

ALPINE RUSSET

AGRONOMY NOTES

Alpine Russet – (A9305-10)

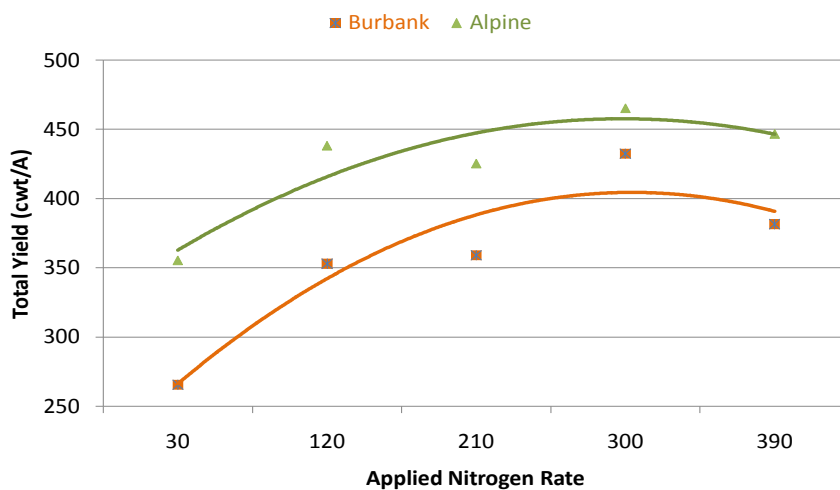
Alpine Russet is a medium to late maturing russet variety with oblong light russeted tubers. Alpine is a high yielding cultivar with excellent processing potential out of long term storage. Alpine is notable for long dormancy similar to Russet Burbank. It has moderately high specific gravity and resistance to sugar ends and most internal and external defects. Alpine has a low tuber set, with medium to large tuber size.

Fertilization

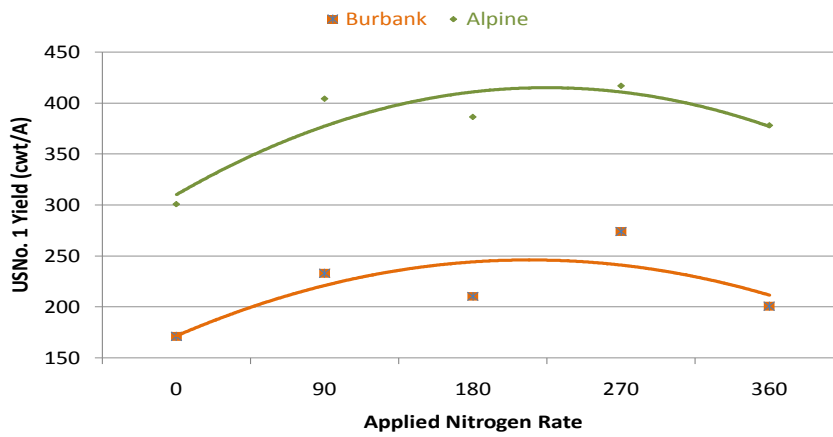
The following graphs include 2008 N response data for Alpine Russet and Russet Burbank grown on a Declo sandy loam soil at the University of Idaho Aberdeen Research and Extension Center. Trials were grown following grain in the rotation. Row spacing was 36" and in-row spacing was 10.6". Crops were irrigated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

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

2008 Total Yield Response to N Rate



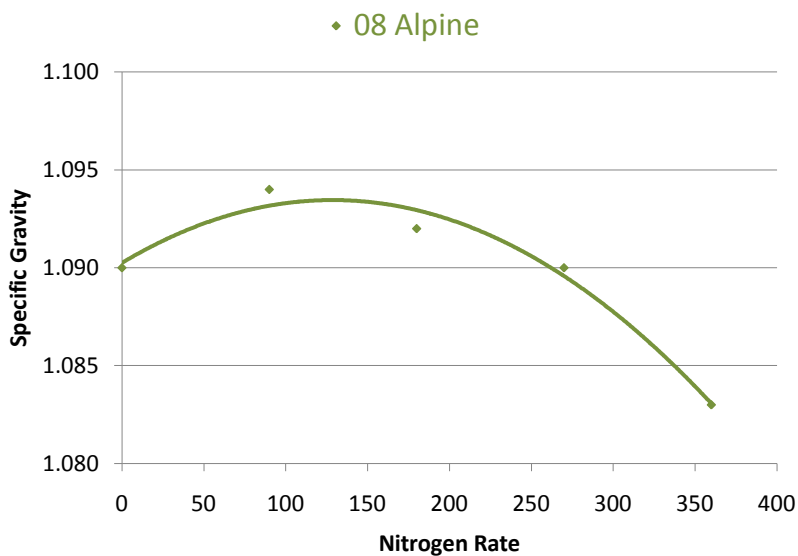
2008 USNo.1 Yield Response to N Rate



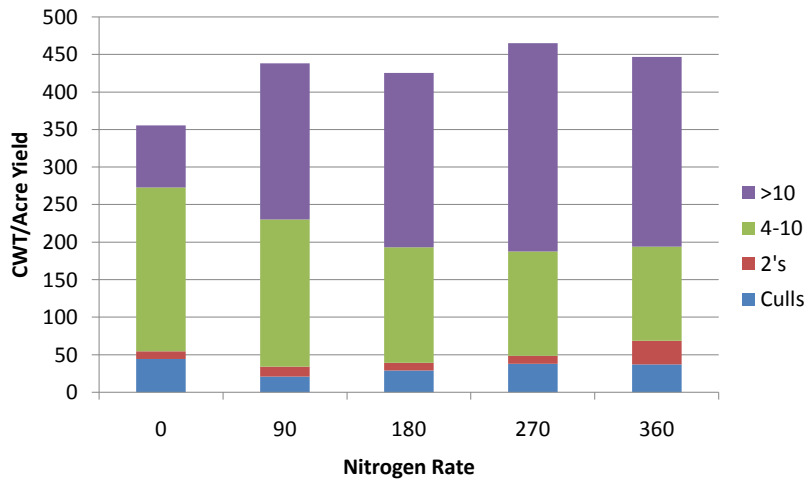
Total and US No.1 yield responses to Nitrogen application in 2008 shows that Alpine Russet's N requirement is similar to that for Russet Burbank, which is about 220 to 240 lb N/acre in southeast Idaho. About 50% of the seasonal N requirement should be applied pre-plant with the remainder applied via sprinkler irrigation during tuber bulking. Nitrogen applications should be completed by Aug. 10.

Alpine Russet has moderately high specific gravity, but gravities decrease substantially at N rates that exceed the amount needed for maximum yield.

2008 Specific Gravity Response to N Rate



2008 Size Distribution Alpine Russet



Nitrogen rate had a pronounced effect on tuber size distribution for Alpine Russet. Increasing N rates decreased 4-10 oz. yields and increased the yield of > 10 oz. tubers. High N rates also increased the proportion of culls and No. 2's.

Spacing

Tuber set averages about 6.7 tubers/hill for Alpine Russet compared to 8.8 tubers/hill for Russet Burbank. Consequently, it has a tendency to produce relatively large tubers and should be managed accordingly.

Harvest

Alpine Russet has reasonably good resistance to shatter and blackspot bruise, but still needs to be managed properly to produce a high percentage of bruise free potatoes.

Storage

Alpine Russet has a dormancy length nearly equivalent to Russet Burbank. On average, Alpine Russet has a dormancy length of 185 days at 42°F, 165 days at 45°F, and 140 days at 48°F. Three year averages indicate that Alpine Russet has a slightly higher susceptibility to Fusarium dry rot than Russet Burbank. Mean dry rot decay (severity) in Alpine Russet was 19% compared to 10% for Russet Burbank. Percent incidence (rot >0%) was slightly higher in Alpine Russet, at 67% versus 55% for Russet Burbank. Total percent weight loss in Alpine Russet was not significantly different than Russet Burbank at 42 or 45°F, however at 48 °F, it was significantly higher. On average total weight loss in Alpine Russet was 5.3, 4.6, and 8.0% compared to Russet Burbank weight loss of 4.4, 3.6, and 5.0% at 42, 45 and 48°F respectively.. Glucose concentrations were lower than Russet Burbank across years, temperatures and dates in storage. Peak glucose concentration in Alpine Russet occurred at ~190 days after harvest in 2006-07 at 0.12% (fresh weight). Typically glucose concentrations remained below 0.10 % at 42°F in all three years

and near or below 0.05% in the 45 and 48°F storages. Sucrose concentrations were higher in Alpine Russet at all temperatures and years compared to Russet Burbank. Fry color was less than or equal to a USDA 1 when stored at both 45 and 48 °F. At 42°F, fry color was USDA 2 or less, except in 06-07, between 70 and 180 days after harvest when fry color reached a USDA 3. 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.

