

# Kris Nelson Community-Based Research Program

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## CURA Indigenous Seed Recipe Report

Prepared in partnership with  
Dream of Wild Health

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# **CURA Indigenous Seed Recipe Report**

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Dream of Wild Health  
August 17, 2015

## Introduction

First I would like to express my gratitude to Dream of Wild Health, and Dr. Craig Hassel for recommending me in taking responsibility for this project; I feel a sense of honor and privilege. I would also like to thank CURA for funding this project, without which these recipes would not exist today. I am not Dakota; my ancestors are Cherokee. However, corn is precious to the Cherokee and it touches my heart to be able to work with these traditional foods. I prayed to our Creator for good things to come out of this project that will benefit our community. This project presented new challenges, as I have never used a grinding machine nor made hominy (on my own) before. I made effort to document this process fully through photographs and extensive note taking. It has been a great learning experience. Wado (thank you)!

## The Seeds



Not too long ago, Indigenous ancestors of numerous tribal nations were uprooted from their homelands and placed onto barren reservations. As our ancestors, young and old, walked hundreds of miles and took with them what they could carry. These seeds survived these long walks as our ancestors starved. They suffered to protect these seeds because they knew that one day these seeds would nourish future generations. That is how precious these seeds are! And now we have the chance to taste the foods of our ancestors.

Dakota flour corn is, as it is named, a traditional variety of corn from the Dakota most appropriately used as a flour or meal. Its high starch content enables it to be baked into breads that nourished the Dakota ancestors for generations. As for the Dakota corn, the original seeds were actually gifted from an Upper Sioux woman and often used across multiple tribes prepared in what is called “pasdayapi,” also known as Dakota soup or Indian corn soup. This traditional variety is believed to have higher protein content and thus more suited to be made into hominy.

## Community Tasting

A community event was held within an elders' seed savers meeting held in the Dream of Wild Health (DWH) urban office building. About 12 community members involved in protecting and growing traditional seeds participated. The foods were presented 'family-style' for community members to sample. Commercial cornmeal and hominy were presented for comparison purposes. Two small containers, one with Dakota corn flour and the other with store bought cornmeal, were displayed to show the difference in quality and texture. As is custom, a spirit dish (a small plate with portions of every food offered in the meal sprinkled with tobacco) was prepared, sage was lit, smudging commenced, and a prayer was made prior to our miniature feast.



Sharing food often serves as a catalyst for conversation. Here we had an opportunity to clarify some misconceptions about gluten.



Dakota corn bread was featured on two additional occasions at the DWH farm for community guests, staff, and Garden Warriors (youth participants of DWH's summer program).



The photo on the right features a bowl of vegetarian chili, wild rice salad, and Dakota cornbread with homemade maple butter.

### Dakota Flour Corn Experiment



As in the name of this corn, it is used as a flour or meal. A grinder for grains and seeds is needed to make this so a WonderMill was purchased. I cleaned and assembled the machine according to instructions. Before it can grind anything, some grain must be sacrificed and run through the initial grinding to clear out any internal residue from the manufacturing process. To spare the limited amount of corn given to me, I used about 1 cup of mung bean plus 1 cup of the Dakota corn (instructions requested at least 2 cups of grain for the 'clean-out grind'). The mung bean used was purely out of convenience. It was what I had on hand. This product is advertised as being the "quietest grinder in the world" but, having no experience with a home grinder, I did not find it to be so. The high-pitched sound startled me so much that I shut it off in mid-grind out of fear it would explode. As instructed, for

each time I shut the machine off, I emptied any remaining kernels before switching it back on. Some of the corn-mung bean mix spilled so I added a cup of white rice into the mill. When finished, I dumped the sacrificed grain and wiped the grinder down with a dry paper towel. It took a little more corn to go through the grinder for all gray residues to come out. When the flour coming out showed no gray residue, I proceeded to grind about 8 cups of corn. Despite having 3 grind settings (pastry, bread, coarse) there appeared to be little difference between settings; flour produced is very fine compared to commercial cornmeal. I left it on coarse for the remainder of this experiment.

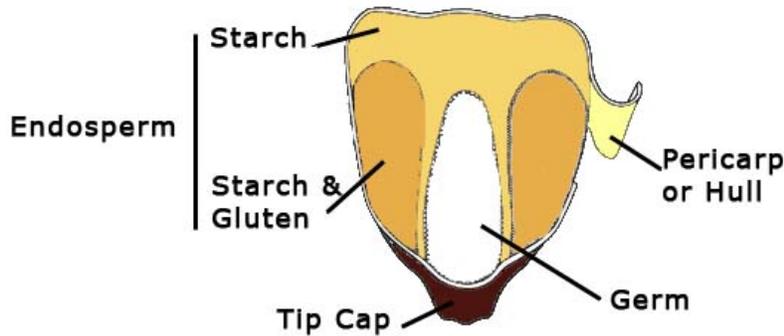
*Some 'technical' issues:*

If the tube is not pushed in all the way, air suction will be weak and the corn kernels will just sit in the hopper. When this happens, and you hear the sound become higher in pitch, shut it off according to instructions, empty out remaining kernels then try again. When this happened the first time, I emptied the machine and tried it with about 2 ¼ cups of white rice. The rice went through without any problem. It is possible that this machine is sensitive to large grains. I find it helps to add handfuls of kernels into the hopper as opposed to dumping the entire batch. Also the lid must be snapped shut completely. Even so, occasionally the storage lid has a tendency to pop off. It is wise to clear the counter area otherwise items will get a dusting of flour. It helps to hold your hand firmly on the lid to prevent it from popping off. Take note that the machine is strong and once turned on, it slides from the momentum so have this grinder placed away from the edge of any flat counter surface to avoid the risk of falling over.

Overall, this grinder will produce flour about double in volume to the grains added. This flour has a nutty aroma and, frankly, smells like actual corn (in comparison to commercial cornmeal). For about 2 cups of corn, I received about 4 cups of fine corn flour. On a positive note, this machine is extremely efficient and can grind several cups of corn in seconds. Not many people in the community have this grinder so it would benefit them if DWH produced the corn flour.



## Corn Kernel Anatomy and Shelf Life



From the image above, a kernel of corn is composed of several elements: an endosperm (starch and gluten), pericarp or hull, tip cap, and germ (note: corn gluten is not the same as wheat gluten). When preparing hominy, the pericarp or hull is removed by boiling the kernels in a high pH solution (either from hardwood ash, lye, or baking soda). The tip cap can also be removed after boiling but only for aesthetic purposes. Removing the tip cap does not affect nutrition or flavor.

The germ is of particular interest in this project because its presence affects the Dakota corn flour shelf life. The germ, also known as the “heart of the seed,” is essentially the embryo of the corn. It contains vitamins, minerals, and healthy unsaturated fatty acids. Unsaturated fatty acids, upon prolonged exposure to oxygen, inevitably become rancid. In commercial cornmeal, the germ is removed (aka: degerminated) to extend product shelf life. Because the germ contains most of the kernel’s nutrients, commercial cornmeal is ‘enriched’ with the vitamins and minerals lost in its degermination process. For this recipe project, the germ is not removed, preserving its nutritional value. As a consequence, our Dakota corn flour has a much shorter shelf life than commercial varieties.

The presence of the germ in the flour affects the texture. It is more ‘clumpy’ and moist where commercial cornmeal has a very dry and sandy texture. This flour must be used right away. A few online blogs claim that it can last anywhere up to 6 to 18 months. A potential alternative to refrigeration is canning the flour if a vacuum sealer is available.

**Side notes:** Never EVER wear a black shirt when grinding!

In addition, I was able to grind black turtle beans. 1.5 cups of dry beans yields about 2 cups of bean flour. This could be useful in future recipes.

## Making Hominy

Hominy is a very old traditional food, going back thousands of years. It is often prepared around fall harvest season for winter storage and feasts. The fall season calls for warm hearty soups and stews with hominy. However, being at the tail end of spring/early summer, I needed to come up with recipes appropriate for the season. This provided an opportunity to showcase our sister hominy outside of the realm of soups and stew fare.



Traditionally, hominy is prepared using lye or wood ash. Both are difficult to obtain and lye can be dangerous to work with. However there is an alternative method. I went with the baking soda method. The idea is to use a method that is most accessible to the community. Baking soda is cheap and most people have some in their pantries. This recipe and instructions are available in Original Local book by Heid E. Erdrich that is actually sourced from Dream of Wild Health's cookbook. The recipe is as follows:

- 8 Cups Hominy Corn
- 3 HEAPING Tbsp. Baking Soda (I used almost 4 Tbsp.)
- Enough water (filtered) to cover corn with space for corn to swim when stirred.
- Stainless steel pot (baking soda will react to aluminum so no aluminum pots!)

Corn was sifted and picked clean prior to cooking. Baking soda dissolved in warm water was added before the corn reached to a boil (I don't know if it makes a difference to wait until water boils before adding the baking soda). This is a new experience for me so I recorded the color changes during the boiling process. Shortly after the water reached to a boil, the corn changed to a vibrant orange color. About an hour into cooking, much of the original color returned and the kernels swelled up considerably. I would say the corn tripled in size by the end, giving about 6 quarts of hominy.



I drained the hominy after approximately 3 hours of boiling. At first I thought the skin had not be properly removed. Again, this was new to me and the corn comes in a variety of colors. To play it safe, I added the hominy back into the pot; refreshed it with new filtered water and baking soda, brought it to a boil then let it cook another 30 minutes. At this point I realized the skin had literally melted off each kernel. I drained the hominy and rinsed it countless times. The skin came off with minimal effort but trying to get all the tips off was time consuming. However, I realized it's not so critical removing the tips as its removal serves primarily for aesthetic purposes. In total, Dakota hominy corn using baking soda takes about 3-3.5 hours of boiling with occasional stirring.

Dakota corn is well suited for hominy indeed. It has a nutty aroma and flavor. The entire kitchen smells kind of like popcorn or roasted corn. It has a firm yet tender texture, didn't fall apart, and the colors are lovely to look at. The recipe says to boil again after skins are washed off (to soften hominy). This hominy was tender enough to eat straight away. I experimented with a new recipe using chili and lime and found it to be a good flavor combination for hominy. I boiled the remaining hominy for about 30-40 minutes. I believe this final boil required less time since the prior boiling time was 3.5 hours rather than 3. So in total, from dry kernel to tender hominy using baking soda takes about 4 hours that is instructed in the original recipe.

While it takes considerable time to make, the amount of effort (particularly during the boiling period) is minimal. I was able to wash dishes, write notes, cook other dishes, and even leave the kitchen for short periods of time while the hominy boiled at a low simmer. Also, washing the hominy only took about 10 minutes or so (if we disregard removing all the tips).

From this experience, I can say that making hominy with Dakota corn is feasible, safe, and practical for the community. One person can spend an afternoon in the kitchen, boil some hominy, store it in bags in the freezer and have traditional nutritious food available anytime.

## **Recipes - Meaning and Purpose**

Once the base ingredients (corn flour and hominy) were prepared, it was time to put together a few recipes for tasting. The menu was discussed with DWH director, Diane Wilson. She expressed the importance of everyone sampling the foods to be able to taste the corn and demonstrate a unique variety of ways of utilizing these types of corn. For the tasting event, we compiled the following menu:

### Sister Dakota Flour Corn

1. Dakota Cornbread
2. Blueberry Maple Corn muffins
3. Cranberry Streusel Shortbread bars
4. Herbed Two Sisters Corn muffin

### Sister Dakota Hominy Corn

1. Sautéed Hominy and Black Turtle Beans with Chili and Lime
2. Hominy Blueberry Salad
3. Hominy Coconut Pudding

## **Dakota Flour Corn Recipes**

Cornbread was an obvious choice. It gave our community members a chance to experience the taste and texture of corn flour. There are many recipes for cornbread that typically use cornmeal. Since our corn is finer in texture, I saw this as an opportunity to really put our sister corn as the primary ingredient. See, cornbread recipes typically use a 1:1 ratio of cornmeal to wheat flour. This ratio ensures a soft texture that won't fall apart. With this Dakota recipe I used a Cherokee bean bread (duya gadu) recipe I have in my collection as a base. Instead of a 1:1 ratio, I increased the corn flour to 1 1/3 cups knowing it could 'handle it' and decreased the wheat flour to 2/3 cup. I later added an additional tablespoon of corn flour and wheat flour because the batter was thinner due to the higher moisture content in the Dakota corn flour. For those looking to reduce gluten in their diet, this recipe is a plus. It may even be possible to increase the corn flour ratio even further. That will be for future testing.

Another substitution includes maple syrup in place of honey. I try to maintain as many traditional ingredients as possible in these recipes and maple is traditional for Indigenous people from this region. All of the recipes except for the Cranberry Streusel Shortbread Bars (I'll explain why later) are sweetened with maple. The recipe does not specify a type of oil to use but, again, the purpose is to use as many traditional ingredients as possible. In addition, this sunflower oil was produced locally.

Along with the Dakota cornbread, I baked a second batch of cornbread using commercial cornmeal for comparison purposes. The Dakota cornbread baked beautifully. It needed an additional 5 minutes of baking compared to the commercial version. A notable difference was the Dakota cornbread puffed up more than the commercial one.

To demonstrate the versatility of the Dakota corn flour, I adapted the Dakota Cornbread recipe into two types: a savory and sweet version.



For the savory version, I developed a Two Sisters corn muffin recipe seasoned with cheddar, Dijon mustard, and fresh herbs. This was inspired from a recipe used at DWH youth program called Double Corn Muffins that was adapted from blog site Food52. The addition of Hopi Black Turtle beans (also grown at DWH farm) has cultural and nutritional significance. Corn, beans, and squash are known as the Three Sisters across many Native cultures and their stories teach us valuable life lessons on relationships, among other things. Unfortunately, I did not have any squash on hand to make it a Three Sisters corn muffin recipe but anyone who uses this recipe can easily make it so by substituting buttermilk for equal parts squash (any type) puree. Be sure that the puree has the consistency like yogurt. If it is too thick, scoop out a little bit of the squash and add some liquid (water, juice, or milk). In regards to nutrition, the combination of corn and beans provide complementary proteins in the diet.



For a sweet version, I added blueberries, increased the amount of maple syrup, and decreased the amount of buttermilk to maintain a thick batter consistency. Even so, the batter is looser than the original Dakota Cornbread recipe. Nevertheless, it baked up into light fluffy corn muffins studded with vibrant blueberries and a strong maple aroma. This version can easily be substituted for other seasonal traditional berries. This recipe is, indeed, versatile. I should add that I did not bake these in an oven so I do not have a recorded temperature or time for this recipe. I used a mini-muffin maker to make sample sizes. I would recommend looking at other corn muffin recipes as guides for time and temp. Another suggestion is to check muffins after some time and check by inserting a toothpick in the center of a muffin. Also, be aware of the smell. Baked goods release pleasant aromas when close to done. To be sure, it is done when the toothpick comes out clean.

### **Cranberry Streusel Shortbread Bars**



This recipe is adapted from website [fincooking.com](http://fincooking.com). The purpose for using this recipe was to demonstrate that corn flour could go beyond being made into cornbread. Its unique texture and moisture content enables it to be easily incorporated into other recipes. I substituted about 30% of the flour for the Dakota corn flour. This recipe was selected because shortbreads have a natural crumbly texture that corn flour has to offer. Also it uses cranberries, another traditional food. Maple was not used as a sweetening agent since its liquid state would have affected the texture of this recipe so standard sugar was used. Sugar in and of itself is not unhealthy when in moderation so I recommend this recipe be treated as an occasional treat to be eaten in small quantities.

## **Dakota Hominy Corn**

This hominy has a smooth texture and pleasant nutty flavor. Unlike commercial hominy from a can, this hominy does not have a salty bite. This is a quick dish that can be cooked up in minutes using already cooked hominy and beans. The amount for each ingredient and type of ingredients used are not so critical. The idea is to whip up a dish that is slightly spicy and a little tangy. How spicy and tangy is up to the cook. I used red bell pepper and fresh herbs for color and texture but these can be easily substituted depending on what is on hand. Red Bell pepper can be swapped for green, yellow or orange. Cilantro pairs well with chili but can be swapped for chives, scallions, or even parsley. Lime can be swapped for lemon or even vinegar.



Again, use what is available. Chili powder is the flavor warrior in this dish but it can be substituted for cumin, paprika, or coriander. In fact, all of these spices can be added together to make a more complex flavored dish. Just sprinkle a small amount, mix, taste then adjust as needed. This recipe is very flexible. Having the hominy and beans cooked in advance makes this a quick and easy dish to prepare that is filling and nourishing. The addition of Black Turtle beans makes this a complete nutritious meal. As long as the hominy and beans are cooked in advanced and stored in the freezer, this dish can be prepared in minutes; beating fast food or microwavable dinners any day.

## **Coconut Hominy Pudding**

This was an attempt to really think outside the box when it comes to hominy with the intention of staying appropriate with the warm season. A Brazilian dessert called Canjica seen on a blog from pinkbites.com inspired this recipe.



The idea of hominy as a dessert is a new one for many of us but it works considering that hominy has a neutral flavor. The original recipe uses quite a bit of dairy (milk and sweetened condensed milk). Lactose intolerance is common among Natives so I adapted and simplified the recipe keeping it coconut milk-based. Again, as long as the hominy is precooked, this dish is quick to prepare. It is essentially done when the hominy is heated through which takes just minutes.

Serve this warm or chilled and garnish with toasted shredded coconut for a satisfying crunch.

### **Blueberry Hominy Salad**



The primary purpose was to introduce the concept of hominy in a summer-friendly salad. This recipe was inspired and adapted from a blog ([blog.sanuraweathers.com](http://blog.sanuraweathers.com)) whose recipe also was inspired from a “Blues Crawl” dinner event the author attended where everything had a blueberry theme. Blueberries are traditional and healthy. The sweetness of the berries, bitterness from salad greens (especially if using arugula, dandelion, or kale), spiciness from fresh red onion, and a hearty bite from sister hominy makes this an attractive well-balanced dish. It’s incredibly versatile as well. Measurements do not need to be exact and can be adapted depending on personal preference. The most inexperienced cook can assemble a nutritious and flavorful salad; even better, a salad filled with traditional foods that would make our ancestors proud.

