

# Effects of Nixtamalization on the Physical Properties and Nutrient Content of Various Corns

Christina Perry<sup>1</sup>, Kathryn Hollar<sup>2</sup>

<sup>1</sup>Southern University and A&M College, <sup>2</sup>Harvard University

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Nixtamalization is a traditional technique used to prepare maize, and it includes treating the maize with a basic solution consisting of lime, then steeping the maize in the basic solution known as nejayote, and then rinsing the steeped maize, referred to as nixtamal. Nixtamalization improves the nutritional value of maize. Our goal was to observe the changes in the corn kernels during each stage of the nixtamalization process, along with observing changes in niacin or vitamin B3 and other amino acids. Various corns were used, including White Olotillo, Yellow Cónico, Pink Xocoyul, Purple Cónico, Blue Cónico, and Chico corn. Two nixtamalization methods were used to prepare the various corn types: the cook first method and the soak first method. Liquid chromatography-mass spectrometry (LC-MS) measured the nutrient content of the corn, and the data does not demonstrate an increase in niacin within the final product.



White Olotillo corn after being nixtamalized.

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Christina Perry is a graduating senior at Southern University and A&M College, majoring in Chemistry, from the capital city of Baton Rouge, Louisiana. After graduation, she plans to further her academic endeavors by pursuing medical school.

Participating in the REU has given me an unforgettable experience. Before this summer, I didn't have a vast knowledge of food science. This summer, I have learned much about nixtamalization however, our summer experiments were not limited to nixtamalization, but we also experimented with boba (tapioca) pearls, popping boba, and holographic chocolate.

I also had the opportunity to teach high school students about making boba pearls and popping boba. Seeing the students enjoying the boba experiments reminded me of my younger self. Taking part in these experiments reminded me that science is fun, exciting, and delicious. My experience this summer intensified my desire for research and pursue my goal of becoming a physician-scientist.



Top: Photo of Christina holding samples of corn that she has nixtamalized. Bottom: Photo of Christina preparing the kernel samples for LC-MS analysis.