



# Student Collaborative Organic Plant Breeding Education

## The Celtuce Project

The celtuce breeding project started in Winter 2022 as part of an seminar course where students learned about Asian specialty crops, cultural memory banking, and the Asian American community's historical and contemporary roles in California's food and agriculture industries. This was achieved through conversations with farmers, chefs, researchers, and farm advisors. To address the shortage of varieties available for crops that are important to AAPI communities, the Second Generation Seeds Collective and UC Davis students have teamed up to breed new celtuce strains via cooperative breeding methods. This project involves documenting the experiences of participating students and farmers and integrating the culinary and cultural significance of celtuce into the variety selection and development process.



## Breeding Goals

1. Head lettuce × Celtuce: Introduce bolting resistance and new leaf types to celtuce.
2. Green Celtuce × Red celtuce: Improve bolting resistance and increase stem thickness in red celtuce.
3. Green celtuce × Green celtuce: Create green celtuce varieties with innovative combinations of leaf shapes and flavors, along with enhanced bolting resistance and stem thickness.

Our expectation is to generate advanced breeding lines with bolting resistance, large stems, unique appearances, and superior flavor for cultivar release as early as 2026 or 2027.

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## 2023-24 Field Trials

Field trials for celtuce commenced in Spring 2023 at the UC Davis Student Farm and eight farms throughout California, along with farms in New York, Oregon, and Washington. Each farm trial included 3-10 cultivars or breeding lines with 15-100 plants each, depending on each farm's capacity. Farmers noted bolting dates, stem traits, harvest dates, and made selections of individual plants or families with student feedback. The celtuce cultivars 'Spring Tower' and 'Summer 38', the most popular varieties, were used as checks. In 2024 we evaluated 14 F3 populations in this trial phase, with the main goal being to identify unique traits for further development and to explore how quality traits in celtuce could be evaluated.

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## Get Involved

The SCOPE project is currently seeking collaborations with growers and seed producers for on-farm trials. We are also looking to expand to new crops that are integral to the California organic seed industry. To become part of the SCOPE network of on-farm trials, or propose a collaboration for a new crop, contact: [scope@ucdavis.edu](mailto:scope@ucdavis.edu)

For more information on the projects, visit: [plantbreeding.ucdavis.edu/scope-project](https://plantbreeding.ucdavis.edu/scope-project)



For more information on the Asian American Seed Stewards, visit: [aaseedstewards.ucdavis.edu](https://aaseedstewards.ucdavis.edu)

