

2019 Potato Variety Trial Results

Takeaways

Though later varieties tended to outproduce early varieties, the majority of varieties investigated produced roughly two lbs per plant. Within this range, farmers can choose from a diversity of tuber sizes and colors and storage abilities. For short term storage, Jester and Red Pontiac stood out in production. For long term storage, Chieftain and Purple Abundance were generous yielders.

Varieties Tried

Code	Earliness	Variety Name	Description/Use	Avg. Yield per Plant (lbs)	Resistance	Source
AB	Early	All Blue	Purple skin/purple and white flesh/good steamed, sauteed, or mashed	1.1	scab, hollow heart, late blight	Irish Eyes
JE	Early	Jester	Purple skin with yellow eyes/purple and yellow flesh/good for salad	2.3*	scab, PVA	Grand Teton
PM	Early	Purple Majesty	Purple skin/purple flesh/good boiled, chipped, and fried	1.4		Grand Teton
WA	Early	Warba	Yellow skin with pink eyes/white flesh/good boiled, steamed, or fried	1.0	scab	Irish Eyes
CH	Mid	Chieftain	Red skin/white flesh/good mashed	2.0	scab and late blight	Grand Teton
CI	Mid	Ciklamen	Red skin/white flesh/good boiled and steamed	1.9	scab, black leg, and PVY	Grand Teton
EL	Mid	Elfe	Yellow skin/yellow flesh/good roasted, steamed, baked, and boiled	1.8	scab, blight, and black leg	Irish Eyes
HM	Mid	Harvest Moon	Purple skin/yellow flesh/good boiled, steamed, and roasted	1.2	scab	Maine Potato Lady
RP	Mid	Red Pontiac	Red skin/white flesh/good mashed and for general use	2.5		Maine Potato Lady
SP	Mid	Strawberry Paw	Red skin/white flesh/good boiled and mashed	1.6	scab, late blight	Maine Potato Lady
YG	Mid	Yukon Gem	Yellow skin/yellow flesh/good baked, boiled, and fried	1.4	late blight, dry rot	Maine Potato Lady
GB	Late	German Butterball	Yellow skin/yellow flesh/all purpose	2.3	scab, late blight	Maine Potato Lady
LI	Late	Lilly	Yellow skin/yellow flesh/good boiled and mashed	1.3	blight, rhizoctonia, black leg	Maine Potato Lady
PP	Late	Purple Peruvian	Purple skin/purple flesh fingerling/good boiled, roasted, and fried	2.7		Irish Eyes
PA	Late	Purple Abundance	Purple and white skin/white flesh/good roasted, fried, and boiled	4.5*		Chris Homanics

* Purple Abundance and Jester were grown only at 1 and 3 sites, respectively, compared to 7-9 sites for all other varieties.

Therefore, we have less confidence in comparing their average yield to the average yield of the other varieties.

Site description

Nine sites participated in the variety trials but not all potato varieties were grown at all sites. Potatoes were grown at three sites managed by OSU: Oak Creek Center for Urban Agriculture, Peoria Gardens, and Valley Creek Solar Farm. In addition to these sites, six other growers hosted variety trials on their farms. Soil types on these farms ranged from fine silty to coarse loams.

Soil Preparation

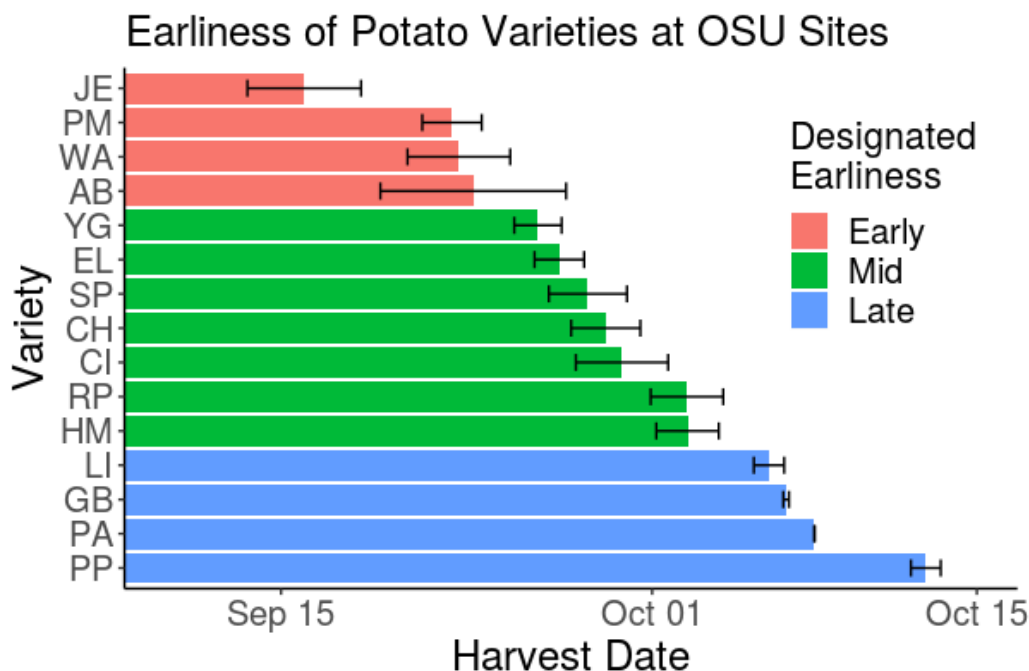
For OSU managed sites, a mixed cover crop of rye (10#/acre) and crimson clover (5#/acre) was sown the previous fall and Calpril lime was broadcast at one ton per acre. In late April, the cover crop was mowed, and in May the plots were tilled. All seed potatoes were organically sourced. Tubers were planted 2-3" below the surface and left to sprout. Once they were roughly one foot tall, the potato plants were hilled on June 10th. Plants were cultivated by hand using wheel and hand hoes.

Qualitative Observations

We had some foliar disease issues with Warba and German Butterball plants at the Peoria site. But otherwise our cultivars at the OSU trial sites were untroubled by disease or pests. Chieftain and German Butterball proved to be hollow heart susceptible. Purple Abundance produces irregularly shaped tubers because it tuberizes along the stolon.

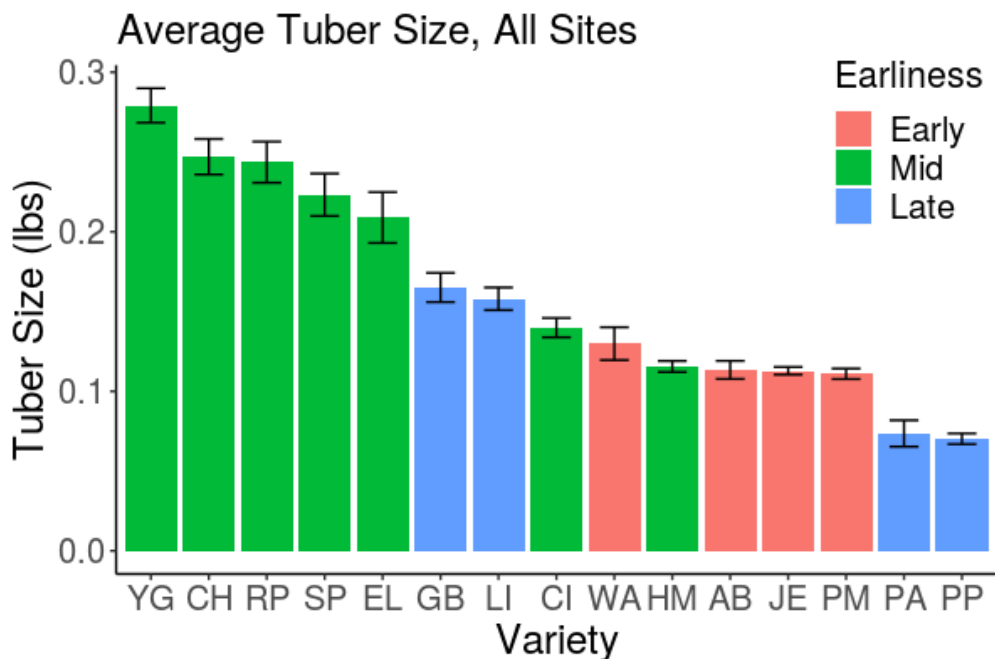
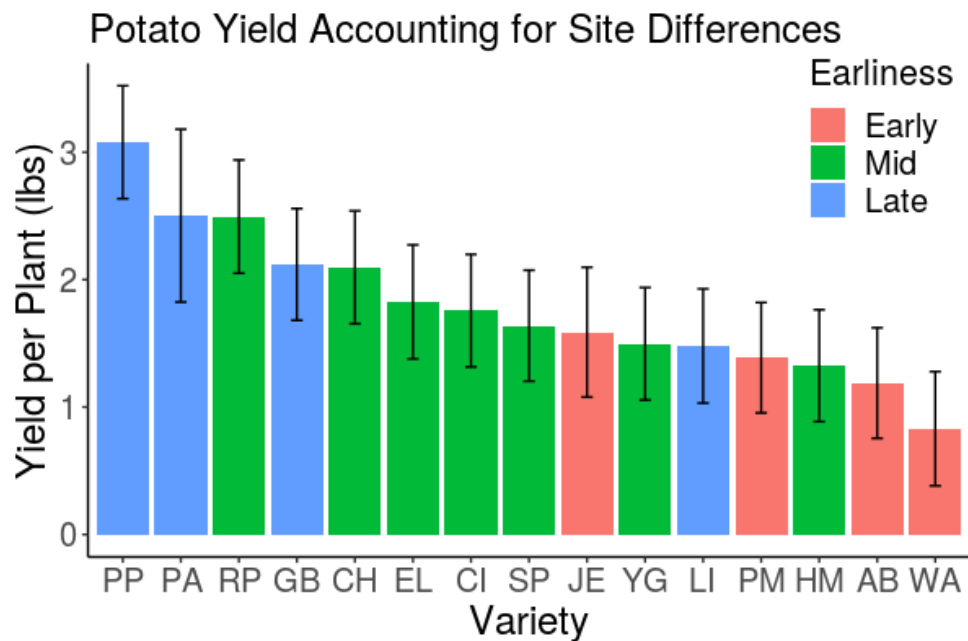
Determining Earliness of Varieties

At the three main OSU sites, we harvested potatoes only after the vegetation had dried down. Thus, our harvest dates of each variety at these sites can provide a rough approximation of the earliness of these varieties. Note, that these were observations of dry-farmed varieties across only three sites in 2019, and this crude designation of earliness is debatable and subject to change.



Potato Yield Comparisons

As potato varieties were not all equally represented across sites, we opted to compare yields based on linear models that accounted for each site's level of productivity. Overall, Purple Peruvian (PP), Purple Abundance (PA), and Red Pontiac (RP) produced the highest yields. However, PA was only grown at one site, so we cannot claim with confidence that PA is among the highest yielding varieties. While highly productive, PA and PP yielded the smallest tubers on average. Jester was the highest-yielding early season variety, followed closely by Purple Majesty.



Storage Trial Results as of 12/31/19

Variety	YG	SP	CI	CH	HM	WA	PA	PM	LI	RP	GB	EL	AB	PP
% Rotten	0	0	0	0	0	0	0	0	0	0	0	0	0	17.5
% Sprouted	20	0	3	6	24	27	0	96	69	88	17	88	47	0

Tubers were packed in paper bags and stored in waxed produce boxes in a dark, cool spot next to a walk-in cooler. Later, they were moved to a shed with lower humidity.

Strawberry Paw, Ciklimen, Chieftain, Purple Abundance, and Purple Peruvian had minimal sprouting and no rotting. However, Purple Majesty and Jester had poor dormancy and sprouted two to three months after harvest. Lilly, Red Pontiac, All Blue, and Elfe had significant sprouting by the end of the year. Only Purple Peruvian had significant losses (17.5%) from tuber end rot. However, even if one factors in these losses, this variety still out-yielded all other varieties except Purple Abundance. We did not quantify this, but some tubers of Yukon Gem and Lilly had brown spots in their flesh.

Potato Tasting

Slow Food Corvallis partnered with the OSU Dry Farming Project to host a potato tasting event on 11/7/19, featuring multiple varieties from our 2019 variety trials. Eighty-two people attended and tasted 5 varieties prepared as 'chips' and 'boiled' and voted on their favorite variety for each.

Slow Food Potato Tasting Number of votes for favorite 'chip' and 'boiled' potato

