

Barrel washer for cleaning root crops

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Introduction

Cleaning root crops on a small farm can be challenging to do well especially if there are time and weather constraints. In interior Alaska, root crops often mature at the time when the weather is turning cold and the rush to do a good job is challenged by cold temperatures, limited time because other projects are pressing and limited labor because much of the work force is back at school. Previously our unwashed root crops were stored in plastic crates and washed by hosing crates down and while pouring the crop from one crate to another. It was an adequate but backbreaking job. Even a small

farm (<5 acre) can bring in several tons of root crops each fall and this process of washing such a large quantity of crops can be daunting. A backlog of unwashed crops can often pile up and some are rendered either unfit for sale or unfit for personal consumption. For these reasons we had looked into a mechanized way of washing root vegetables for several years. With a simple tool like a barrel washer, we would be able to quickly clean root crops more efficiently while increasing the quality and preserving the yield of the end product. Processing our crops in a shorter period would reduce the time “bottleneck” of our previous washing method. Less food would go to waste and production could be expanded to meet the demand of local produce in the community while increasing our profit margin.

Project

We researched barrel washers available and Market Farm implements in Pennsylvania (<http://www.marketfarm.com/>) makes a simple barrel washer for small farm operations like ours. Their current price for a variable speed washer from is \$3500. There are also various other used washers available around the country the most useful dealer of these is Roeters Farm Equipment (<http://www.roetersfarmequipment.com/>) in Grant, Michigan. However we wanted a new washer for this project and found a less expensive and more useful alternative from Grindstone Farm in Pulaski, NY for \$2550 (<http://www.grindstonefarm.com/ordering/root-crop-washer/>).

The washer came packed in 3 relatively small (but heavy) packages and was easy to assemble. We needed to purchase the actual wood for the barrel and plumbing locally to cut down on unnecessary shipping costs. Where many barrel washers available have a heavy metal frame, the Grindstone Farm design has a small frame which makes it light enough for a crew of 4 to list and move with ease although we have moved it with 2. The washer barrel has 5 metal hoops to which 1x4 local spruce was bolted in the inside. An aluminum frame sits on the bottom of the washer where rollers are positioned to roll the hoops. On the central hoop a chain is positioned catching on the bolts and runs through a variable speed motor. At the front of the washer a catch is fashioned so that a crate can be rested and dumped. The entire unit is tilted to allow the crops to roll from through the washer. Through the center of the washer a 1” PVC pipe is hung with holes drilled in it to allow water to spray out.

To operate the washer the water is turned on and the crops are dumped in. We fashioned a pusher to both help the crops along in the barrel and to push them back up if they required more washing. At the bottom end of washer a run-out table was fashioned to sort the crops before they fall into clean crates.

All our crops came clean much better than our old method of pouring them from crate to crate or washing them in tubs. If the skin on the potatoes had not yet set, then skin abrasion was a big problem but the run-out table and very clean washing enable s us to

sort ones whose skin had turned green much easier. Beets, rutabagas, and turnips were very easy to wash with no damage to the crop. Carrots can be problematic but only with narrow and “sharp-tipped” varieties like the Sugarsnax, but nantes and chantenay varieties showed no damage and they all came out looking sparkley and very clean.

For the time saved by using the barrel washer and the professional product what is produced, I would highly recommend it for all growers. The washer has been so successful and quick that other nearby growers have trucked their crops to us for easy washing. It is a great community asset!

We had intended to measure change from previous years by comparing our packing and sales records measured against our harvest records. The intent was that having a barrel washer would enable us to close the gap on what is harvested and what is actually saleable. However the washer has less impact on percentage of salable crops as do other factors such as weather during the growing season such as weather and disease. What the washer did enable us to do is be able to plant more root crops since we knew that our processing time would be greatly reduced.

Materials needed to complete the project and build simple run-out tables cost another \$315.37.

Budget:

Variable speed root washer	\$ 2550
Additional materials	\$ 315.37
	\$ -
	\$ -
	\$ -
	\$ -
Total Cost of Equipment	\$ 2865.37



Barrel washer from the bottom end showing the suspended pipe



The gear runs the chain through the barrel hoop



Dumping the crop



Yellow Finn potatoes at the top end of the washer



Nice clean potatoes!



Sparkley carrots



And beets!



Happiness is a barrel washer (and an Alaska Agricultural Innovation Grant)