

CLASSIC RUSSET

AGRONOMY NOTES

Classic Russet - (A95109-1)

Classic Russet is an early to mid-season russet variety that produces high yields and a high percentage of U.S. No. 1 tubers. Although it is not quite as early as Russet Norkotah, it has the ability to bulk more rapidly than Norkotah, producing large tubers relatively early in the growing season. It has attractive tubers and excellent culinary quality which makes it very suitable for the fresh-pack industry and it can also be used as an early processor.

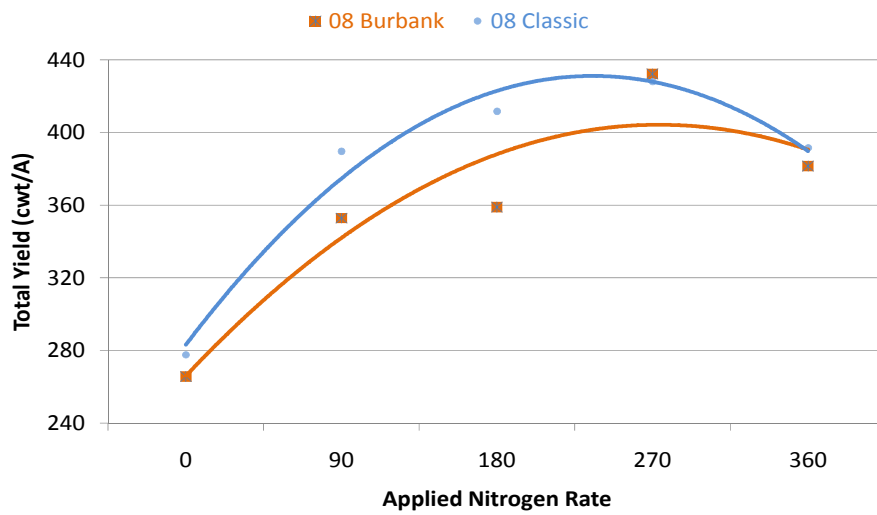
Fertilization

The following graphs present N response data from 2008 for Classic 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.

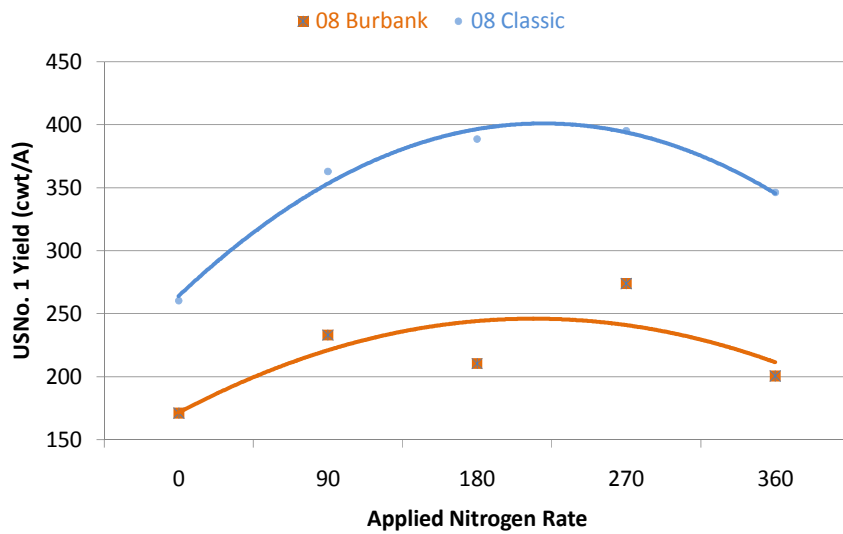
Nitrogen response studies were conducted using five application rates (0, 90, 180, 270, 360 lb N/acre) with half of total N applied pre-plant with the remainder divided into three equal applications at 2 week intervals starting at tuber initiation. Pre-plant available soil nitrate concentrations were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

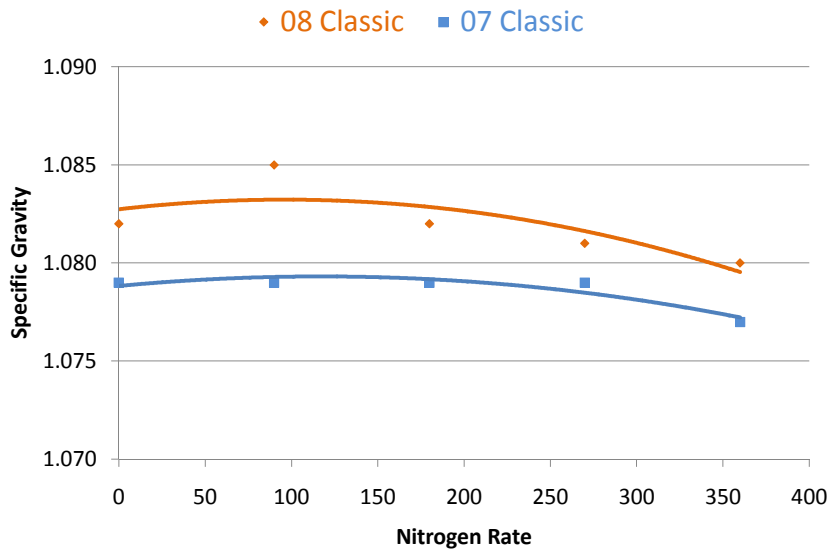
Total and US No.1 Yield responses to N application indicate that Classic Russet requires about 90% of the N required for Russet Burbank, which will be about 180-220 lb N/acre in southeast Idaho. Split N applications should be used with up to 50% of the seasonal N requirement applied pre-plant and the remainder applied via sprinkler irrigation before Aug 5. Petiole nitrates should be about 20,000 at the end of tuber initiation and decrease to 12,000 to 15,000 ppm at mid-bulking and 6,000 to 8,000 ppm at late bulking. Excessive late season N can lower yield and quality and delay skin maturation, increasing tuber susceptibility to harvest damage and disease. High N levels can also lower specific gravity.

2008 Total Yield Response to N Rate of Classic Russet vs. R Burbank

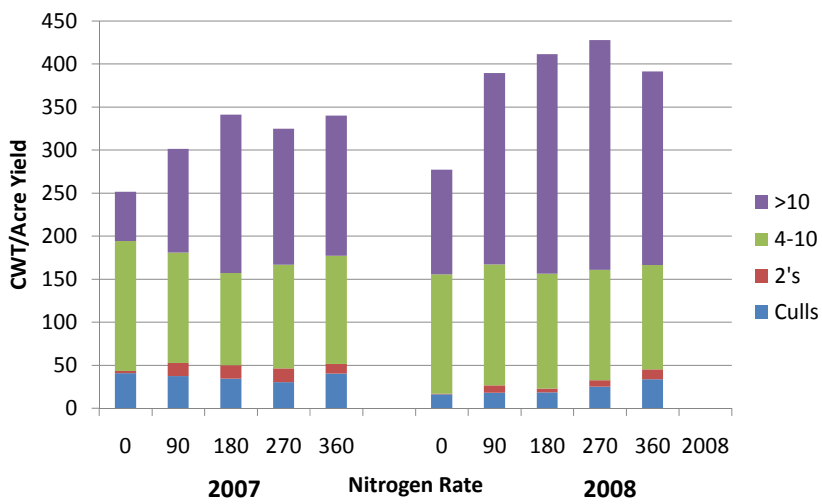


2008 USNo.1 Yield Response to N Rate for Classic Russet vs. R Burbank





2007-2008 Size Distribution - Classic Russet



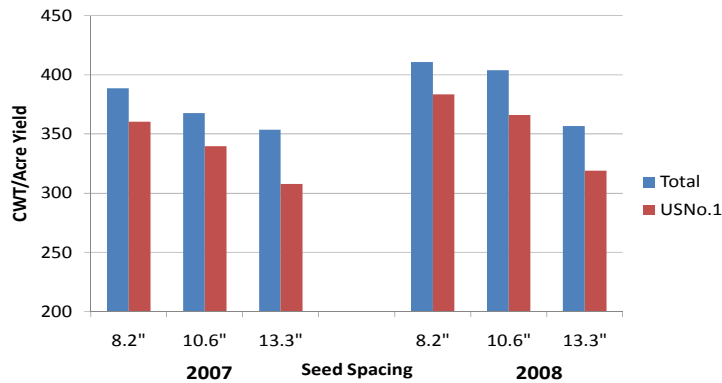
Classic Russet produces large tubers, which can become a greater problem with excess N. Effects of N rate on tuber size distribution shows that in addition to reduced yields, too much N can result in higher percentages of No. 2's and culls.

Spacing

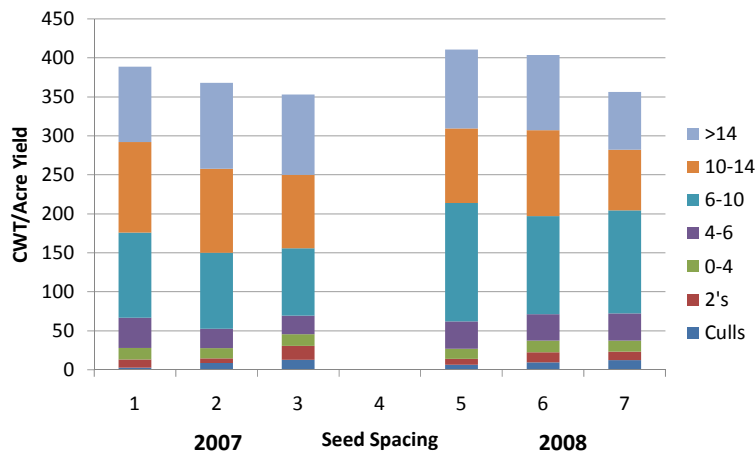
The following graphs present combined 2007 and 2008 data for the effects of seed piece spacing on Classic Russet yield and tuber size distribution. Trials were grown on a sandy silt loam soil at the University of Idaho Aberdeen Research and Extension Center. Row spacing was 36" and seed piece spacing was 8.2, 10.6, or 13.3 inches. Trials were irrigated for optimum yield and University of Idaho recommendations were followed for fertilizer, herbicide, pesticide, and fungicide applications.

The highest yields were consistently obtained with the 8 inch seed piece spacing and yields progressively decreased as spacing increased. Classic Russet typically produces about 1 tuber less per hill than Russet Burbank and as a result, should be planted with an 8-9 inch seed piece spacing to avoid producing extremely large tubers, particularly in areas with long growing seasons. Wider seed piece spacing also tended to decrease yields of 6-10 oz tubers and increase the proportion of culls and No. 2's.

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



2007-2008 Size Distribution
Classic Russet – Seed Spacing

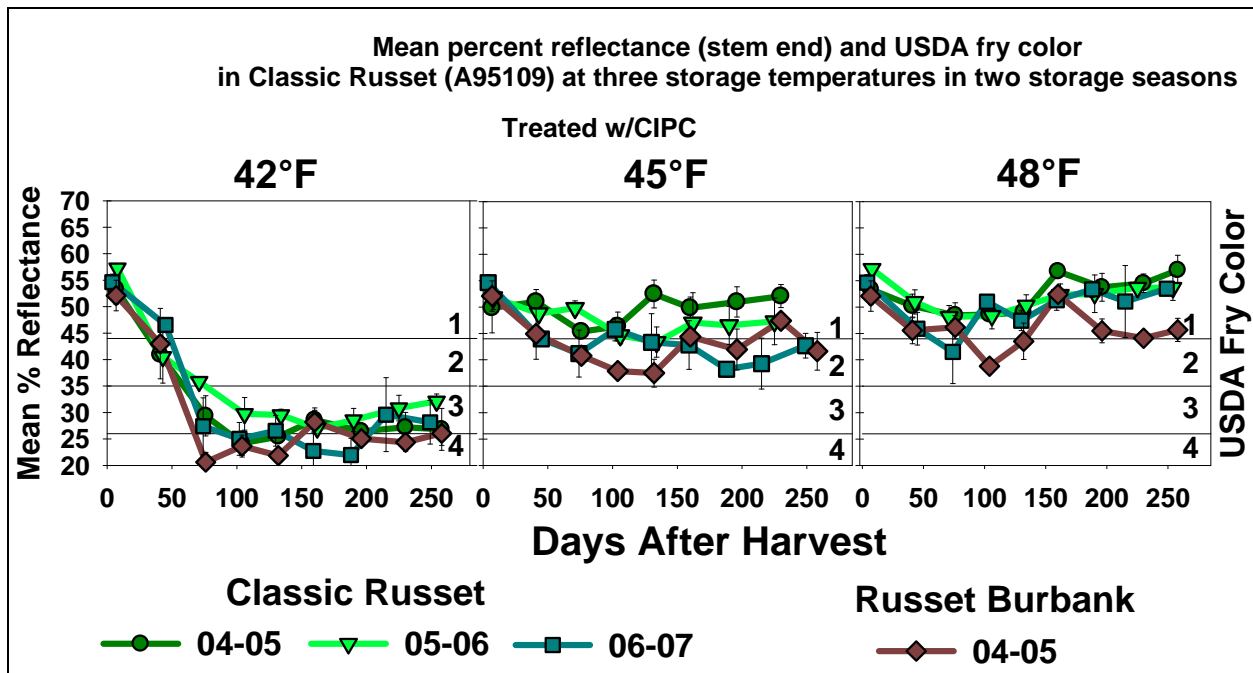


Harvest

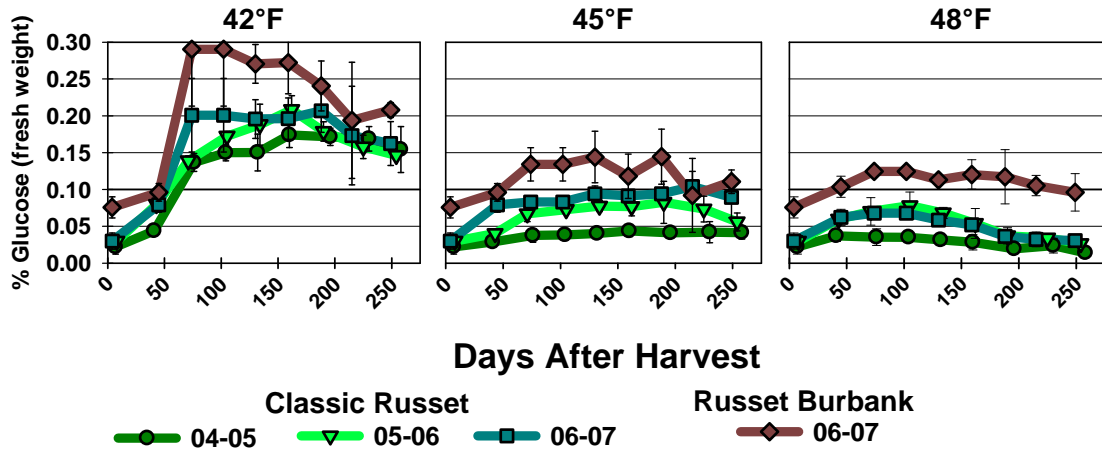
Classic Russet is susceptible to shatter bruise and therefore should be handled as gently as possible to minimize bruising. Irrigation rates should be gradually reduced during the last couple of weeks prior to vine kill to allow tuber hydration to decrease to an intermediate level during skin set. Standard practices for minimizing tuber impact damage should be followed to reduce the potential for shatter bruise.

Storage

Classic Russet has a shorter dormancy length than Russet Burbank (RB) (20-45 days shorter depending on temperature and year). On average, Classic Russet has a dormancy length of 155 days at 42°F, 130 days at 45°F, and 100 days at 48°F. Fusarium dry rot results indicate that this cultivar is similar in susceptibility to RB and thus classified as moderately resistant. Weight loss during extended storage was significantly higher than RB at all temperatures. However the differences between RB and Classic Russet were relatively small; on average Classic Russet was approximately 2 percentage points higher in total weight loss than RB. Glucose concentrations at 42°F in Classic Russet increase steadily in storage and reach a maximum at ~150 days after harvest (DAH) of 0.15-0.20% fresh weight (FW), depending on the year. At both 45°F and 48°F, glucose increases at a much lower rate than at 42°F. Maximum concentrations were below 0.10% and occurred approximately 130 DAH in all years. Overall, the glucose and sucrose profiles over the three storage seasons were similar to RB. On average, mean stem end fry color was USDA 3 and 4 at 42°F, USDA 2 at 45°F and USDA 1 or below at 48°F. Mottling, which is a dark, thread-like coloration within the fries, was observed at a moderate level at 42°F, mild at 45°F and mild to none at 48°F.



Percent glucose in Classic Russet (A95109-1) treated with CIPC and stored at three temperatures in three storage seasons compared to Russet Burbank.



Revised January 15, 2009