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For Immediate Release

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New online tool matches crop varieties to Hawai'i's microclimates

KAMUELA, Hawai'i—June 16, 2015—The Kohala Center recently launched an online tool to help Hawai'i gardeners and small-scale farmers select crop varieties most likely to succeed in their specific geographic areas. The new tool, developed through The Center's Hawai'i Public Seed Initiative, also offers a detailed representation of local plant hardiness zones based on Hawai'i's diverse microclimates.

The Seed Variety Selection Tool for the Hawaiian Islands, accessible online at HawaiiSeedInitiative.org/svst, was created to help seed savers, gardeners, and small-scale farmers share information about which crops perform well in their locations. Gardeners and small-scale farmers from all islands with at least two years of successful experience growing specific varieties are encouraged to submit their crop-performance data at HawaiiSeedInitiative.org/svst/seed-input. Names, physical addresses, and contact information of contributors are kept confidential and are not published on the website.

Many growers in Hawai'i invest years of trial and error to identify plant varieties they can grow successfully, but have lacked a convenient means to share their results with a wider audience. The Seed Variety Selection Tool is intended to help novice and even experienced gardeners identify their specific plant hardiness zones and select varieties to increase the chance of success in their area, potentially helping them grow food more rapidly and reduce the risk of crop failure.

"What's unique about the Hawaiian Islands is how abruptly our microclimates change," said Lyn Howe, coordinator of The Center's Hawai'i Public Seed Initiative. "A difference of just a mile or two, or a slight increase in elevation, can mean very different soil and growing conditions. This tool is meant to help anyone in Hawai'i determine their specific climate zone and learn from the success of other growers who garden or farm in similar conditions."

Consulting North American plant hardiness zone maps offers minimal, often unusable guidance for growers in Hawai'i. Because the U.S. Department of Agriculture's 20 plant hardiness zones are determined by minimum-temperature data only, a vast majority of land in Hawai'i falls in Zone 11, the warmest of all zones and is assigned to regions with minimum temperatures above 40 degrees Fahrenheit. Even Sunset magazine, which offers more refined plant zones for many geographic areas, splits all of Hawai'i into just two zones: areas above and below 2,000 feet in elevation.

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At a 2013 meeting of Hawai'i seed-saving advocates convened by the Initiative, participants identified a need to share information about which seed varieties work in specific locations because of the diversity of microclimates across the islands. Responding to this expressed need, Ilana Stout, a graduate student in tropical conservation biology and environmental science at the University of Hawai'i at Hilo, began to develop the Seed Variety Selection Tool for the Hawaiian Islands as a final project in a Geographic Information Systems (GIS) class. She started by combining elevation data—a proxy for temperature—with moisture-zone data that had been gathered based on rainfall and vegetation by Dr. Jonathan Price, assistant professor of geography at UH Hilo. By combining the two, Stout ended up identifying 18 different climate zones for Hawai'i Island. A mini-grant administered by the Initiative and funded by the Ceres Trust enabled Stout to continue working on the project, and in the summer of 2014 she expanded the map to include all islands and built a search function so that users could enter their addresses and learn their specific climate zones.

At the same time, the Initiative surveyed experienced gardeners throughout the islands about their successes in growing different plant varieties. Starting with seven food crops commonly planted in Hawai'i—lettuce, tomatoes, peppers, eggplant, beans, squash/pumpkins, and kalo (taro)—Stout and Howe collected performance data from experienced gardeners and small-scale farmers and input them into a searchable database, tagging each data set by crop variety, climate zone, island, and whether the variety was grown using organic or conventional methods.

Given the recent launch of the tool, users are advised that the amount of submitted data is limited and results may not yet be available for their specific locations. Users are also encouraged to submit their feedback and ideas to seedproject@kohalacenter.org.

Dr. Ryan Perroy of the UH Hilo Department of Geography and Sylvana Cares at the Spatial Data Analysis and Visualization Labs at UH Hilo also provided assistance and resources to develop the Seed Variety Selection Tool.

About The Kohala Center

Founded in the year 2000, The Kohala Center (kohalacenter.org) is an independent, community-based center for research, conservation, and education. We turn research and ancestral knowledge into action, so that communities in Hawai'i and around the world can thrive—ecologically, economically, culturally, and socially.

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