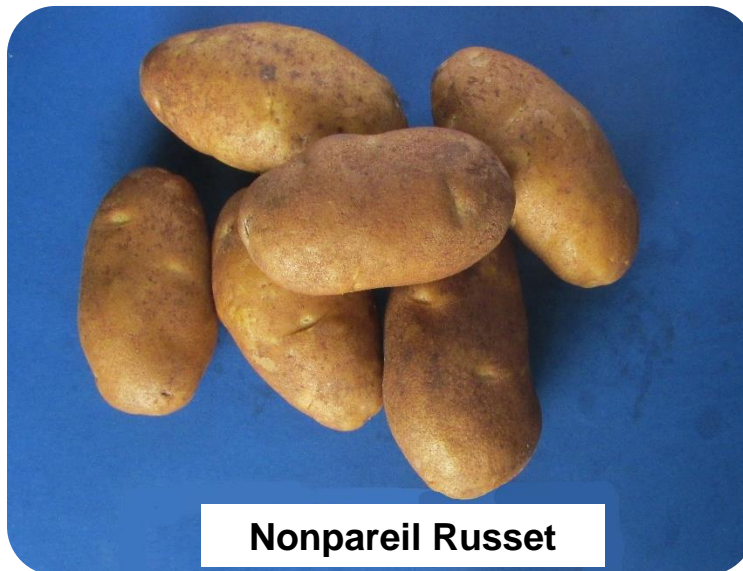


# NONPAREIL RUSSET (C098067-7RU)

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**Parentage : Silverton Russet X TC1675-1**

**Breeder: David Holm, Colorado State University**

- Dual purpose, fresh and processing
- Long tuber with medium-heavy russet skin and white flesh
- Medium maturity with strong plant vigor
- Nice smooth tuber appearance
- Eyes are shallow, numerous and well distributed
- Medium vine size, semi-erect plant with white flowers
- Tubers are resistant to hollow heart, blackspot bruise, second growth, growth crack and shatter bruise
- Good drought resistance
- Low acrylamide forming potential (Table 2)

## **2-Year Average Production Data from Dryland Variety Trials (2016 & 2017)**

- ❖ Trialled at 180lbs N/ac and a 12" spacing
- Average total yield 421.3 cwt/acre, 2.3% less than Russet Burbank, 26.6% greater than Goldrush
- Average marketable yield 330.2 cwt/acre, 12.4% greater than Russet Burbank, 30.3% greater than Goldrush
- Tuber size profile similar to Russet Burbank and slightly smaller than Goldrush with 16.8% of the tubers in the size category  $> 2 \frac{3}{4}$  vs 30.6% for Goldrush
- Slightly higher tuber set (10) compared to the industry standards; Russet Burbank (9) and Goldrush (8)

- Less defects compared to Russet Burbank and Goldrush
- Specific gravity was between Goldrush and Russet Burbank (1.0835)
- Tuber development is slightly higher in the hill than Russet Burbank - proper hill conformation and monitoring of tuber size may prevent the occasional green apical end
- Foliage and tubers displayed a greater tolerance to frost compared to other cultivars
- Average fry color reading through out the storage season at 45°F (7.2°C) was lower than Russet Burbank, 78 vs 85
- Tubers can be harvested between 110 and 120 days after planting
- Vines should be top-killed 18 to 21 days prior to harvest



### **Data Recommendations After 2 Years in the Best Management Trial (2016 & 2017)**

- Three levels of nitrogen 140, 160 and 180 lbs/ac and three spacings 8, 10, and 12" were included in this trial

#### **Recommendation for seed:**

- 12" at 140 lbs of N/ac

#### **Recommendation for table/processing**

- 12" at 180 lbs of N/ac

## FRENCH FRY COLOUR PERFORMANCE



**Nonpareil Russet** – April 2019 @ 45°F  
**Agtron: 82**  
**USDA: #1 (3), #2 (6), #3 (1)**



**Russet Burbank** – April 2019 @ 45°F  
**Agtron: 83**  
**USDA: #1 (4), #2 (5), #3 (1)**

### Seasonal Average French Fry Colour (Agtron readings)

Table 1: **Nonpareil Russet vs Russet Burbank @ 45°F**

Year	Variety	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	AVG
2016	<b>Nonpareil Russet</b>	88	84	80	78	79	81	80	83	81	83	<b>82</b>
2017	<b>Nonpareil Russet</b>		83	83	76	71	78	79	87	77	72	<b>78</b>
<b>AVG</b>		<b>88</b>	<b>84</b>	<b>82</b>	<b>77</b>	<b>75</b>	<b>80</b>	<b>80</b>	<b>85</b>	<b>79</b>	<b>78</b>	
2016	<b>Russet Burbank</b>	93	79	79	61	75	76	73	75	77	68	<b>76</b>
2017	<b>Russet Burbank</b>		86	94	79	85	86	89	84	81	88	<b>86</b>
<b>AVG</b>		<b>93</b>	<b>83</b>	<b>87</b>	<b>70</b>	<b>80</b>	<b>81</b>	<b>81</b>	<b>80</b>	<b>79</b>	<b>78</b>	

### ACRYLAMIDE FORMATION POTENTIAL

From 2011 to 2013 a National Fry Processing Trial (Wang et al., 2016) was conducted on 140 plus lines (genotypes) using potato varieties low in acrylamide precursors and new potato breeding lines with reduced acrylamide-forming potential, one of these varieties was Nonpareil Russet (CO98067-7RU) along with the standards Russet Burbank and Ranger Russet. Of the main objectives two were; 1) to evaluate the agronomic and biochemical properties of advanced breeding lines at harvest and during 8 months of storage and 2) to determine the consistency of these traits across storage regimes. Of all the genotypes there were 34 and 29 (including Nonpareil Russet) with significantly less acrylamide formation in French Fries after 4, & 8 months in storage, respectively, than the standard Ranger Russet.

Table 2:

Acrylamide – forming potential of elite US potato germplasm during storage from National Fry Processing trial 2011 to 2013 (Wang et al., 2016)			
Variety	Acrylamide ( $\mu\text{g Kg}^{-1}$ )		
	1 month	4 months	8 months
Russet Burbank (std)	1010.4	1160.6	1349.9
Ranger Russet (std)	723.4	870.0	1226.9
CO98067-7RU	861.2	738.9	838.3

Wang, Y., Bethke, P.C., Bussan, A.J., Glynn, M.T., Holm, D.G., Navarro, F.M., Novy, R.G., Palta, J.P., Pavek, M.J., Porter, G.A., Sathuvalli, V.R., Thompson, A.L., Voglewede, P.J., Whitworth, J.L., Parish, D.I. and Endelman, J.B. (2016), Acrylamide-Forming Potential and Agronomic Properties of Elite US Potato Germplasm from the National Fry Processing Trial. *Crop Science*, 56: 30-39. <https://doi.org/10.2135/cropsci2015.03.0173>

*\*\*Based on information provided by the breeder, trial data collection by NBDAAF and from commercial fields. Observations and results may vary slightly depending on location and crop season growing conditions\*\**