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Chicos del horno: How Adobe Oven-roasted Corn Became a Local, Slow, and Deep Food

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Introduction

For well over a century, anthropologists and other social scientists have maintained a very strong interest in the food, cuisine, and foodways of Mexican-origin communities north and south of the border. This is to be expected given the world-class status of Mexico's many rich regional cuisines (Mintz and DuBois 2002, Long-Solís and Vargas 2005, Pilcher 2006) and the status of the country as one of the world's great Vavilov Centers – the biogeographical provinces across the globe involved in the original domestication of wild plants as agricultural crops (Nabhan 2008). The Upper Rio Grande watershed in southern Colorado and northern New Mexico can be considered to be among the northernmost extensions of this Mesoamerican "corn belt".

While interest has waxed and waned, the recent attention focused on studies of food justice, food sovereignty, health and nutrition, and local food movements has rekindled scholarly interest in the study of the persistence and revival of what is conventionally categorized as "traditional ethnic cuisine". This interest has also been stoked by Slow Food-USA, which launched the Ark of Taste project to promote the preservation of endangered crops and foods. In 2008, the Ark of Taste added *chicos del horno*, a Southwest regional food prepared with adobe oven-roasted heirloom corn to its list of endangered foods. My paper today is focused on this food, which is a highly threatened part of Southwestern Indo-Hispano cuisine. My own survey currently places the number of authentic producers of chicos del horno in Colorado at no more than one dozen, most located in Costilla County in the high altitude San Luis Valley.²

I have three objectives in this paper: First, I present an abbreviated agricultural history of *chicos del horno* that includes discussion of the origins and ethnobotany of the maize varieties used in historic and contemporary production. Second, I provide a detailed description of the labor process involved in producing chicos del horno. This includes a description of the contemporary agroecology involved in producing the heirloom corn and a description of the ethnogastronomy of the resulting dish – a recipe and other social and cultural aspects of the preparation and eating of chicos that qualifies it as a "deep" food. Third, I conclude by situating the recent revival of this endangered regional food in the context of food sovereignty/justice movements in Colorado and New Mexico acequia communities.

¹ The author expresses gratitude to Joe Gallegos and Cornelio Arellano for sharing their traditional and artisan knowledge of the production of *chicos del horno*. Thanks are also extended to Professor Mario Montaño of Colorado College for years of collaboration and exchange of ideas on the traditional foodways of the Mexican-origin people of the United States.

² The survey was conducted for the Sangre de Cristo Acequia Association and the Rio Culebra Agricultural Cooperative (RCAC) during the 2009 summer-to-autumn production season and involved face-to-face interviews with all known producers in Costilla, Conejos, and Las Animas counties. These producers are easily identified by sight because the adobe ovens are fairly large visible structures and they produce a distinct smoke and odor that knowledgeable observers can detect. The RCAC is involved in a purchase and distribution program with most of the commercial producers in Costilla County and provided additional means to identify producers. I know of two other non-traditional producers working out of Pueblo County but did not include them in the survey because they use a commercial hybrid corn for the process rather than the traditional family heirloom varieties.

I. Agricultural history and ethnobotany of maíz de concho

The origin of chicos del horno is not scientifically well documented but regional lore in northern New Mexico and south-central Colorado attributes the origin of the food to the ancestral Puebloan civilization and cliff-dwelling culture known by the Diné name, Anasazi, which translates as "the ancient enemy." There are numerous references to the role of corn in this ancestral civilization and several studies offer fairly reliable archaeological data to suggest that the Anasazi were clearly among the original practitioners of the art of roasting corn in fire pits or adobe ovens for winter storage. Citing the work of Watson (1961) and Zwinger (1993), Fleck (2010) notes the presence of roasted corn remnants and burnt pits at the Mesa Verde, Chaco Cañon, Bandelier, Hovenweep, and Keet Seel Anasazi sites in Colorado, New Mexico, Arizona, and Utah. Based on this archaeological evidence, Fleck offers the following description of the Anasazi process for preparing an early version of the roasted corn delicacy:

In August, fresh corn was gathered by the ancient ones to be roasted in fire pits or baked in outdoor ovens or stewed in boiling water. The first-picked corn was dumped into earthen pits with hot embers and sealed over with earth to steam all day long. At feast time, the pits were opened and hot steaming corn on the cob was served to all. After the first feast of summer, women ground the shucked and roasted corn placed in stone *metates* and pulverized with stone *manos* into a very fine meal...This fine corn meal was stored for winter use when it was made into corn mush or a thin gruel that was served as a hot drink to ward off the cold dampness of the cliff dwellings. (p. 1)

This description, while clearly fanciful and speculative, is largely borne-out by the most reputable archaeological studies (Benson et al 2003; Huckell 2009) suggesting that – without refrigeration or other means for long-term storage of perishables – the preparation of maize in this form of steaming or roasting and then drying was indeed very widespread and an understandable adaptive response by indigenous peoples to environmental conditions and technological constraints at the time.

The ethnobotany of the white maize used to make chicos del horno is still a matter of research in-progress and only a very few published sources are available. The Upper Rio Grande Hispano Farms study (1995-99), which I directed and was funded by the National Endowment for the Humanities (NEH) and the Ford Foundation, included what is likely the first scientific research on the white corn grown by acequia farmers in San Luis, Colorado. This study was done by plant geneticist Ralph Bertrand (*in-press*) of Colorado College in 1995 and found that the white flint corn used by Corpus A. Gallegos and his family in San Luis, Colorado to make chicos was highly in-bred (implying genetic purity) and shared morphological qualities and even genome sequences associated with ancient Anasazi corn remnants found at sites across the desert Southwest. The Bertrand study confirmed the oral lore of the area, which supposed that the white flint used to make chicos was originally from the Anasazi via the modern-day Pueblo Indians (Corpus A. Gallegos Interview, July 18, 1996).

According to Santistevan (2003), the specific corn variety used to make chicos del horno among the acequia farmers of Colorado and New Mexico is known as *maíz de concho* (see <u>Figure 1</u>). In this M.A. thesis, Santistevan identifies the scientific name for this variety of white flint as *Zea mays clibanus*. This is a unique heirloom variety of white flint corn and is also grown with *maíz de diente* so named because people say the kernels look like horse's teeth. My experience is that there are hybrid varieties that appear to incorporate morphological features one expects in dent or flour corn. One of our own heirloom varieties, gifted to us by Joe Gallegos of San Luis, Colorado, is what I would describe as a "floury flint" in that it can be used to make flour as well as chicos.



Figure 1. Maiz de concho from Almunyah Dos Acequias, San Acacia, CO. Sept. 2014. Photo by D. G. Peña.

The heirloom strain used by acequia farmers in the San Luis area is a short season, high altitude maize. The time from planting to harvest averages 75-78 days and the variety is adapted to the extremes presented by solar desiccation and diurnal temperature extremes at elevations in excess of 8000 feet (2438 meters). As noted earlier, the heirloom varieties indicate Anasazi origins with a highly "in-bred" genome and considerable allele variation. The variety is both drought and desiccation resistant. Seed stocks used in the San Luis-San Pablo-San Acacio acequia communities have been handed down across five to six generations and there are at least three to four principal horticultural lines – some with evidence of introgression from Hopi blue and Zuñi red flint maize, which are also popular across the entire Upper Rio Grande bioregion (the Hopi blue introgression is evident in the blue kernel on the cob appearing in the bottom center of *Figure 1* above).

II. Making chicos del horno: Agroecology and Ethnogastronomy

I have been unable to locate a detailed description of the labor process involved in the production of maíz de concho and the processing involved in converting them to the end product as chicos del horno. Indeed, as I did research on the labor processes associated with the production of this disappearing artisanal food, I noticed that most of the anthropological literature on the indigenous preparation of corn dishes focuses almost exclusively on *nixtamal* and not chicos. Nixtamalization, of course, is the process of soaking and then boiling corn in lime (or food-grade lye) added to water to separate the germ from the hull (pericarp). One of the few published references I have found for the description of the production of chicos del horno is a brief passage in Betty Fussell's lovely book, *The Story of Corn*. According to Fussell, "Cleofas Jaramillo recalled how they made chicos at her family hacienda in Arroyo Hondo, New Mexico, almost a century ago: first they roasted white unhusked corn in the oven, then they shelled and cracked the kernels on a metate and finally tossed them in a basket to 'allow the air to blow away the skin.'" (1994:190-91). This is really a very incomplete and inaccurate description.

In 2008, we had the first chicos del horno roast at Almunyah Dos Acequias, the home of the Acequia Institute located on a 187-acre historic acequia farm in San Acacio, Colorado. The field we used for the production of our maíz de concho is part of a string of historic acequia farms in the San Luis Valley irrigated with water from the oldest acequia in Colorado, the San Luis Peoples Ditch, which was dug out by hand in 1852. According to one of my mentors, Joe C. Gallegos, "The production of chicos, or roasted white corn, is an ancient practice that Indo-Hispano farmers developed by adopting the Pueblo Indian practice of cooking the corn overnight in adobe ovens." (Interview, September 13, 2007).

There are sixteen major steps, all highly labor intensive, involved in the artisan production of chicos:

- 1. planting,
- 2. irrigating,
- 3. cultivating,
- 4. harvesting,
- 5. stripping corn husks to promote even cooking and prevent scorching,³
- 6. soaking the corn in water prior to cooking,
- 7. building the fire (preferably with a combination of cedar and piñon),
- 8. feeding the corn into the horno,
- 9. sealing the door and rear vent and checking and plugging the oven for leaks,
- 10. steaming the crop overnight in the sealed horno,
- 11. removing the steamed corn from the horno,
- 12. stripping the remaining husks from the steamed corn,
- 13. drying the corn on racks for 7-10 days under the sun,

³ We recently (2010) started to skip this step, on the advice of another local mentor, and have found that leaving all the husks intact produces fewer losses from burned kernels and cores and also saves time and labor costs.

- 14. stripping the kernels from the cobs (a process called desgranando),
- 15. cleaning the chicos on a windy day or in front of a fan, and
- 16. packaging the chicos for sales or storing them for future use.

I should note that we do not harvest all the corn and a good portion is left on the stalks to dry for preservation as seed saving stock and production stock for the next season. The production of chicos is the epitome of "slow food." The entire process takes about two to three weeks as the horno production is repeated for each batch of freshly harvested corn. In 2008, we started late and planted our two-acre field of *maíz de concho* during the third week of June and our first harvest occurred in the first week of

September on day 74 after planting. As noted earlier, our heirloom corn is a rapidly maturing land race variety and is adapted to the high altitude, arid, and short-growing season environment of Colorado's high altitude San Luis Valley.

Growing and then harvesting the corn is only the beginning of the process and these first two steps are anything but simple. The corn crop on our farm, like that grown by most of the other producers on the San Luis Peoples Ditch, is irrigated with the acequia method (Figures 2 & 3). This involves flood irrigation and relies on close cooperation with neighbors and the ability to schedule the delivery of



Figure 2. Joe C.
Gallegos, fifth
generation farmer,
irrigates a field of
heirloom maize,
bolita bean, and
Mexican calabaza
at his family's
Colorado
Centennial Farm in
San Luis, CO. June
2013. Photo by
D. G. Peña.

water in a timely manner. Water delivered a week late can spell disaster or reduce productivity. In this



Figure 3. Acequias are used to irrigate heirloom corn-bean-squash milpa at the Corpus A. Gallegos Ranch, San Luis, CO. June 2007.
Photo by D. G. Peña.

sense, the production of chicos is as much as anything else an exercise in neighborliness and embodies the ethics of cooperation. Following the advice of my mentors, I prefer to irrigate around dusk (as the sun sets) since this means there will be less water lost to evaporation under the intense sun of our hot summer days at high altitude. Our maíz de concho can thrive with three irrigations during the two and a half months between planting and harvesting.

Another lengthy and labor-intensive activity on our "organic" farm is cultivation, or the "weeding" of the row crops. The initial cultivation of our heirloom white corn is mechanical and we use a refurbished 1954 two-row McCormick tractor-cultivator to clean out the weeds. This mechanical approach to cultivation also aerates the soil to an extent not possible

with hand labor and helps to create "space" for the corn roots to expand and, therefore, for the plants to thrive. The next two rounds of cultivation work are all done by hand as we do not use herbicides or pesticides on our polyculture *milpa* (multi-crop field). This is largely a matter of clearing *only* the weeds that are crowding the corn plants; we do not strip the fields bare of the "weedy" biomass, as it has known beneficial effects including the return of organic material to our soils, which replenishes the fertility of our fields. Also, some of the weeds are useful companions because they attract beneficial insects like ladybugs and pollinating honeybees. Some of the weeds in our cornfield are edible including Purslane (*Portulaca oleracea*), which is locally known as *verdolagas*, and Lamb's Quarters (*Chenopodium berlandieri*), which is locally known as *quelites* (Montaño 2005). Our more natural weed and pest management practices signify how the aim of the acequia farmer is never to "conquer" or "subdue" nature but rather to cooperate and cultivate a relationship with all the organisms in the ecosystem based on respect for diversity and the virtues of co-existence. This is why acequia fields are much more messylooking *refugia* for wild and domesticated biodiversity, especially when compared to the monoculture

crop circles of the mechanized center-pivot sprinkler fields that define the polka-dot uniformity of corporate agribusiness farms in other parts of the San Luis Valley (Peña 2005).

The corn harvest is also done by hand and is one of the most labor-intensive steps involved in the production of chicos. The timing of the harvest involves a great deal of skill and local place-based artisan knowledge. This is absolutely critical and comprises one of the most important skill factors or "trade secrets" involved in the production of high quality chicos: If you pick the corn too early, it will not have enough moisture content or fiber to make good roasted chicos. If you pick it too late it will have too much fiber and not enough "milk" to make for a tasty result. The corn must be at the right "milky" stage to be

harvested for good quality chicos production and the only way to know this is by going into the field and "pinching" a few kernels to see if the "milk" flows out with the correct viscosity, an apparently "subjective" assessment that can only come from years of experience. This fact – the reality of the skill required to truly know when to harvest the maíz de concho – reminds me of the adage: "Manual labor is not menial labor." My experiences in the polyculture corn milpas of Colorado's San Luis Valley suggest that acequia farming requires a careful synthesis of skilled mental and manual labor – the unity of hand and brain.



Figure 4. Maiz de concho from Almunyah Dos Acequias is prepared for overnight roast in a home-made adobe horno at the Quintana home, San Luis, CO. Sept. 2014. Photo by D. G. Peña.

The roasting of the corn is another all day and overnight

affair (<u>Figure 4</u>). Removing and preparing the roasted chicos for the drying racks, or in some places the lacing together of the cobs in *ristras*, takes another full day (<u>Figures 5-6</u>). *Desgranando* and cleaning the chicos is yet another labor-intensive task (<u>Figure 7</u>). There can be no rushing of chicos production.



Figure 5. The author removes roasted chicos from horno before the husks are stripped and the cobs laid out under the sun to dry. Quintana home, San Luis, CO. Sept. 2014.
Photo by D. G. Peña.



Figure 6. Bare cob chicos are spread out on top of raised screens or canvas to dry under the sun for 7-10 days. Once dried, the kernels will be stripped from the cob and then cleaned up of plant residue on a windy day. Quintana home, San Luis, CO. Sept. 2014.
Photo by D. G. Peña.



Figure 7. Desgranando los chicos. The author uses a home-made machine to strip the kernels from the roasted chicos cobs. A few remnant kernels must be stripped by hand. This machine was adapted by another local farmer and he calls it adesgranador. Cornelio Arellano Home, Cuba neighborhood, San Luis, CO, Sept. 2014. Photo by E. H. Peña.

More significantly, the process is not just an agricultural production task, it is a cherished and time-honored social event.

The production of chicos del horno is usually a family or community affair and cannot proceed without a good amount of help. In 2008, a dozen youth from the Sembrando Semillas (Planting Seeds) project of the New Mexico Acequia Association, Las Comadres de San Luis, and the Acequia Institute, joined us in the harvest and prep work before the roasting. Friends and neighbors also pitched in. It was an example of the labor of love and the love of collective labor. The process engages the entire community in the

production of our local heritage food ways and provides a means to mentor and educate local youth on the knowledge, skills, and virtues of slow foods.

The preparation of the chicos for consumption is a relatively simple affair but involves a wide range of original family recipes and preferences. The most popular recipe involve the preparation of a simple winter stew with four main ingredients – the chicos, a whole onion, water, salt, and a meat, which traditionally involves elk, venison, or lamb but in more contemporary times has shifted to the use of pork ribs or chicken. Of course, there are now some vegetarian versions. All of these recipes are usually flavored with *chile caribe*, which is itself another traditional preparation although some recipes will call for the addition of an old regional standard, a pinch or two of Chimayo red chile powder. In a forthcoming book, Joe C. Gallegos (in-preparation) offers this bit of wisdom about the deeper meanings of the work and ritual of making of chicos del horno:

When chicos are being cooked, friends and neighbors appear out of the woodwork. The friends are always helpful and they enjoy the fire and the social events that occur for weeks around chicos preparation...When the morning arrives the most exciting time is about to happen, the opening of the mighty horno. The opening is the moment when we all find out how well the fruits of our labor turned out...The noisy and expectant crowd anxiously waits to taste the cooked ears. The corn is husked and the golden corn that is well-cooked tastes like smoky burnt and honey-kissed earth.... After husking and racking, then day winds down with an all-evening social event with friends that have gathered and worked since morning. Chico roasting has become a great excuse to have a party. But this is not just a party, any more than corn-on-the-cob is chico. When chico season starts, many of my far away friends and family trek to the ranch to socialize and work with the acequiahood and good music, libation, a recounting of the year's events, fill the air. This is the social event of the year and is as important as the annual ditch meeting in February, the annual ditch cleaning in April, and the feast day of our patron saint, San Isidro, in May.

In this passage, Gallegos captures the true spirit of chicos del horno: This is not just about a delicious food that is at the heart of acequia culture and our heritage cuisine. This is as much about conviviality – the art of living together and celebrating the fruits of our mutual aid and cooperative labor. Chicos del horno are a social vent and not just a skilled artisan labor process. In a different passage, he describes chicos as a "deep" food – a food that connects us to the deepest sense of place and history spanning thousands of years back in time to the first Anasazi horneadas at Mesa Verde or Chaco Cañon.

III. Chicos as local, slow, and deep food

The food justice movement brings several major elements together that are crucial to a resilient, ecologically sound, and socially just agricultural and food system: First, the food is produced locally by community-based farmers; Second, the food is organic, natural, and sown from heirloom seed stocks; Third, the crops are harvested by local farmers, families, and friends – this involves mutual aid, cooperative labor, and a strong sense of interconnected communities; and Fourth, local families have access to the food produced by farmers representing an investment in local sustenance and support for culturally-appropriate food ways and heritage cuisines.

The acequia farms of the Río Arriba bioregion are renowned and celebrated as examples of sustainability and resilience. They promote localism by sustaining local food systems and abiding by the limits of the "foodshed." They are based on the principles of the commons and are based on the use of land, water, and seed as collective resources. Acequia farms encourage mutual-aid and rely on traditions of cooperative labor (Peña 2003; Hicks and Peña 2003). Although most acequia farms are not officially

certified as organic, the farming practices are based on natural methods and most acequieros avoid the use of pesticides, herbicides or chemical fertilizers. We have a saying in the San Luis area: "We have always been organic, we are just too cash-poor to call it that." (Joe C. Gallegos Interview, June 8, 1998).

At the heart of the acequia farm is the farmer's knowledge of agroecological practices. This is place-based knowledge – a form of multigenerational, heritage – and the ethnoecological understandings of acequia farmers is now a widely celebrated part of our national heritage (see Peña and Martínez *in-press*). The study of place-based ecological knowledge, or traditional environmental knowledge (TEK), now enjoys widespread currency and is becoming more significant as we come to realize the value of adapting our food systems to the cultural ecology of locales. Local place-based food systems are also more compatible with the conservation of native biodiversity including the local diversity of native plants and animals and heirloom land race cultivars.

All these values – sustainability and resiliency, mutual aid and cooperative labor, common property resources, agroecological knowledge, and biodiversity – are recognized as elements of a worldwide grassroots social movement known as Food Sovereignty. The food sovereignty movement is an alternative to the globalized industrial food system that currently dominates the planet.

It is in this broader context that we can best understand the significance of the revival of the chicosmaking tradition. The production of chicos del horno is part of the current organizing work taking place across numerous acequia communities in the Upper Rio Grande bioregion, which focus on efforts to rebuild local food systems that can respect and nurture our own heritage cuisine. This is done with full awareness that a return to healthier eating will contribute to more positive health outcomes and reduce the high rates of obesity and associated illnesses like diabetes that are becoming too widespread among the Chicana/o populations of Colorado and New Mexico. The production of chicos reaffirms our local autonomy, both in terms of the self-governance of our acequias, the local water democracy, and in the sense of the capacity for environmental self-determination through reliance on our own seed, land, water, labor, and knowledge to produce healthy natural foods. Chicos del horno are not just a slow and local food, they are also a deep food – a food that connects the present to ancient histories and germplasm that has been nurtured and saved and planted and harvested for hundreds of generations by our indigenous forbearers. Protecting and promoting local, slow, and deep foods is a paramount challenge given the threats posed by genetically-engineered corn and other biotechnologies that embody a capitalist and industrial paradigm that threatens not just biodiversity but cultural survival and resilience as the basis of local self-governing acequia communities.

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