

Vitamin E discovery in maize could lead to more nutritious crop

November 1 2017, by Joe Schwartz



Credit: CC0 Public Domain

New research has identified genes that control vitamin E content in maize grain, a finding that could lead to improving the nutritional profile of this staple crop.

Cornell University scientists and colleagues from other institutions combined different types of genetic association analyses to identify 14 genes across the genome that were involved in the synthesis of vitamin E. Six genes were newly discovered to encode proteins that contribute to a class of [antioxidant compounds](#) called tocochromanols, collectively known as vitamin E. Along with [antioxidant properties](#), tocochromanols have been associated with good heart health in humans and proper functioning in plants.

"We have established a near-complete foundation for the genetic improvement of vitamin E in grain of maize and other major cereals," said Michael Gore, associate professor of plant breeding and genetics and a co-corresponding author of the study published in the journal, *The Plant Cell*.

"There has been talk, among breeders working to increase provitamin A in maize, that we could increase [vitamin E](#) at the same time," said Christine Diepenbrock, a graduate student in Gore's lab, and the paper's first author. "They are related compounds biochemically, and tocochromanols are essential for seed viability in that they prevent seed oils from going rancid throughout [seed](#) storage, germination and early seedling development."

More information: Christine H Diepenbrock et al, Novel Loci Underlie Natural Variation in Vitamin E Levels in Maize Grain, *The Plant Cell* (2017). [DOI: 10.1105/tpc.17.00475](https://doi.org/10.1105/tpc.17.00475)

Provided by Cornell University

Citation: Vitamin E discovery in maize could lead to more nutritious crop (2017, November 1) retrieved 2 May 2024 from

<https://phys.org/news/2017-11-vitamin-discovery-maize-nutritious-crop.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.