METHODS
This participatory pepper-breeding project started in 2016 using seed obtained from Dr. Michael Mazourek’s breeding program at Cornell University, which he derived from a cross made between commercial varieties Ace and Aristotle.

The four growers in Ontario are working together and using mass selection to select best peppers for the project’s goal of creating an early, blocky red pepper with good flavor that is adapted to organic growing systems in southern Ontario.

RESULTS
The 2017 growing season was very challenging, with a wet spring and wetter summer on all of four farms.

At some point in the season, all four growers contended with plants being overwatered and some had standing water in their fields; they also reported some lodging of plants.

One grower’s plants were left in the greenhouse too long, and went into the ground when they were leggy and stressed before being pounded by a lot of rain.

Project Summary
Seeds Sown: 150+

Dates                Greta          Rebecca        Annie           Kathy
Seeds sown           Mar 23        Mar 31         Mar 21          Mar 30
Flower opening       Early July    NA             Jun 1           Jun 6
First ripened fruit  Aug 20        First week in Aug    Sep 4*          Aug 20/25
*Annie’s first peppers ripened on Sep 5, before check plantings. This was later than others because all plants were stripped and allowed to “restart” due to the stressful growing conditions. Annie will not include 2017 seed in the 2018 grow-out because she does not feel confident that her selections under such poor growing conditions reflected the genetic potential of plants.

SELECTION PROGRESS
Despite the challenging wet season, progress was made for both red and yellow blocky pepper lines.

• There is still some variability in plant stature and fruit shape and size, but less than the previous year.
• Yellow peppers were observed in all plots, though less reported than previous year.
• All four growers made selections and harvested seed.
• Collectively they harvested over 40g of seed from red pepper selections. These seeds, excluding Annie’s, will be combined and redistributed for another round of mass selection in 2018.
• Greta and Rebecca continued to select a yellow blocky pepper line out of the mass selected population.

FUNDING
WHY IT MATTERS
Ecological farmers in southern Ontario do not have access to an early ripening bell pepper that is available in organic seed or bred for organic production systems. To meet this need, Greta, Rebecca, Annie and Kathy are selecting red and yellow peppers while building a network of regional vegetable seed breeders!

BREEDING OBJECTIVE
To produce early ripening, blocky red and yellow bell peppers with good flavour for organic field production in southern Ontario

For additional details visit: efao.ca/research-library
November 2017
Research Report: HORTICULTURE 2017
Southern Ontario Pepper Breeding Project

Weather Data: Monthly temperatures and precipitation for 2017 and historical averages.

Ottawa CDA was selected as the weather station for Greta’s Organic Garden. It is located 8.65 km from the farm.

Georgetown WWTP was selected as the weather station for Whole Circle Farm. It is located 17.43 km from the farm.
Hartington IHD was selected as the weather station for Mouse Seeds at Windkeeper Community Farm and Patchwork Farm. It is located 35.40 km from Windkeeper Community Farm and 24.7 km from Patchwork Farm.