

Researchers find no loss of vegetable diversity in the 20th century; correct math error in 1983 study

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(PhysOrg.com) -- Two University of Georgia scholars argue against the conventional wisdom that the 20th century was a disaster for vegetable crop diversity by showing that there was no overall loss of vegetable diversity in that era.

Paul J. Heald, Post Professor at the School of Law, and Susannah Chapman, a Ph.D student in the anthropology department, have compared the availability of varieties in commercial seed catalogs in 1903 to those available in 2004.

The two UGA researchers report that in 1903, 7,262 varieties of 48 crop vegetables were available and, in 2004, only 2.2 percent fewer varieties were available, showing almost no loss of overall varietal diversity. However, they did find that 94 percent of the seed varieties listed in the 1903 USDA catalog were no longer available from the most common commercial sources, meaning a 6 percent survival rate from 1903.

“The lack of loss in the overall diversity of seeds can be explained by the fact that preservationists have identified and maintained some of the old seeds, importers have brought in new varieties, and farmers and enthusiastic gardeners have developed new varieties,” Heald said.

Today’s growers of garden beans, garlic, lettuce, peppers, squash and tomatoes have many more choices than they did 100 years ago, while

growers of sugar beets, cabbage, field corn, radishes and rutabagas have vastly fewer selections available to them, according to the study.

Additionally, Heald and Chapman report that W.W. Tracy, author of the 1903 USDA inventory list, said at the time of his study, “Variety names of vegetables in this country are being greatly multiplied every year by the renaming of old varieties.”

According to Heald and Chapman, this means many of the reported seed varieties in 1903 were actually the same variety of seed but listed under different names. “Because of the past issue of multiple naming, consumers of seeds today may actually have even more choices than in 1903, even though many of the 1903 varieties no longer exist,” Heald said.

During the course of their research, Heald and Chapman discovered a math error in a widely accepted study on crop varieties. Carey Fowler and Pat Mooney reported that a 1983 study of seeds held in the National Seed Storage Laboratory conducted by the Plant Genetic Resources Project of the Rural Advancement Fund showed that 97 percent of the vegetable varieties listed on a 1903 USDA inventory of seeds were extinct, meaning there was only a 3 percent survival rate. However, Heald and Chapman found a calculation error and report the actual survival rate for seed varieties was 7.4 percent through 1983, more than double than what was previously thought.

The next phase of Heald and Chapman’s research will further examine patent activity for the crops that experienced the greatest diversity gains during the 20th century. Preliminary findings suggest no correlation between varietal replacement and patents in the six most diverse varieties.

[More information:](#) Heald and Chapman’s paper can be downloaded for

free from the Social Science Research Network at
papers.ssrn.com/sol3/papers.cfm?abstract_id=1462917.

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