

Genetic study finds modern wine grapes first domesticated in South Caucasus

December 22 2021, by Bob Yirka



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A team of researchers from the University of Udine and Istituto di Genomica Applicata, both in Italy, has found evidence that the wine grapes grown in modern times across Europe were first domesticated in

the South Caucasus. In their paper published in the journal *Nature Communications*, the group describes their genetic analysis of a large number of grapes across Europe and in the South Caucasus.

Wines made in Europe are famous the world over for their taste and quality, and include such varieties as sauvignon blanc, chardonnay, merlot and cabernet. It is generally believed that the grapes used to make such wines were slowly cultured versions of ancient European grapes. In this new effort, the researchers have found that not to be the case.

In studying grape samples found across Europe and the South Caucasus (from 204 cultivated and wild varieties), the researchers found that their ancestors were domesticated grapes originally grown in the South Caucasus (a region straddling the Caucasus Mountains that includes Azerbaijan, Armenia and Georgia) for consumption, approximately 4,000 years ago. They also found evidence that the grapes slowly made their way westward into Europe, approaching the Mediterranean and then moving into southern Europe—and once there, interbreeding with native grape varieties. The researchers suggest that such interbreeding helped the grapes survive the colder winters in Europe. And they further suggest that interbreeding with different native varieties in different parts of Europe led to the development of the different varieties that are known today. Once established, the grapes were bred for bigger size and tastier fruit.

The researchers also found an enzyme in the wild grapes that was not present in domestic varieties. The enzyme is known to incite the production of a growth hormone. In wild grapes, the hormones work to make seeds proportionally large—but grapes that produce smaller seeds are preferable for use in both direct consumption and wine-making. Thus, its absence made the domestic grapes a better choice.

More information: Gabriele Magris et al, The genomes of 204 *Vitis*

vinifera accessions reveal the origin of European wine grapes, *Nature Communications* (2021). [DOI: 10.1038/s41467-021-27487-y](https://doi.org/10.1038/s41467-021-27487-y)

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Citation: Genetic study finds modern wine grapes first domesticated in South Caucasus (2021, December 22) retrieved 29 March 2023 from <https://phys.org/news/2021-12-genetic-modern-wine-grapes-domesticated.html>

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