burbank.**



**Percent glucose (fresh weight) in Clearwater Russet potatoes in 2 1/2 storage seasons at storage at three temperatures compared to Russet Burbank (2006-09).**



Revised January 15, 2009.