

The Hawaii Seed Growers Network

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The Hawaii Seed Growers Network is a collaborative project of seed growers from across the State producing seed of well-adapted crop varieties. As of mid-2019 there are around 10 growers contributing seed to the offerings which can be purchased at the Network's [website](#). The emphasis of the network's offerings is on varieties that growers in the network have found to yield good tasting produce under ecologically managed systems, with tolerance for a range of Hawaii's climatic conditions and relevant pest and disease issues. The network is excited to continue its growth, thanks to support from the Kohala Center and funding from the [HDOA's Specialty Crops Block Grant](#), in addition to generous past support from the Ceres Trust Funding and the County of Hawai'i. In the coming year, the network plans to add more than 20 new varieties of crops, as the number of contributing growers expands. The network feels honored to be part of carrying on the work of gardeners and farmers, as well as of that of past and present University of Hawaii researchers, extension agents, and breeders in promoting the utilization of locally produced seed of well-adapted varieties.



Harnessing the power of a genetic adaptation is one of the most important ways to contribute towards sustainable agricultural systems. Varieties with genes imparting effective utilization of organic forms of nutrients can help maintain and increase yields while using locally available, sustainable nutrient inputs such as tankage, cover crops, compost, and manures. Varieties with genetically determined resistance or tolerance to important pests and diseases such as rusts, mildews, wilts, nematodes, and viruses can reduce or eliminate the use of pesticides and fungicides in controlling these - with positive ecological, health, and economic benefits for consumers, citizens, and growers.

Varieties with tolerance to heat can reduce the occurrence of problems such as blossom end rot on tomato and tip burn on lettuce, reducing the need for nutrient inputs, extra irrigation, and other costly cultural controls. As pioneering champion of crop genetic diversity [Cary Fowler](#) has observed, the agriculture of the future must cease trying to adapt agronomic conditions to fit the plants, and rather focus more on adapting the plants to the existing agronomic conditions.

The History of the Hawaii Seed Growers Network

The Hawaii Seed Growers Network grew out of previous work by the [Hawaii Public Seed Initiative](#), which itself was birthed by the work of the Kohala Center and advocates of local seed systems. In 2010 The Kohala Center conducted a baseline assessment of island-wide interest in seed saving and community seed-saving capacity. This survey revealed the need to develop knowledgeable seed growers, increase seed education, and create a local source of quality seed.



Attendees of the SeedFest 2018 in Waimanalo learning about seed cleaning.
Photo by Augusto Decastro



Class time during 2018 On Farm Breeding for Organic Systems course taught by affiliates of the Northern Organic Vegetable Improvement Collaborative in Waimanalo, Oahu

[Alliance](#)) and seed producers (like Frank Morton of [Wild Garden Seed](#)). Video presentations from the meeting can be found on the HPSI's [website](#)

A two-day island-wide Seed Symposium, "Hua Ka Hua: Restore Our Seed," was held in 2010 in Kailua-Kona, funded by the USDA's National Organic Program; the University of Hawai'i at Hilo College of Agriculture, Forestry, and Natural Resource Management; the University of Hawai'i at Mānoa College of Tropical Agriculture and Human Resources (UH CTAHR); County of Hawai'i; and the Keauhou-Kahalu'u Education Group of Kamehameha Schools. This symposium brought together CTAHR researchers working in sustainable agriculture and variety selection (like Dr. Ted Radovich and Dr. Hector Valenzuela) together with local food systems advocates (like Nancy Redfeather), local crop experts (like [Jerry Konanui](#)), and mainland seed systems experts (from [Organic Seed](#)

The success of the Symposium resulted in the formation of the Hawai'i Public Seed Initiative, led by seed growers on staff at The Kohala Center and from UH CTAHR Cooperative Extension Service. During ensuing years the HPSI held workshops on Hawai'i Island, Kaua'i, O'ahu, Maui, and Moloka'i, bringing together hundreds of farmers and gardeners throughout the islands for education, information sharing, and network building. In 2013 and 2014 HPSI facilitated three-day "Train the Trainers" workshops on



Hawai'i Island to further develop seed leaders. These advanced trainings prepared dedicated individuals to organize seed networks, educational programs, and seed-sharing events on their respective islands.

In 2014 an independent group of small farmers who had been involved in the seed trainings across the State formed the Hawai'i Seed Growers Network (HSGN). After 4 years of work and development, the Hawaii Seed Growers Network launched its website offering seeds previously being shared among growers for sale to the public. Offerings are expanding as growers produce seed of new varieties and new growers join in the network. Both the Hawaii Seed Growers

Members of the Hawaii Seed Growers Network. From left to right: Daniela Dutra-Elliot, Lyn Howe, Nancy Redfeather, Shekinah Carrillo, Britton Price, Melissa Emond, Russel Nagata, Jacob Roberts, Evan Ryan, Jay Bost, and Melanie Willich. Not pictured - Glenn Teves

Network and the Hawaii Public Seed Initiative continue to be involved in educational events, such as SeedFest - which will be held this year on each island on September 21 or 22nd.

Hawaii as a Center of Tropically Adapted Crop Innovation

The Hawaii Seed Growers Network is very cognizant of both the locally and globally significant role that Hawaii has played in providing growers with crops varieties with disease resistance, heat tolerance, and unique culinary applications. The work of breeders based at the University of Hawaii, such as Dick Hartman, James Brewbaker, and Jim Gilbert gave Hawaii's growers varieties still utilized today and offered through the [UH Seedlab](#), including well known and loved varieties such as Poamoho Wonder Pole Bean, Hawaiian Supersweet #9 Corn, Komohana Tomato, and Manoa Lettuce, among many others. Selection and seed saving by farmers has given us well



On Farm Breeding for Organic Systems workshop at UH Waimanalo Research Station. Lettuce trials of selections made by Molokai Extension Agent Glenn Teves. Some varieties will be offered by Hawaii Seed Growers Network soon.

adapted varieties such as Koba Green Onion and Hirayama Kai Choi. Some of the history surrounding the development of these varieties and others can be found in [Crop Improvement in Hawaii: Past, Present, and Future](#). Less well appreciated is the fact that the varieties and breeding lines of these researchers travelled around the world, contributing to the development of disease and stress resistant varieties worldwide - with significant economic and well-being impacts for growers and consumers. The HSGN is fortunate to have as part of it Glenn Teves, Molokai Extension Agent, who has done more than anyone to record and bring to light Hawaii's illustrious past in plant breeding. His work can be found in his [Moloaki New Farmers Newsletter](#), where he has excellent articles on [Tomato Breeding in Hawaii](#) and [Local Seeds for Local Needs](#), among others.

The Future of Seed in Hawaii

While during the past decades the retirement of UH breeders and changes in funding have led to decreased breeding activity in the State, all those involved in agriculture continue to appreciate the importance of well adapted planting stock. The extensive trials done by CTAHR researchers, CTAHR Extension, and networks of local growers give growers crucial



Sampling tortillas from 4 varieties at SeedFest 2018. The orange variety 'Nalo Orange' is presently offered by Hawaii Seed Growers Network.



From the World Vegetable Center in Taiwan - an important source of seed and information for Hawaii's growers.

information to help them in making variety selections - especially in light of changing climate conditions and the constant arrival of new pests and diseases. [Tomato Yellow Leaf Curl Virus \(TYLCV\)](#) is an excellent example for growers on Oahu, who are essentially precluded from growing tomato varieties (including UH Seedlab varieties) without genetic tolerance of the virus at this time. While [extensive variety trials](#) by Extension have shown varieties that growers can utilize, none of the varieties are presently produced in the State and there are few varieties available produced organically and even fewer that are open-pollinated - meaning growers can effectively save seed from them for future planting.

The Hawaii Seed Growers Network is pleased to have obtained from the [World Vegetable Center](#) in Taiwan an open pollinated cherry tomato with tolerance to TYLCV with the exciting name [AVTO 1350](#) found [here](#) at HSGN's website. Members of the HSGN offer other tomatoes without genes for tolerance for growers lucky to grow in areas with lower virus pressure and other members are working in breeding



and selecting new varieties with different qualities that will have the Ty-1/Ty-3 gene which confers tolerance to TYLCV.

The Hawaii Seed Growers Network hopes to be an integral part of helping make old but still relevant varieties, as well as new varieties (including ones bred by local growers), available to Hawaii's farmers and gardeners. The network believes there are compelling reasons to produce as much seed locally as possible, including keeping dollars in the local economy, providing income for new and established growers, maintaining and creating varieties unique to Hawaii's diverse culinary traditions, and harnessing the powers of genetic and epigenetic adaptation to the State's growing conditions and to the expanding acreage of sustainably managed cropping systems. The network looks forward to expanding its work and collaborating with more seed growers, with [Master Gardener groups](#), with the [UH Seedlab](#), with [GoFarm Hawai'i](#), the [Hawai'i Farmers Union](#), the [Culinary Breeding Network](#), and other related grass roots seed groups, especially those in the [sub-](#)

[tropics](#) and [tropics](#), to continue to provide farmers and gardeners with access to unique varieties and to encourage and facilitate an increase in seed saving, seed production, and variety selection in Hawaii. The Hawaii Seed Growers Network encourages all eaters and growers to help support this important work by purchasing locally grown seed, learning more about seed saving, and donating to the Hawaii Public Seed Initiative to keep this work going as the network finds economic footing.

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