Teenage son: Hey, I'm going out to play. It's nice.

Mom: Oh wait, you’ve got to eat something first. I'm making you something really special.

Teenage son: That smells good. What is it?

Mom: Blue corn mush. My grandmother used to make it for me when I was about your age.

Teenage son: Wait, what is that?

Mom: Juniper ash.

Teenage son: You put ash in my breakfast?

Mom: Of course

Teenage son: What… that's weird

Lee Francis IV: Hey, hey, hey… I got this.

Teenage son: Who are you?

Lee Francis IV: I am your host to the world of Indigenous science. Today I'm going to tell you that Indigenous people have passed down traditional recipes throughout the ages. And, I'm also going to tell you why ash and blue corn

mush work perfectly well together, here on Indigi-Genius. Oh, can I get some of that, please? Lovely.

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Lee Francis IV: When it comes to corn, Indigenous people have long known the benefits. Corn is essentially an evolved

grass that is easy to grow and cultivate. The corn seeds, or kernels, are calorie dense and can provide much needed energy and nutrients for the body to function throughout the day. As opposed to other grains such as wheat or barley, corn provides more bang for the buck. By the time colonists arrived in the Americas, Indigenous people had cultivated numerous varieties of corn and many methods of preparing the food for consumption. Drying and grinding were some of the ways that the preparation methods could release much of the nutritional benefits of the corn itself. As for blue corn, studies in Morelos, Mexico demonstrated that the blue color comes from anthocyanins, the same health plus compounds found in berries and red wine. Further research showed that blue corn had a lower concentration of resistant, or indigestible starch, than white corn and also a lower glycemic index value. But, what exactly is going on with the ash? First, it should be noted that one gram of ash contains as much calcium as a glass of milk. Calcium is a necessary building block of strong bones and good health. Adding calcium to the diet is essential for long-term health and survival. Next, ash has high alkalinity. When it comes in contact with the cell walls of the corn it begins to break them down. The cellular structure of corn works as a protector for the corn seed. Cooking can soften the corn to make it more nutritious for human consumption, but by adding an alkaline agent, such as baking soda, calcium hydroxide or tree ash, it initiates a process called nyxtamalization. This process breaks down the outer shell of the corn, enhancing flavor and increasing the amount of absorbable calcium niacin and vitamin B3. The word nixtamal is Azteca in origin and refers to the process of adding calcium hydroxide to soaked corn. The calcium hydroxide would usually come from scraping limestone. When there was no limestone dust to use, Indigenous peoples realized that tree ash could serve just as well. Last, as a breakfast meal, the blue corn mush provides the nutrients and calories needed for a long day's work of… cultivating more corn. You can think of it like baking soda. When added to a recipe in an equal amount with baking powder, an acidic substance, you create bubbles and a rising agent. Without the bubbles, you get a result that is flat and dry. Communities the world over have understood the importance of preparation and adding nutritional value to their foods, especially in the early morning hours, when calories and nutrition are important to fuel the body for a hard day's work. Porridge, oatmeal, grits, mush - these have been staples for societies throughout time. And, it's not just blue corn mush. Indigenous people have been aware of the benefits of traditional grains and cultivation for several millennia. But corn, though, has been such an important staple, with so many health benefits, that it became a cultural centerpiece and continues to be for peoples throughout the Americas. Dances, songs, stories and cuisine revolve around this most important commodity. Growing up, atole, as many families call blue corn mush, was a wintertime treat.  I remember my grandmother teaching us grandkids how to prepare the meal.  The breakfast would be dense and often she would throw in walnuts and dried fruit as a way to add more flavor and more nutrition.  The sweet and soulful smell would always bring me back to her kitchen on those cold winter mornings.  Realizing that this knowledge comes from a deep, cultural and scientific understanding is powerful and gives insight into the brilliance of Native foodways.  That insight and comfort are on display each and every day…here on Indigi-Genius.