

FIELD  
TESTED



# Seed Cleaning Equipment

*Field Tested is a series of reports about farm tools that have been tested by Montana farmers to enhance their specialty crop production. The reports describe these farmers' findings to help others make informed decisions about their specialty crop businesses. Visit [FarmLinkMontana.org](http://FarmLinkMontana.org) to read more Field Tested reports. This project is administered by the Community Food & Agriculture Coalition with funding from the Montana Department of Agriculture Specialty Crop Block Grant Program.*

## TRIPLE DIVIDE ORGANIC SEEDS COOPERATIVE



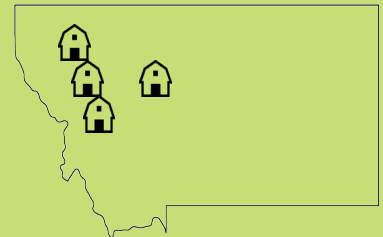
Eva Masin—Greenblade Farm  
Triple Divide Organic Seeds Co-op Member  
[tripledivideseeds.com](http://tripledivideseeds.com)

### TRIPLE DIVIDE ORGANIC SEEDS SNAPSHOT

**Location:** Flathead Valley, Mission Valley, Bitterroot Valley, and Great Falls

**Operator(s):** 9 Farms across Western Montana

**Crops:** Various seed crops: Flowers, herbs, vegetables



## INTRODUCTION

Eva Masin of Greenblade Farm is a member of the Triple Divide Organic Seeds Cooperative (TDS), which was incorporated in 2014 and is comprised of nine Montana farms that sell seed through a retail program that includes seed packets on racks throughout Montana and farmers market stands. TDS purchased five sets of seed cleaning screens to improve cleaning of packaged seed and to establish seed cleaning hubs throughout Montana where any grower can use the screens. Growing seed requires specific equipment for harvesting, cleaning, processing, and handling to ensure quality seed reaches growers. Eva and the other TDS members hope that by increasing access to seed cleaning equipment, Montana seed growers can build their reputation of providing quality seed, Montana can become a hub for organic seed growers, and that new growers become interested in growing seed.

## BUILDING REGIONAL SEED CLEANING HUBS

Triple Divide Seed Co-op purchased four sets of 12" x 12" screens, one for each region where they operate. The strategic placement of screens established seed cleaning hubs where all TDS members have access to the screens.

For TDS, individual farmers must clean seed to a high standard before shipping to a central facility for final cleaning, quality testing, and packaging. The regional hubs ensure all TDS members have professional cleaning equipment in their area to better clean seed, which in turn ensures seed arrives at TDS' central location ready for packaging.

Non-TDS members that are growing crops for seed may also contact seed hubs for access to the screens. The contacts for each region are listed below.

### MATERIALS PURCHASED

- 4 sets of 20 seed cleaning screens, size 12" x 12": \$878/set

Screens purchased are Hand Test Screens from QC Screens ([qcscreen.com](http://qcscreen.com))

### REGIONAL COORDINATOR CONTACTS FOR SEED CLEANING SCREENS

#### Bitterroot Valley

Laura Garber ([homesteadorganicsmt@gmail.com](mailto:homesteadorganicsmt@gmail.com))

#### Great Falls Area

Jacob Cowgill ([jacob.cowgill@gmail.com](mailto:jacob.cowgill@gmail.com))

#### Flathead Valley

Judy Osowitz ([terrapin@aboutmontana.net](mailto:terrapin@aboutmontana.net))

#### Mission Valley

Karl Sutton ([freshrootsorganicfarm@gmail.com](mailto:freshrootsorganicfarm@gmail.com))

## CLEANING SEEDS USING SIZED-HOLE SCREENS

When seed is harvested, it often contains the seed of weeds, chaff from dried plant material, or dirt. Screens with sized holes are used to separate this material from seed.

The screens let seed pass through while retaining unwanted materials or, vice-versa, keep seed while smaller material passes through.

See Eva demonstrating how to use the screens on the Farm Link Montana YouTube channel.



A selection of sized-hole screens used for cleaning seed from QC Screens

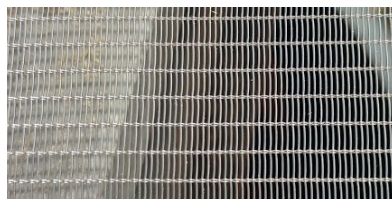
## Specific Holes for Specific Seed Shapes and Sizes

- **Rectangular or Slotted Holes**

Each seed shape requires a different type of screen with various sized or spaced holes. Lettuce seed requires herringbone or rectangular screens to remove weeds and debris from its long, thin seed. Slotted holes are used for beans and sunflower seeds (not shown).

- **Circular Holes**

Brassica seed (broccoli, kale, Chinese cabbage, etc.) and chenopod seed (quinoa, beet, chard) require round-holed screens of different sizes.



Screens with rectangular holes are used for lettuce.



Two round-holed screens, the top 17/64"; bottom 3/64"



## Example: Using Screens to Clean Chive Seed

Some of the easiest seeds to produce and clean when starting out are chives, arugula, radishes, or basil. Below is the process Eva uses to clean chive seed with the screens.

After harvest, Eva gently threshes the chives by rubbing them between her hands to remove the seed. The threshed seed contains light, papery chaff and other sticks or debris.

Next, Eva uses a large-holed screen to remove large debris. Afterwards, she uses a box fan to blow the remaining light debris away from the heavier seed. This process is called winnowing.

After winnowing, the seed should be clean enough to use the rectangular-holed screen which allows seed to pass through while separating more debris to be discarded.

Eva then winnows again, screens again, and repeats the process until the seed is sufficiently clean.



Top to bottom: Chive seed ready to be threshed; after initial threshing; and after initial cleaning using rectangular-holed screens and winnow. Next, the seed will get a final screening.





Left to right: Carrot seed prior to cleaning; during initial screen cleaning to remove the largest debris; and after the initial cleaning with a large-holed screen. Finally, seed will be winnowed and a smaller holed screen will be used to separate remaining debris.

## RESULTS

Prior to working with professional seed cleaning equipment, Eva, like the other growers, used her own colanders and a variety of techniques that often left seed with different levels of debris and chaff. This method worked, but had to be repeated more times and resulted in a less standardized product.

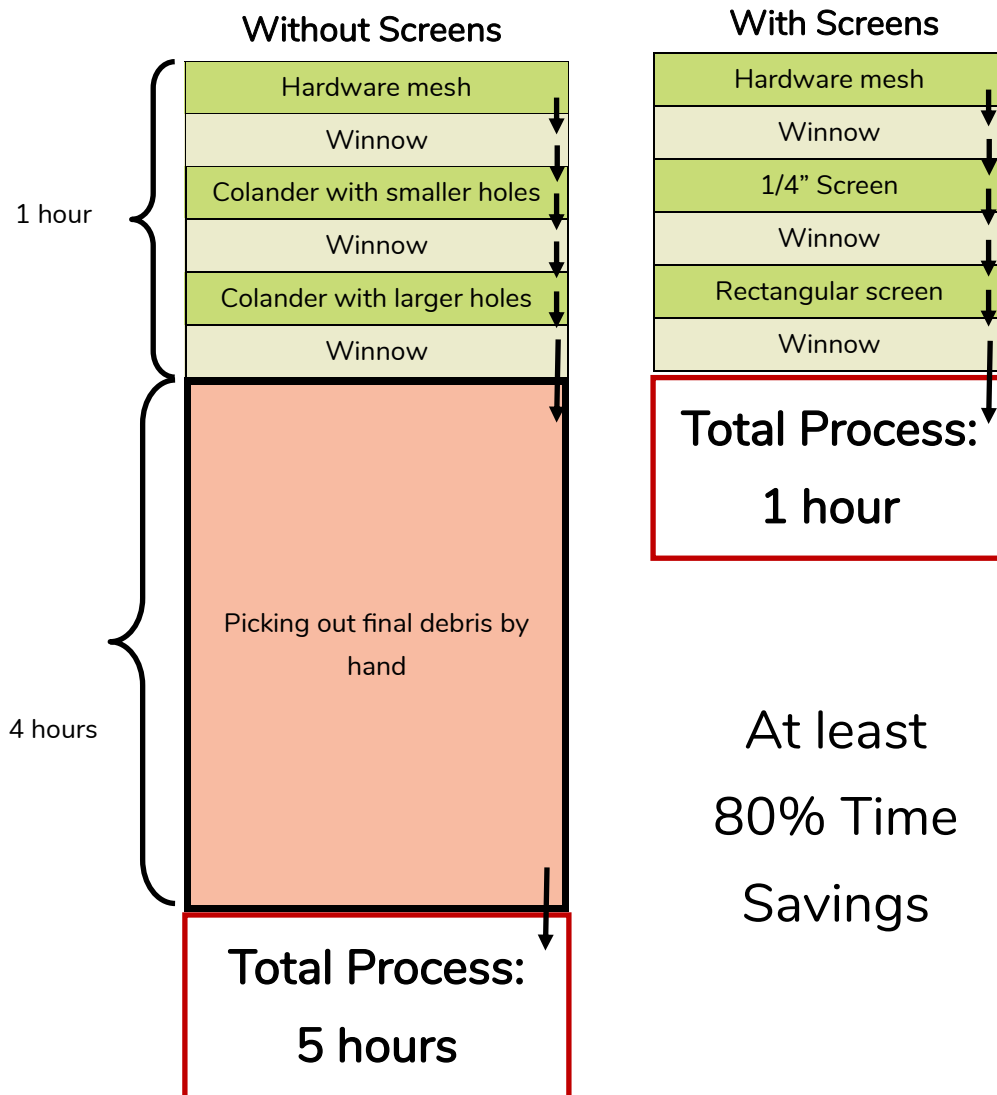
The QC screens enable members to clean their seed faster and better so seed that arrives at the packaging facility is cleaner. This has streamlined the cleaning process and made the business more profitable. One TDS member estimated the time he takes to clean seed due to the new screens is reduced by nearly 80%.

### TIP

Alternate using seed cleaning screens with winnowing for the cleanest seed. Here, four bins are used to collect material of different weight. Heavy seed (usually the best seed) falls into the first bin. The final bin should only collect chaff. (Photo courtesy of the University of Maine extension)



## SEED CLEANING PROTOCOL FOR 1 lb. CHIVE SEED



### ADDITIONAL RESOURCES

**Montana Department of Agriculture Specialty Crop Block Grant Program:** The purpose of this program is solely to enhance the competitiveness of specialty crops in Montana. Visit their website to find funding opportunities and more information. Search [Montana SCBG](#).

**Farm Link Montana:** A project of the Community Food and Agriculture Coalition to connect Montana's beginning farmers and ranchers with the tools they need to succeed: [farmlinkmontana.org](http://farmlinkmontana.org)

**Field Tested Reports and Videos:** Find more reports about other projects and see videos of tools in action at the [Field Tested webpage, under Resources on FarmLinkMontana.org](#)