

# Spud origin controversy solved

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Molecular studies recently revealed new genetic information concerning the long-disputed origin of the “European potato.” Scientists from the University of Wisconsin-Madison, the University of La Laguna, and the International Potato Center used genetic markers to prove that the remnants of the earliest known landraces of the European potato are of Andean and Chilean origin. They report their findings in the May-June 2007 issue of *Crop Science*.

“European potatoes,” the cultivated potatoes first appearing in Europe and later spreading worldwide, were first recorded outside of the Americas in 1567 on the Canary Islands Archipelago. Today, scientists believe that the remnant landraces of these early potatoes still grow in on the Canary Islands.

For years, researchers have debated the birthplace of the European potato. While some scientists hypothesized that landrace introductions originated in the Andes, others believed that the introductions came from Chile. While there are multiple lines of evidence to support each theory, the Andean introduction hypothesis stems from the belief that the Canary Islands landraces are solely of Andean origin. Although almost all current European potatoes have Chilean traits, the Andean hypothesis supposed that these potatoes arose from crosses with Chilean potatoes as breeding stock after the Irish potato famine in the 1840s.

Using molecular markers, the scientists found that the Canary Island landraces possessed both Andean and Chilean types, as well as possible hybrids of the two.

“In combination with other historical, molecular, agronomic, and crossing data, these findings support a hypothesis of multiple early introductions of both Andean and Chilean germplasm to the Canary Islands and to Europe,” said Dr. David Spooner, co-author of the *Crop Science* study.

Spooner and others speculate that the early European potato was selected from Chilean introductions before the 1840s because they were better able to reproduce in long-day conditions, in contrast to Andean potatoes that were short-day adapted.

“The results of these studies are of interest not only to evolutionists but also for breeders. Years of effort were made to artificially recreate the European potato from Andean landraces yet it may have originated from Chile,” said Spooner. “If the true origin of the European potato was from Chile, rather from the Andes, it shows the value of plant evolutionary studies to understand and complement breeding programs”.

Spooner and other scientists now plan to further investigate the origin of the European potato from DNA extracted from herbarium specimens of cultivated potatoes collected in Europe before 1845.

“The results of these studies are providing data to rewrite the history of the cultivated potato and will aid breeders to better interpret the true pedigrees of our modern potato,” said Spooner.

Source: American Society of Agronomy

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