

# WESTERN RUSSET

## AGRONOMY NOTES

### Western Russet – (A7961-1)

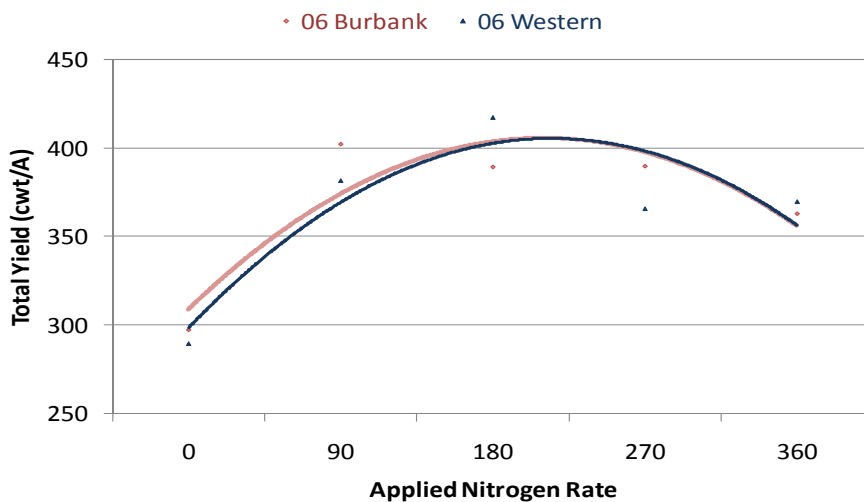
Western Russet is a dual purpose russet variety with qualities for fresh and processing markets. Western Russet is a mid to late season variety that produces a high percentage of U.S. No. 1 tubers. This variety has moderately high specific gravity and is resistant to most internal and external defects, including sugar ends. Processing market use for Western Russet includes frying and dehydration.

### Fertilization

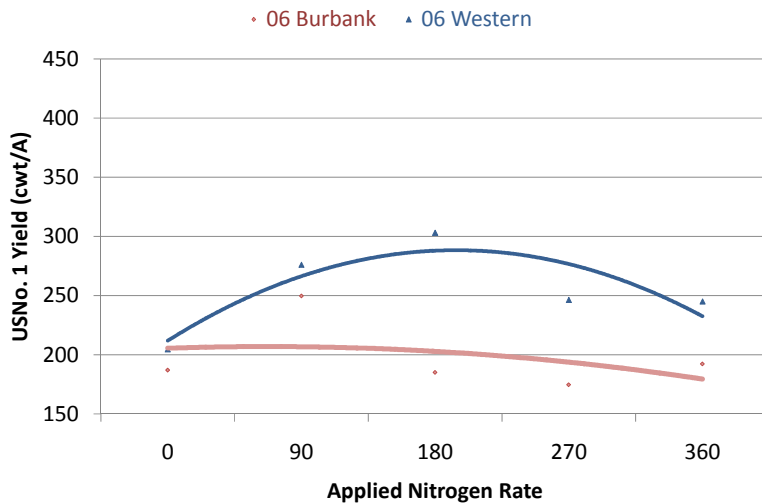
The following graphs present N response data from 2005 and 2006 for Western Russet and Russet Burbank grown on a Declo sandy loam soil at the University of Idaho Aberdeen Research and Extension Center. Trials were grown following grain in the rotation. Row spacing was 36" and in-row spacing was 10.6". 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 16 lb N in 2005 and 18 lb N in 2006.

2006 Total Yield Response to N Rate of Western Russet vs. R Burbank

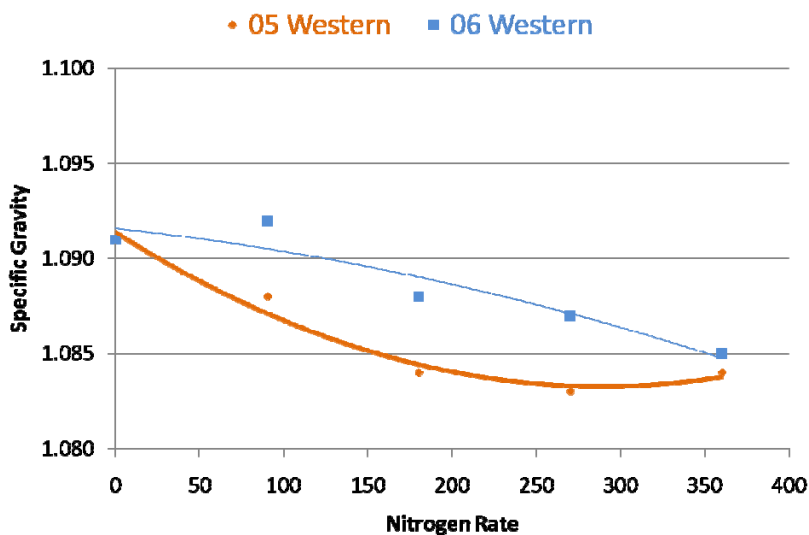


## 2006 USNo.1 Yield Response to N Rate for Western Russet vs. R Burbank

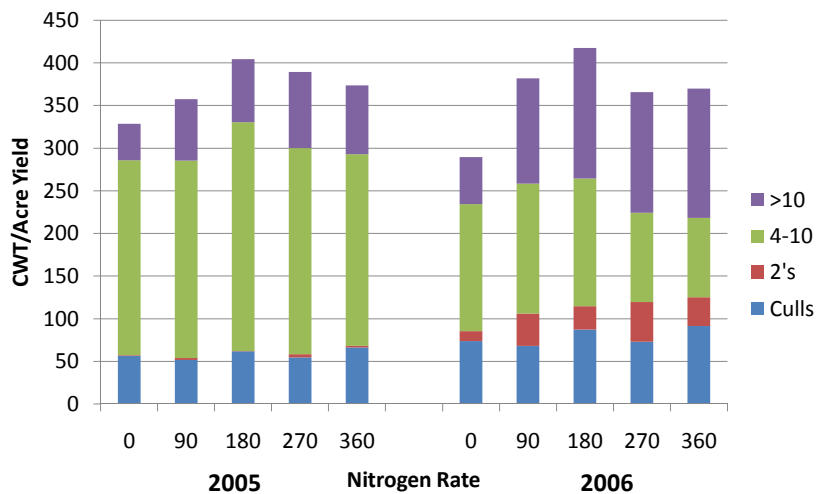


Total and US No.1 Yield responses to N application indicate that Western Russet requires about 90% of the N required for Russet Burbank. Split N applications should be used with up to 50% of the seasonal N requirement applied pre-plant and the remainder applied before Aug 5. A higher proportion of the seasonal N requirement should be applied early in the growing season for Western Russet compared to Russet Burbank. However, excessive N can lower yield and quality and delay maturation. High N levels can also lower specific gravity.

## 2005-2006 Specific Gravity Response to N Rate



## 2005-2006 Size Distribution - Western Russet



Excessive N fertilization reduced total yield and increased the production of large tubers (>10 oz) while reducing the proportion of 4-10 oz tubers.

### Spacing

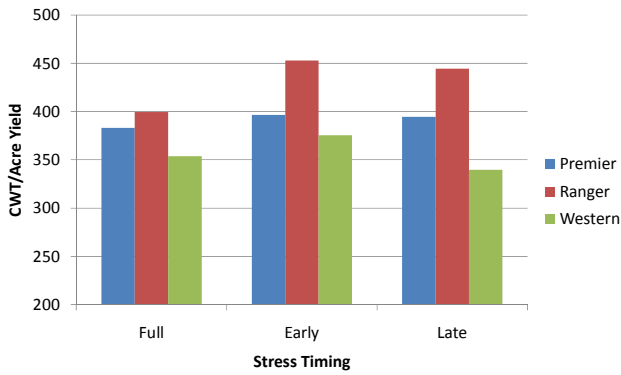
Total and U.S.No.1 Yield of Western Russet is optimized at the 10-12" in-row spacing. Narrower spacing should be used if excessive size is a problem.

### Irrigation

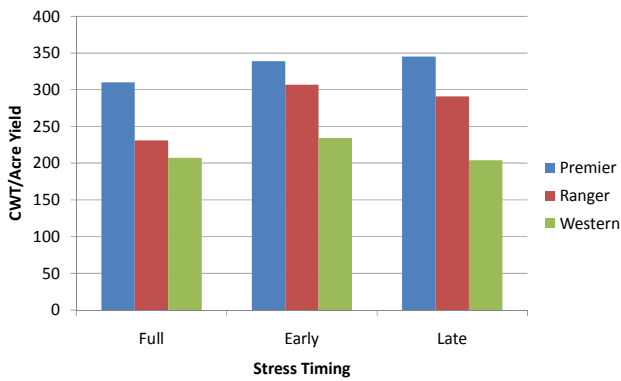
An irrigation stress study was conducted in 2008 to determine the effects of early and late season drought stress on the yield and quality of Premier Russet, Ranger Russet and Western Russet. The study was conducted on a sandy loam soil at the University of Idaho Aberdeen Research and Extension Center. Row spacing was 36" and in-row spacing was 12". University of Idaho recommendations were followed for fertilizer, herbicide, pesticide, and fungicide applications. Trials were irrigated according to 100% ET for the full season treatment; while the early stress treatment received 25% less irrigation during the first 3 weeks of July (during early tuber bulking), and the late stress treatment received 25% less irrigation during last 3 weeks of August (during late tuber bulking).

The following graphs include 2008 yield data for Premier Russet, Ranger Russet and Western Russet. Both Premier Russet and Ranger Russet had higher total and U.S. No. 1 yields with either early or late season drought stress. By comparison, Western Russet had higher yields with early stress but was relatively unaffected by late stress. Early and late stress increased specific gravity for Premier Russet but stress decreased gravities for Western Russet and had a mixed effect on Ranger Russet.

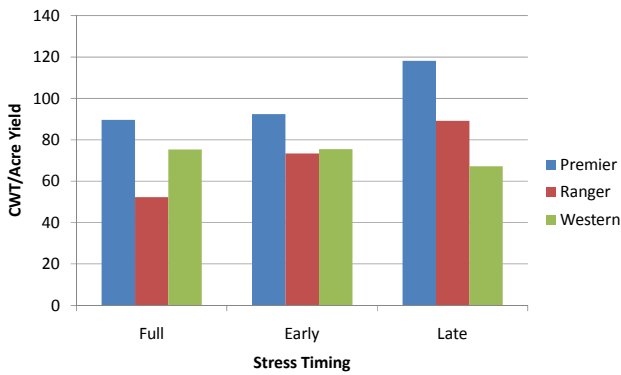
2008 Irrigation Stress Effects on Total Yield



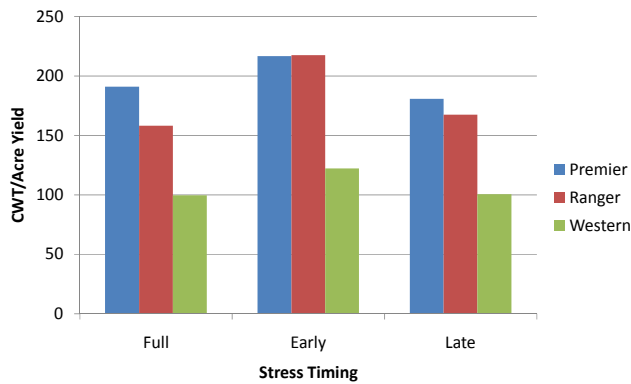
2008 Irrigation Stress Effects on USNo.1 Yield



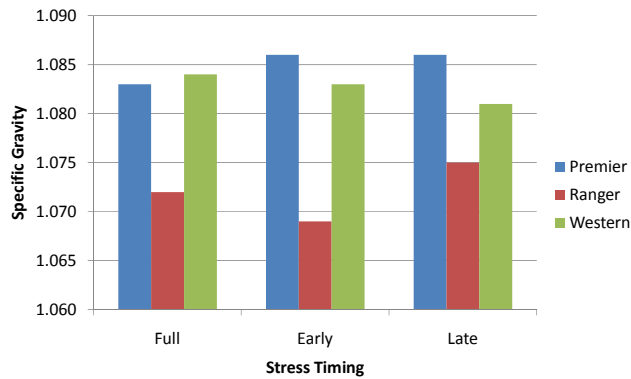
2008 Irrigation Stress Effects on USNo.1 Yield 6-10 Ounce



2008 Irrigation Stress Effects on  
USNo.1 Yield >10 Ounce



2008 Irrigation Stress Effects on  
Specific Gravity



## Harvest

Western Russet is susceptible to early blight. Minimization of early blight infection of tubers at harvest is important if storage is scheduled. This can be accomplished by following proper maturation procedures, avoiding harvest during wet weather conditions, and minimizing bruise damage during handling.

Some measures may be required to minimize the development of blackspot bruise in Western Russet. Over-maturation of tubers should be avoided by killing of vines before natural death and timing of harvest to coincide with the minimum period needed to set skin. Soil moisture should be maintained above 60% ASM to prevent tuber dehydration.

## Storage

University of Idaho Educational Publications document entitled, "Storage Management of Western Russet Potatoes" CIS no 1151 contains detailed information on storage, it is available online at <http://www.kimberly.uidaho.edu/potatoes/CIS1151.pdf>

### **Storage Recommendations for Western Russet Potatoes**

The following recommendations are based on data collected over a two-year period at the University of Idaho Kimberly R&E Center on Western Russet potatoes grown in Southern Idaho.

**Curing Conditions:** Cure at 55°F and 95% relative humidity for 14 days

**Storage Conditions:** Maintain 95% relative humidity throughout storage. Weight loss in Western Russet is slightly higher than Russet Burbank.

**Frozen Processing:** 48°F holding temperature

**Fresh Market:** 45°F holding temperature

**Dehydration Processing:** 42-45°F (depending on intended product)

### **Sprout Inhibition: Apply before dormancy break but after curing**

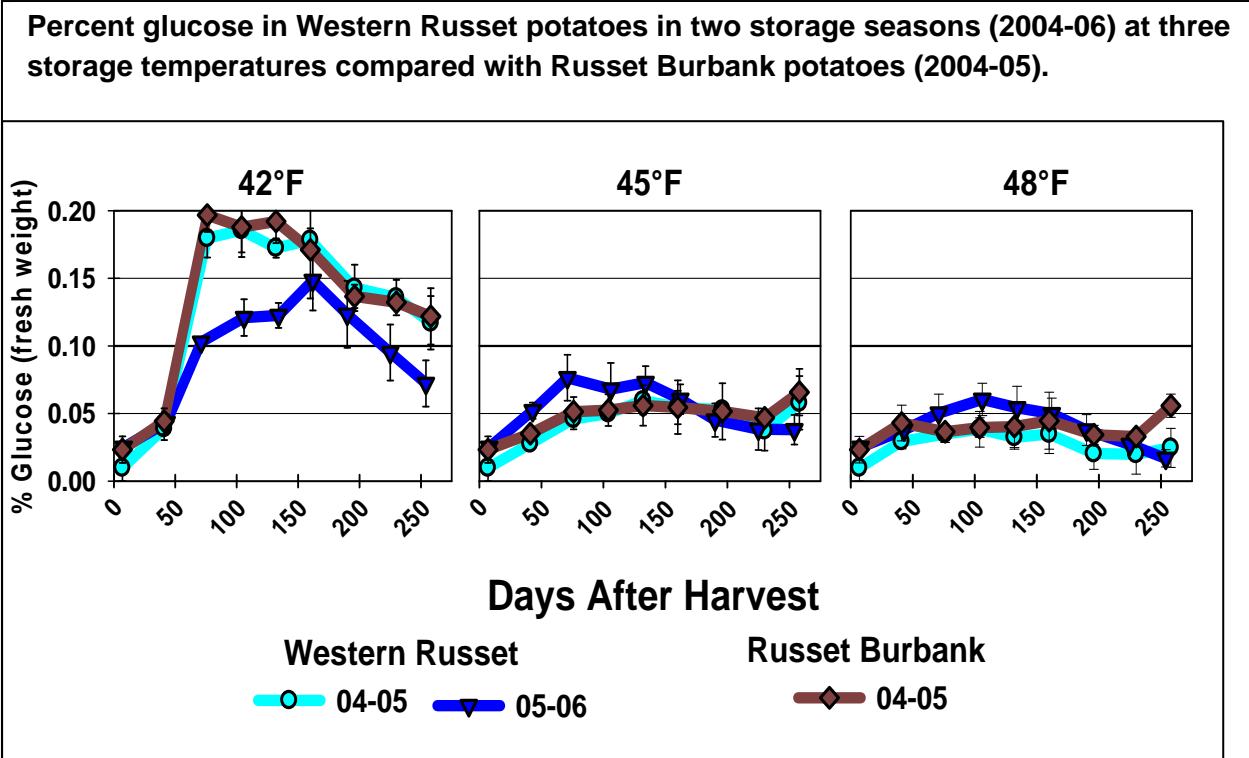
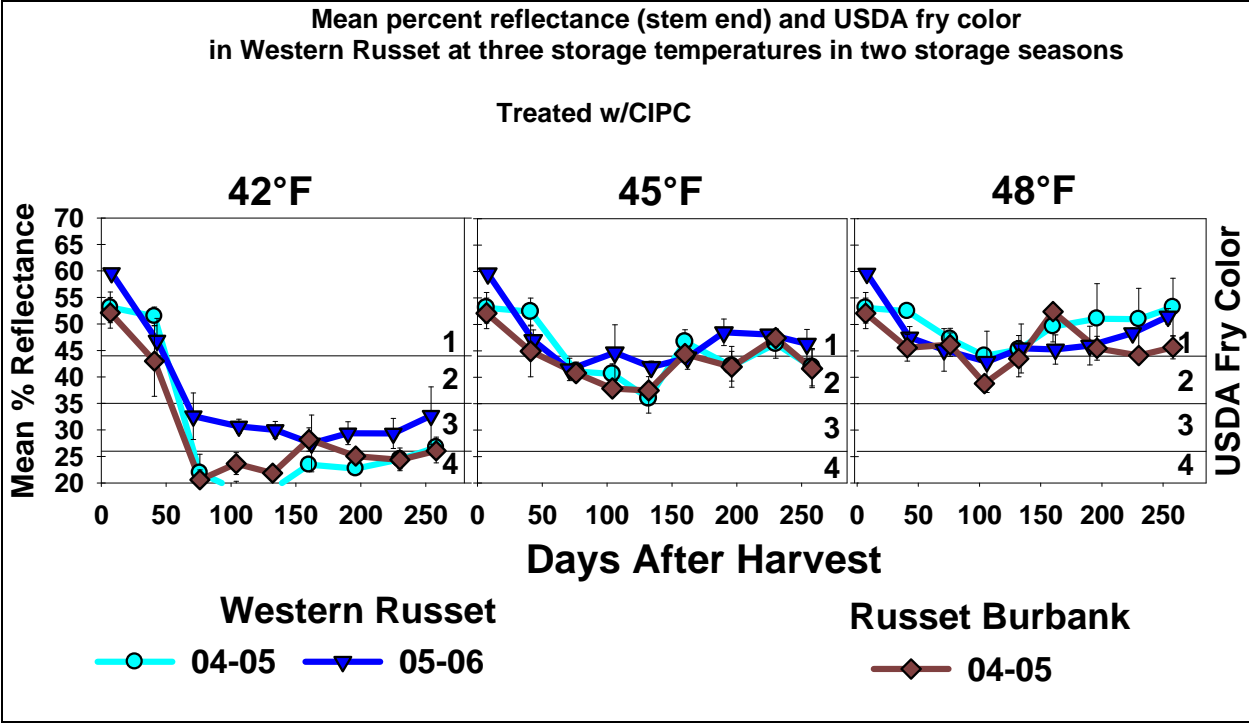
- 42°F - apply CIPC between 14 and 130 days after harvest
- 45°F - apply CIPC between 14 and 100 days after harvest
- 48°F - apply CIPC between 14 and 80 days after harvest

**Due to the fact that this is a shorter dormancy potato, CIPC residues should be monitored to ensure long season sprout inhibition**

**Duration of Storage:** High processing quality persists throughout 250 days after harvest at 48 °F.

**Fry Mottling:** Mottling occurs in Western Russet at lower storage temperatures, to minimize mottling, store at 48°F.

**Fusarium Dry Rot:** Moderate susceptibility similar to Russet Burbank



Revised January 15, 2009