

On-farm trial in Republic identifies better yielding potato varieties under ‘naturally grown’ practices

*This Upper Peninsula farmer used an NCR SARE Farmer Rancher Grant to compare potato varieties in a replicated trial*

Jim Isleib, MSU Extension Educator

Potatoes are an important Upper Peninsula crop. The great majority of acreage is raised by growers with long experience, using the most modern technologies and inputs. A large percent of U.P. acreage is grown for seed, and most of the rest for table stock. Most of the crop is trucked out of the U.P. In addition to these growers, there are a number of smaller producers growing potatoes strictly for local markets. Many of these growers produce less well-known varieties. Their local customers often desire production methods using more organic or ‘natural’ techniques.

Mike Wixtrom wanted to find out which potato varieties would be best for his new farm in Republic, Michigan. This Marquette County farmer ramped up his ‘naturally grown’ potato production to 9 acres this year. Mike is farming on land once owned by his grandfather, who operated a dairy and potato farm. The land changed hands for several years since that time, and fields have been sadly run down by grazing and hay harvest without adequate inputs and rotations. Mike was able to buy back a part of the farm, including the house and buildings, a few years ago. He has settled on potatoes as a crop with good market potential. Mike hopes to gain organic certification in the future. For now, he is using organic techniques and selling his farm products as ‘naturally grown’.

With assistance from the NCR SARE Farmer Rancher Grant Program and Michigan State University Extension educator, Jim Isleib, Mike tested 9 potato varieties in 2013. The test consisted of a set of plots, one row by 40’, replicated 4 times. Cultural practices in the plots were identical to the rest of Mike’s fields. Currently without a source of livestock manure, Mike uses purchased organic fertilizers and crop rotation to provide plant nutrients. No irrigation is available yet.

A field day was held on August 17 to give the public an opportunity to visit the farm and see the SARE-funded variety trial. The plots were harvested on October 9, graded and weighed on November 7. Resulting plot weights are converted to hundred weights (CWT) per acre in the table below:

Variety	Grades A+B+C (CWT/acre)*	Grade A	Grade B	Grade C	Pickouts
King Harry	79.50	71.6	6.63	1.27	0.18
Elba	57.34	44.29	10.17	2.91	0.18
German Butterball	52.27	8.55	18.42	25.32	0.37
Adirondack	44.20	18.69	19.03	6.54	0.46

Blue					
Purple Sun	44.01	34.12	8.44	1.45	0.00
Desiree	40.29	18.24	15.34	6.72	0.46
Reba	39.20	24.14	11.53	3.54	0.54
Canela Russet	33.31	8.53	16.06	8.71	1.45
Green Mountain	33.04	9.26	13.89	9.89	1.00

\*LSD = 13.1 (P=0.05)

Statistically, there were real differences among the varieties. When grades A, B and C were combined (column 2 in the table above), the coefficient of variation was 19.09% and least significant difference was 13.1. King Harry, Elba and German Butterball were the best performing varieties in the trial.

Keep in mind that this trial is only an indicator for one year, and one location. The results are most meaningful on the Wixtrom farm, since they reflect those specific growing conditions. However, for farms with similar conditions, the comparisons are of interest. The low yields are a result of low soil fertility. However, Mike works hard to develop good-paying, local markets for his potatoes and receives excellent prices, both retail and wholesale. This project is a good example of the value of on-farm crop trials to help producers identify best management practices for their own, specific farming conditions.

A more detailed report will be available on the NCR Sare website when all reports are submitted. For more information on the NCR SARE Farmer Rancher Grant Program, visit [the NCR SARE \(North Central Region Sustainable Agriculture Research and Education\) website](#). Farmer Rancher Grant Program proposals are due in mid-November for projects to be done the following year.