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# Conserving Millet with Potash : Towards a Dogon Epistemology of Materials

*La conservation du mil par la potasse. Vers une épistémologie dogon des matériaux*

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## EDITOR'S NOTE

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## Preparing food for conservation in rural Dogon land

Preserving crops and cooked food remains a daily challenge for Dogon rural communities of the Tengu Kan linguistic area in Mali, West Africa. In the absence of modern technologies and affordable pesticides, the vast majority<sup>1</sup> of Dogon men and women of the village of Kani Kombolé resort to locally developed techniques involving ash and potash as a means to overcome daily and long-term conservation issues regarding millet (*Pennisetum glaucum*), a subsistence and staple crop<sup>2</sup> (Figure 1). The Sahelian weather sees long period of chronic drought along with sporadic heavy rains that remain unevenly distributed in space and time. In the Dogon region, soils continuously become impoverished and eroded, making millet cultivation<sup>3</sup> increasingly tedious while scant harvests do not always suffice to feed a growing population (Gado 1993; Jolly 2004; Douny 2014). In addition, pests such as insects and rodents cause pre- and post-harvest threats that imperil the viability of millet, the conservation of which is a key determinant for the Dogon's survival. As Dumestre (1996: 689) points out: "Mali is a country where hunger and above all, the fear of hunger are still existing and unbearable realities<sup>4</sup>". In this context,

preserving food enables the population to forestall poor harvests and the dearth of food, to ensure future crops through the conservation of selected seeds and to guarantee the daily availability of food (Sigaut, 1982). The most effective traditional conservation techniques regarding millet that form local heritage knowledge involves ash and its transformation into vegetal salt or potash. Millet stalk ash allows for the conservation of millet spikes and grains in clay granaries, while millet stalk potash acts as a food preservative when added in daily cooked dishes such as the Dogon's *ein nian*, a millet-based meal. The term potash (*ein* in the Dogon Tengu dialect) refers both to the active property of ash that is defined by the Dogon as an intrinsic 'force' (*panga na*)<sup>5</sup> and to the matter resulting from the transformation of ash. This alkali salt is produced from leaching hardwood ash (*dogne*) or in this case, millet stalks. Ash and potash produced from these materials are alkaline matters that, in addition to preserving foods, also cure illnesses, neutralize poisons and witchcraft, flavour meals and fertilize soils. Furthermore, ash and potash play an important role in transforming raw materials: they are used for unreeling indigenous silk, dyeing cloth with indigo or fermenting adobe to build houses and granaries. Therefore, the benefits of these overarching and generative materials that are produced by older Dogon women are multiple and they pervade many aspects of Dogon daily and ritual life. Finally, potash is also largely produced by the Rimaabe (Fulbe) women of the Seno plain and of Western Burkina Faso where I was also able to document the making process<sup>6</sup>.

1.



Pearl millet (*Pennisetum glaucum*) consists of tiny, compact, ovoid grains that develop on a spike measuring from an average of 20 cm to 90 cm in length. This subsistence cereal is extensively cultivated throughout the Sahel where it grows relatively fast in extreme weather conditions with temperatures over 40 degrees Celsius, and a short rain season characterized by sporadic rainfall. In the Sahel, millet can grow within a period of 140 days on acid and unfertile soils that have a low capacity for water retention.

**PHOTO BY LAURENCE DOUNY**

- 1 In this paper<sup>7</sup>, I propose an ethnography of techniques used for the conservation of millet by focusing on technical processes of food conservation by ashes<sup>8</sup>, in the light of three operational sequences for transforming and preserving millet with ashes and potash. These sequences highlight the production of ashes and potash, the symbolic and practical conservation logics based on storing millet spikes and grains with ashes in a clay granary and on cooking millet-based dishes with potash. Through these operational sequences, I show what happens when Dogon men and women prepare crops and food for conservation by highlighting the transformative processes operated by fire. I thus emphasize implicit forms of meaning concerning the practical and symbolic logics of preserving millet, including magic, as part of the Dogon definition and practice of conserving and aspects of ritualization of techniques. Within an epistemology of materials, I assert that a key element to our comprehension of the Dogon's traditional techniques for the conservation of millet is their understanding of ashes and potash's material efficacy. This notion rests first of all on men's and women's knowledge of the material properties of ash and potash, which they refer to as millet's internal 'force' (*panga na*). According to Zahan, this widespread African belief rests on the principle of a transcendental force that lies in all foodstuffs and that is independent from their physiological force (Zahan, 1995: 114). Second, the notion of material efficacy concerns the Dogon's interpretation of the mechanism of transformation of ash, which involves dynamic material relations between the multiple parts of the millet plant (spikes, grains and stalks) that are transformed. Finally, I conclude on the impact of conservation on millet and on the people who consume it, by highlighting aspects of the temporality of millet, aspects of the social context of the Dogon's technical conservation system and its logic based on the recycling of this cereal which overall improves over time owing to ash and potash, and which symbolically never ends in the granary or in the eating bowl.

## What happens when one prepares food for conservation: some methodological background

Preserving matter in the Dogon region forms a technical system involving actors, gestures and body movements, the matter acted upon, the energy deployed to perform the task, tools, skills and expertise... but also choices, representations, knowledge and beliefs (Lemonnier, 1992: 5-6) that emerged within a specific socio-historical context and are constantly developed or adapted to new circumstances. Conservation techniques for storing millet in clay granaries which are specific to Dogon men and for preserving cooked food through the production of a preservative – a task carried out by women – are embodied in men's and women's bodily and sensorial experiences of materiality. Preservation as a "technique of the body" (Mauss 1973) is defined through people's daily engagement with meaningful materials and substances. As they are ritualized, these techniques of the body are entangled with people's relation to the social and invisible world (Douny, 2014). By taking into account indigenous conceptions about conserving foodstuffs, I envisage the material dimensions of storing and transforming millet and millet stalk ashes as a material practice. I define this as a combination of embodied actions upon matter, upon people and upon the invisible world. Conservation techniques are called *danagou* in the Dogon Tengu dialect, a term that translates as to 'place something in good conditions in order to make it long-lasting'. These practices are part of

an enduring ancestral heritage of knowledge, usages, customs and practices described by the Dogon as *atiembe*, that is: “what we have found with our ancestors”.

- 2 Detailed observations of the Dogon’s conservation practice, grouped into operational sequences (preserving millet with ashes, transforming millet stalks into ashes and ashes into potash, cooking and preserving millet with potash) all highlight implicit forms of meaning that are not always or cannot be verbalized (Lemonnier, 2012). Silent forms of meaning include for instance, practical logics, indigenous perceptions of matter and beliefs about materials and their transformation. Operational sequences for such as the conservation of food through storing or the preparation of a meal with ashes, including the transformation of ashes into potash, reveal all the things that happen when Dogon men and women prepare millet for conservation. Therefore, from a methodological standpoint, a first level of meaning was uncovered through observing people’s transformation of materials as a technique or a process of efficacious actions upon matter (Leroi-Gourhan 1943-5; Lemonnier 1992) while preserving – i.e. storing and transforming – matter. These observations made it possible to identify ritual actions and thus symbolic meanings. On a second level, the collection and examination of the semantics of significant local terms referring to the tools, actions, materials and substances that form a Dogon conservation system, contributed to refining my understanding and analysis of techniques. On a third level, these observations supported by linguistics and semantics were complemented by semi-structured interviews to display on the one hand the full meaning of the practical and magico-religious logics of storing and conserving cereals and their transformed forms, and on the other hand the Dogon’s epistemologies of materials and concepts of material efficacy that as I argue are central to our understanding of Dogon conservation techniques. Material efficacy is defined as one of the intrinsic properties of materials such as the millet plant, that the Dogon conceptualize in terms of soul or spiritual principle (*kine*) (Jolly, 2004: 186), a vital breath (*kirin dogoro*) that gives people vitality (making them breathe and stay alive) and a force (*panga na*), in other words, their ‘value’, which can be affective or medicinal. This force remains in ashes and is concentrated in potash. Therefore, the *panga na* of ash and of potash is revealed through series of transformative processes involving fire, starting from the production of ashes by burning off millet straw, heating an ash filtrate that is used for cooking millet, as well as in the fermentation process triggered by potash as a preservative of cooked millet that revives the *kine* or soul of millet. By definition, transformation may refer to a process through which the shape of a thing or person is altered, but according to the Dogon conception, transforming or *djaana* describes the action of ‘preparing’ in the sense of ‘cooking’ things with fire, for instance boiling or slow cooking. In the Dogon view, fire does not destroy but it transforms by bringing out the intrinsic force or properties of materials. Fermentation activated by potash is another transformative process that improves the texture and flavour of millet which is cooked into a thick porridge. According to Steinkraus (1995: 3-4), fermentation enables the reduction of cooking time and minimizes fuel requirements. It also enriches cooked millet with protein, vitamins and acids, and conserves it. An examination of the transformative processes occurring in the conservation of millet with ash can therefore help understand what matters such as ashes and potash are made off. In addition, this process brings to light what properties make these materials efficacious as they are understood by Dogon men and women within a set of material relations, for instance with millet grains and spikes. From this perspective, material efficacy (Douny, 2015) defines the intrinsic qualities and properties of ashes, and their capacity of action on millet,

people and sacred objects in preparing millet for conservation. Finally, the production of matter is embedded into social processes and relations (Drazin & Kuechler, 2015) within which materials are selected, transformed, consumed and conserved.

## From ashes to potash: the inside of materials

In the Dogon region the term 'potash' is often used interchangeably for any alkaline substance or matter that tastes bitter, triggers fermentation, strengthens the matter it comes in contact with, fertilizes it and either neutralizes it, and revives it or extends its life. A vegetal salt (*ein*) that is made from ashes (*dogné*), potash is described as a concentrate of ashes. Vegetal ashes are alkaline residues produced by burning wood, stalks or other parts of a vegetal. Vegetals and hardwoods in particular are naturally rich in potassium carbonate ( $K_2CO_3$ )<sup>9</sup>, and so is potash. In general, the composition of ash varies according to the type of vegetal or wood, to the parts of the vegetal used (leaf, roots, stalk, etc) and finally to the type of soil in which it grows, but also according to the temperature of combustion (Northrop and Connor 2017: 191). In the Dogon region, the ashes of freshly harvested robust stalks of millet (*niu kerou*) (Figure 2), full of pulp and sap, are used for preserving crops in earthen granaries and for preserving cooked foods. Similarly, ashes are rubbed into animal skins for tanning in order to prevent them from rotting. As pointed out by Issa, an elder of the village of Kani, the ashes of various plants are used to counteract the effect of poisons but also that of spells. Ashes from various parts of specific medicinal plants or even from animal matter are used differently according to the suspected poisonous element. For instance, the ashes of the embryo of an animal mixed with shea butter and massaged onto the forehead of someone who is persecuted by a sorcerer can instantly repel any malevolent actions. Similarly, Zahan (1995: 188-119, following Labouret 1931: 285) states that the Lobi of Burkina Faso use ashes in rituals for stopping rain or abundant menstrual flows. Acting as a manner of a 'dry barrier', ashes – like smoke but also the heat in cooking and fire – enable one to avoid, repel or keep entities at a distance (Zahan 1995: 119). For instance, the smoke of medicinal plants works efficiently in curing illnesses as they are burned on hot charcoals and the fumigation (*uguru*) rises up on the body. It is also believed to have effects such as bringing luck, reinforcing charisma, protecting against evil spirits or breaking a spell, as the smoke enters the body and expels bad things through the pores of the skin. According to the Mande's conception, plants possess a soul (*ni* in Bambara language) and the smoke that comes out of vegetal combustion bears their force, which Pageard describes as their *nyama* and consists of a transformation of the personality of the vegetal (*tere*) that frees itself from its terrestrial medium (Pageard, 1967: 87). In the Dogon Tengu area, similar considerations apply to millet straw ash as dead matter that bears the millet plant's *panga na* force, which is released through techniques transforming straw into ashes and then into potash, as we shall see later.

2



Once millet has been harvested, stalks are left to dry out in the fields. The multipurpose stalks will serve as fodder for cattle. Stalks will also serve for building house roofs and granary compartments. The ashes of the most fleshy stalks are used for conserving crops and also pulses such as black-eyed peas in clay granaries and to conserve cooked foods when the ashes are transformed into potash.

**PHOTO BY LAURENCE DOUNY**

- 3 Since ancient times, potash has universally been used in alchemical processes. It is obtained through leaching wood ash and boiling the alkaline solution obtained (cf. video 1 and video 2). As with ashes, millet potash's efficacy is recognized in a great number of usages including for its medicinal properties. After giving birth, diluted potash or a liquid millet porridge containing a small amount of potash (*wourou wire*) is drunk by women to help prevent infections, as potash is said to function as an antibiotic. Fatoumata Lougué who has been producing potash over the past 30 years explains that: "there is a defensive substance in potash that reacts against any attack that damages the inside and outside (of things, of people). Potash can annihilate good or evil magical actions through contact (with something touched by magic). Potash consumption strengthens the digestive system because it destroys microbes, it eases digestion (...), purifies the blood (...). For us, potash gives a new lease of life, more strength. It is a remedy of great efficacy. We even say that it is a medicine against death (...) because potash cures, averts and protects". Hence, potash is recognized for its purifying properties on organs (parasites) and on the skin. Potash is also a remedy against gastric reflux, constipation and bloating when drunk diluted in water, as well as curing rheumatism, cough and tooth aches. Potash can recover food that has soured, such as millet cream and, to a certain degree, meat. [editorial note: about Video 1 and 2, see also note 6]
- 4 Hence, the specificity of potash is that it can instantly counter all that is maleficent and beneficial (Sidiki, 2003: 92). Potash can neutralize active substances in traditional medicines and counteract the power of shrines (Sidiki, *idem*). Places or items suspected of being poisoned by a sorcerer are also sprinkled with potash. Finally, when poisoned food has been ingested, potash can help regurgitate the morsel swallowed. There are many

other ways<sup>10</sup> in which ash and potash are used throughout the Dogon region, which include preserving cooked food and millet as I shall demonstrate now.

## Preserving millet crops in a granary with ashes: the role of men

Dogon earthen granaries are built by men before the start of the rainy season, using local materials collected from the village surroundings or from re-cycling a collapsed granary. Building materials include earth mixed with organic materials such as fonio straw (*Digitaria exilis*) and donkey excrement that helps waterproof granary walls. Stones and wood beams are used for the pillars and the structure of the granary and a conical thatched cover protects the structure from the heat and rain. The openings in the granaries where millet is stored are intentionally small to keep the container airtight and for reasons of privacy (since the contents of the granaries should not be seen by passers-by and must always remain the secret of the men of the family), to prevent theft (Douny, 2014: 173-175). While millet represents a family's wealth, a granary stands as a safe in which "any foreign body is prevented from entering". As Alpha, a 48 year-old farmer explains, the Dogon millet granary known as *go anran* embodies the 'image of the patriarch' as well as materializing Dogon social organization (Paulme, 1940). Granaries<sup>11</sup> are gendered as male or female in relation to their owner but also according to the nature of their contents<sup>12</sup>. Male granaries (Figure 3) that are over two meters high can contain between 80 and 120 baskets of spikes that make between 1,600 and 2,400 kg of grain (Bouju, 1984: 133). In the Seno Gondo plain, granaries are increasingly supplanted by storage rooms referred to by the French term '*magasin*' and made of mud bricks or stones, closed by a padlocked metal door. These secure structures provide a greater storage capacity but also prevent rare cases of fire that can be ignited due to the self-heating of dust<sup>13</sup>, and theft that is a direct consequence of food scarcity in areas ravaged by the drought. Conservation techniques in granaries are characterized by a series of operations to protect grain and seeds from pests and to store them in an adequate environment, in airtight containers (Multon & Sigaut, 1982: 1058). They are exclusively operated by the men of the household under the supervision of the patriarch who is also responsible for the daily management of the stock and the quantity of millet given to women to process and cook.

3



*Go anran* that embodies the image of the patriarch and stands as an element that unifies the family. It “feeds” an extended family that can comprise of an average of 25 people. The granary and its personification represent the backbone of the family. Having many full granaries represents the material core of a family and overall the patriarch’s capacity to provide for it.

PHOTO BY LAURENCE DOUNY

## Pragmatic and symbolic control over pests and other threats

As Multon and Sigaut (1982: 1057) wrote: ‘a grain store is an artificial ecosystem made by men, comprising of living entities including grain and its predators<sup>14</sup>. The Dogon’s granary architectonics and storage and conservation techniques have been developed in order to minimize post-harvest losses caused by rodents, fire and insects such as termites, ants and other species<sup>15</sup> that reappear at times when hygrometry is high, especially from May to October. The infestation often starts in the fields where most pests such as weevils remain invisible to the naked eye because they lay eggs in the kernels, consuming grains (*niu saa*) from the inside and paving the way for other pests (Guggenheim, 1978: 139, 146). More rarely, water infiltration and sanitary degradation can occur in a defective granary, causing grains to germinate and rot as well as promoting fungal growth. Fungi such as *Aspergillus* also develop after five years of storage, altering the taste of millet (Guggenheim, 1978: 139). Before storage in a granary, the container structure is carefully checked and the inside space is prepared for storing millet by first dusting all surfaces and corners. The granary is then disinfected through fumigation of plant materials such as the pulp of calabash (*Lagenaria siceraria*) or dry chillies and millet chaff. Ashes of millet stalks<sup>16</sup> or bran contribute to the conservation of



crops inside a granary<sup>17</sup> and are applied to the inside walls of the granary and on the floor to repel insects that colonize and devastate the grains. Leaves of bushwillows (*Combretum*) or neem (*Azadirachta indica*) are placed among the spikes for their pest-repellent odour. In addition, ashes symbolically protect millet stocks against witchcraft, for instance when a poison aimed at rotting the millet is introduced inside the container, or poison is applied to the grain to make people sick. It is worth noting that other magico-religious means are deployed to protect the harvest from malevolent entities, including medicinal plants and amulets that are placed in the foundations of a granary and at the four cardinal points, and an object called *go mêtêke* known as 'the soul of the granary'. A *go mêtêke* may be a statue, a collection of stones or any meaningful artifacts that are placed among the spikes, often close to the ground and thus to the foundations of the container. It also serves to attract the 'soul of millet' (*niu kine*) to come and rest in the granary and to ensure the fertility of millet. Lastly, when a granary is freshly built, the granary's owner proceeds to a libation of ashes of millet stalks or bran on top of the granary. This ritual is accompanied by prayers to request God's protection of future harvests, for the edifice to be protected against witchcraft, famine and thus shame, as Ambéré explains, but also to symbolically ensure the fertility of the fields that can be fertilized with stalk ashes<sup>18</sup>. From a technical point of view, the libation of ashes on the roof protects it from termites. Furthermore, a libation of millet cream is applied to one of the granary doors after storing the harvest, for a similar purpose and as part of a wider ritual context and annual celebrations. Hence, the magical protection of millet is part of the Dogon's logic and definition of conservation—as a symbolic means not only of preventing the disappearance of millet but also of symbolically maintaining its continuous presence in a granary. In this respect, magic and the invisible world are an integral part of Dogon reality and cannot be dissociated from the practical imperatives of the Dogon's daily lives, applied here for storage and conservation.

## Techniques for the storage and conservation of millet spikes and grains

When the harvest is brought in from the fields, infected residues of millet are destroyed in order to avoid contamination<sup>19</sup> or the proliferation of worms. Healthy spikes are stored in the granary (Figure 4). The building and its stock are inspected at least once a week to detect any sign of infestation. The storage technique consists of stacking the spikes tightly one next to another in order to avoid gaps between the spikes, to maximize storage capacity and overall to prevent rodents such as mice and rats<sup>20</sup> from sidling into the granary by entering through the base or the roof, to contaminate the harvest with their excreta and also provoke the collapse of the structure by gnawing entry holes. Men stack millet spikes<sup>21</sup> by placing the tip of the spikes towards the wall and the base that is heavier because of the remaining piece of stalk from where the spike was cut off, towards the center. In this way, the weight of the spikes stands in the central part of the granary and prevents pressure from being applied to the walls of the granary that could therefore collapse under the weight of the spikes. This stacking technique for millet spikes aimed at reducing interstitial space between spikes to prevent rodents from moving between them also allows a man to enter the granary without breaking the spikes. Hence, properly stored in a granary the doors of which are sealed with mud (Bouju, 1984: 133), millet spikes can be conserved for up to a maximum of 5 years. In the 1970s, Guggenheim

pointed out that while some farmers claimed that granary technology could conserve millet for generations without losses, others suffered serious losses of around 60% of their harvest (1978: 129).

4



Storing millet spikes in a granary - Male granaries are filled by a man who accesses the inside of the container through a tiny door located at mid-height and by standing inside the granary where he lays out millet spikes that are handed to him by another man standing outside. When almost full, he leaves the construction through the second door located above. Inside the granary, millet spikes are stacked very tightly to prevent mice moving between the spikes and damaging the harvest.

**PHOTO BY SALIF SAWADOGO**

- 5 When the harvest is slim and the amount of spikes is insufficient to be stored in a large granary, millet is processed and the grains are directly stored in the compartment of a female granary. As far as the grain's conservation is concerned, potash is widely used. Millet grains are either coated with ashes in a large basin in which it is mixed or they are stored in alternate layers of grains and potash. To keep the matter taut, the layers are compressed by foot. Potash is an effective obstacle against insect infestation, as it prevents pests from eating through grains and causing significant damage to the stock, enabling millet grain to be conserved for up to 3 years. Millet seed may be stored in a leather bag placed in a sealed clay pot inside a man's female granary. They may also be conserved in a clay pot<sup>22</sup> in which they are mixed with ashes (Figure 5), topped with ashes and a piece of cotton cloth impregnated with ashes that is covered with fonio straw (*Digitaria exilis*) and ashes, then sealed with mud and a layer of ashes (Figure 6) before being dried in the sun and finally placed in the compartment of a female granary. It is noteworthy that while ashes protect seed, potash neutralizes the living substance of millet seeds that as a consequence, will not germinate.

5



Millet grains for daily cooking can be conserved by both men and women as shown here, by mixing them with ashes before putting them in a clay pot.

**PHOTO BY SALIF SAWADOGO**

6



Clay pots offer a good alternative to conserve grains and seeds that are coated with ash. It is very important that these containers remain airtight, in order to conserve the grain efficiently. Therefore, the clay pot is sealed with fonio straws and a layer of ashes and mud that is topped up with another layer of ashes to protect against pests.

**PHOTO BY SALIF SAWADOGO**

- 6 Consequently, ash from millet stalks or hardwood trees in conjunction with other techniques of conservation applied as early as pre-harvest time, provide an efficient means to conserve millet harvests in earthen granaries. Losses are reduced as ashes avert pest infestation, mainly from insects such as ants and termites which generally damage the outer layer of millet heads (Guggenheim, 1978: 127), and more rarely from molds caused by a hot and humid climate. Rodents that may enter into defective millet granaries, provoking ruinous damages to the structure and to its contents, are mainly repelled through adequate techniques of storing crops and granary architectonics. Millet stalk ashes, which are locally produced and free, are less commonly used in the village of Kani where most people remain reluctant to use them because they are said to alter the taste of grains when cooked and to provoke diseases. Finally, plant and millet straw ash neutralizes the damaging effects of witchcraft but it can also devitalize the seed, while the ash that coats the grains can make them easier to process as it softens the millet grain's sheath as well as conferring additional flavor to the grain when cooked.

## The usage of potash in food conservation: the role of women

Dogon potash, *ein*, is mainly produced out of millet stalk ash<sup>23</sup> since it is abundant, especially in the Seno Gondo plain where millet is extensively cultivated and where trees

become increasingly rare due to desertification, climate change and intensive human activity. A vegetal salt, millet potash is a soft brownish paste shaped into small balls that is sold by women as a medicine, a condiment and a food preservative. Potash producers (*ein djaana*) are generally menopausal women (*ya na*) who are experienced in this dangerous activity that involves mastering, dosing and adapting fire. While producing potash, women are exposed to the sun, smoke and potash vapours for long hours, which results in damaging their sight (*guiri pogossa*) and causing them heart pain (*kene nouran*). Accidents such as third-degree burns often occur due to carelessness. Therefore, pregnant women and children who are more at risk of accidents are banned from approaching the production sites that are the fields close to the village where millet stalks are burnt off and the kitchen where ashes are transformed. As Aissata, a 67 year-old producer of potash says: 'Young women would waste their precious time' since potash requires around 24 hours to be produced', and that this amount of time not available to young women who are busy with various household duties such as tidying up the compound, preparing food three times a day, supplying the household with water and firewood and rearing children. Young girls from puberty until their second childbirth (*nien ourroum*) and women from their second childbirth to menopause (*ya sarouwa*) are forbidden from producing potash, but can burn stalks and sell ash. In the same symbolic vein, women who are menstruating are required to stay away from the cooking pot because potash is said to neutralize women's fertility. Finally, Aissata explains that producing potash requires one to own special knowledge and skills, including the quantities and volumes of substances, the matters to be used and when to adjust the heat as the matter transforms. Women acquire these techniques, skills and knowledge through long-term experience and the diligent observation of the transformation of matter.

## Transforming ashes into potash

Once millet harvests have been brought into the village to be dried out in the sun on flat roofs for up to 3 months - on the kitchen roof for instance where the smoke improves the spikes' conservation - millet stalks are cut off and laid out for drying. While a large amount of stalks are collected to be stored on top of shelter roofs, or in the trees as fodder for the cattle during the hot dry season, the remaining amount (agreed upon between a husband and his wife) is gathered in one pile in the fields near the village known as *laara*. Early in the morning, Dogon women set light to the stalks and leave the ashes (*dogné*) until they have cooled down (Figure 7). They then sweep and collect the ashes with a large calabash (*kadiu*) into an aluminium basin (*toguru*) (Figure 8). To prevent the ashes from being blown away by the wind, they sprinkle water on top of them. The ashes that remain on the ground will naturally fertilize the soil. In addition, ashes from firewood used for cooking, if not used for making potash, are then left in the field towards the beginning of the rainy season where they will improve crop yields and also increase millet and sorghum resistance to diseases.

7



**EARLY IN THE MORNING, DOGON WOMEN FIRE THE STALKS AND LEAVE THE ASHES UNTIL THEY HAVE COOLED DOWN. HOWEVER, THERE ARE VARIATIONS CONCERNING THE TIMING, DEPENDING ON THE WOMEN'S SCHEDULE, WEATHER CONDITIONS (WINDY OR NOT) AND HABITS: SOME WOMEN MAY PREFER TO BURN OFF STALKS AROUND SUNSET AND START COLLECTION WHEN THE SUN RISES.**

**PHOTO BY LAURENCE DOUNY**

8



**MILLET STALKS ASHES ARE SWEEPED AND COLLECTED IN AN ALUMINUM BASIN. THE REMAINING ASHES ON THE GROUND WILL FERTILIZE THE SOIL NATURALLY.**

**PHOTO BY LAURENCE DOUNY**

- 7 While some Dogon women prefer to store the ashes directly in a large clay pot (*ein teguirin*) kept in their kitchen for cooking purposes, others transform the ashes into potash as it saves considerable time. They may also buy solid potash elsewhere, especially in areas where at times millet crops fail and stalks are exclusively used as fodder and as a building material. Before starting to transform the ashes, women request the Gods' blessing to ensure the smooth running of the operations and to obtain a good quality product. In her explanation, Fatoumata also insists on the fact that this long and tiresome task requires her to be fit, concentrated and determined to see this wearisome operation through until completion. The first step in transforming ashes into solid potash consists of humidifying the ashes (*ein bidjesse*) for 24 hours. As shown by Fatoumata, in the second step, the highly water-soluble ashes are filtered (*tegueresse*) by using a system of two containers (Figure 9). The soaked ashes are poured into an enamel pot with a perforated base (*ein tete*) that serves as a filter and on top of which large quantities of water (*dji kunu*) are poured while the container underneath (*guênê*) collects the filtered liquid (*ein dii*) that is charged with salt (Figure 10) and "oozes" (*len lan len lan teguesso*) as she points out. This process known as lixiviation or slow percolation enables her to extract water-soluble particles such as potassium carbonate from ashes. In the meantime, Fatoumata sets up a fire on which she places a metallic cooking pot and in which she brings the translucent brownish alkaline solution to a boil (*ya tongue ko*), and which can however be directly used for cooking thickened millet porridge (Figure 11). As foam forms on the surface, she decreases the intensity of the heat by removing a glowing log from underneath the cooking pot when the liquid threatens to boil over. As water slowly evaporates, the filtrate thickens (*ein ya gode ko*) and progressively turns into a brownish paste (*ein kuroli kôgui*) (Figure 12), the colour of which varies according to the kind of stalks or wood that are used. As the potash thickens, Fatoumata draws my attention to the sound of the bubbling matter which she describes as *godo godo godo*, and which indicates that the potash is nearly formed. Using a spatula (*nian koho*), she stirs the thick paste (*ein kuru*) to prevent the matter from sticking to the walls of the cooking pot. After 4 hours of cooking, she then removes the pot from the fire and leaves the matter to settle and cool down. Finally, she scoops small amounts of potash that she leaves on a thin layer of ashes that she has sprinkled beforehand on the ground in order to let the matter dry and harden (*ein karamu*). She adds that the malleable matter may also be cooked again for another 4 hours until complete desiccation, to obtain a harder form of potash (Figure 13) that is easier to transport and sell on the market because of its compact form. However, she points out that regardless of the state of the matter, potash immediately liquefies at the arrival of the rainy season, when the air is charged with humidity. Hence, potash as a concentrate of ashes is obtained through lixiviation and desiccation processes that enable women to extract the millet plants' force (*panga na*) and therefore their main active principle: potassium carbonate or potash, an alkaline salt that enhances the taste of food, heals, conserves and neutralizes evil spells and poison.

9



**THE FILTERING OF ASHES, LIXIVIATION OR SLOW PERCOLATION PROCESS IS CARRIED OUT WITH TWO CONTAINERS: ONE THAT IS PERFORATED AND IN WHICH THE ASHES AND THE WATER ARE Poured AND A SECOND CONTAINER, HERE A CLAY POT PLACED UNDERNEATH, THAT COLLECTS THE FILTRATE.**

**PHOTO BY LAURENCE DOUNY**



10



**THE RESULTING ASH WATER IS EITHER BOILED TO OBTAIN SOLID POTASH, OR IT CAN BE USED AS SUCH TO PREPARE PORRIDGE.**

PHOTO BY SALIF SAWADOGO

11



**THE BITTER POTASH SOLUTION IS BROUGHT TO A BOIL. WHEN FOAM FORMS ON ITS SURFACE, THE INTENSITY OF FIRE MUST BE REDUCED IN ORDER TO PREVENT THE LIQUID FROM OVERFLOWING.**

PHOTO BY LAURENCE DOUNY

12



**THE MATTER THICKENS AND PROGRESSIVELY TURNS INTO A BROWNISH PASTE, THE COLOUR OF WHICH VARIES ACCORDING TO THE KIND OF STALKS OR WOOD THAT ARE USED. FOR INSTANCE, ASHES OF BALANZAN, SHEA AND BAOBAB TREE ARE WHITE WHILE MILLET STALKS THAT ARE VERY BITTER PRODUCE STRONGER AND DARK BROWN-BLACK ASH.**

**PHOTO BY LAURENCE DOUNY**

13



**POTASH, HERE SHOWN IN ITS DRY-SOLID FORM (RE-COOKED), HELPS TO LOOSEN BRAN AND MAKE PORRIDGE MORE DIGESTIBLE. POTASH ENABLES THE CONSERVATION OF PORRIDGE FOR 3 DAYS DURING THE HOT DRY SEASON AND 5 DAYS DURING WINTERING. IN COMPARISON, THICKENED MILLET PORRIDGE THAT IS POUNDED AND DOES NOT CONTAIN POTASH GOES OFF IN LESS THAN 24 HOURS. AN ALKALINE SALT, POTASH ENHANCES FOOD FLAVOUR BUT IS ALSO USED AS A MEDICINE, A FERMENT FOR BREWING AND TO REINFORCE THE STRENGTH OF TOBACCO POWDER.**

PHOTO BY LAURENCE DOUNY

## Making 'ein nian' millet porridge with potash

A popular Dogon proverb says that “the best spouse is the one that cooks millet porridge well”. This not only emphasizes women’s responsibility for cooking activities and more generally for maintaining the household, but also the Dogon’s great appreciation of millet. Transforming and cooking millet with potash forms part of a broader sequence of domestic tasks. This long and tedious operation requires the deployment of considerable energy, physical strength, concentration, skills and knowledge for processing large quantities of cereals, starting from grinding to vigorously mixing the porridge. The *ein nian* dish comes with a leaf-based sauce containing potash and is prepared for an average of 20 people, requiring between 5 and 6 kg of grain<sup>24</sup>. Once the millet has been winnowed using a calabash (*kadji pi*) to remove impurities such as dust, sand and tiny gravels, the grain is ground<sup>25</sup> on a rectangular flat stone (*nouné-in*) that is placed in a shadowy area of the courtyard away from drafts, using a hand-held elongated stone (sometimes a large flat pebble) (Figure 14). This portable technology is removed after the operation is completed and placed back against the wall of the owner’s house or in some cases gathered with other women’s mills. In this respect, Hamon and Le Gall (2013: 119) have demonstrated the relation between the use of a quern, the social context, the place where grinding activities takes place and the distribution of tasks amongst women in the domestic space in the Mynianka communities of Mali. Symbolic values are attached to the techniques for processing millet that ‘keep the millet alive’ when the cereal is pounded

using a pestle and a mortar, or 'kill' the grain when it is ground on a quern (Cartry 1987, 173 footnote 32; Jolly 2004, 126). According to this symbolic logic of millet transformation, the addition of potash to the dough revives the cereal and brings out its properties. In terms of the praxeology involved in grinding millet, Yabinta kneels down behind the stone mill with her knees touching the stone and places a handful of millet in its center. Yabinta grinds the cereal by applying strong pressure on the hand-held stone and moving it backward and forward on the flat stone. As Hamon and Le Gall describe (2013: 115), to operate the task, a woman "uses the full weight of her upper body to apply force on the grinder, not only using the force of her arms and shoulders". The repeated movement rapidly exhausts her, although she is used to performing the task and benefits from the help of the other women of the household who step in to replace her. The resulting flour (*puran*) that retains the cereal's germ (*nieke*) and bran (*yoro*) is collected in a calabash placed at the other end of the quern. It is sieved to separate the germs that need to be cooked first because they are harder (Figure 15). Before putting the cooking pot on three stones under which she slides a large log of wood wrapped in thin branches that will serve to start the fire, she invokes God by pronouncing the formula 'missimilahi', requesting his benevolence in conducting the task. Yabinta fills the pot with water near to boiling, by lighting up the branches with a bunch of incandescent straws. Then, she first pours the cereal germs into the boiling water and leaves them to cook for about 15 minutes, and adds to the liquid a lump of potash (about 15 gm) that quickly melts (Figure 16) and disintegrates the germs. Alternatively, as mentioned above, Dogon women may also directly use ash that they scooped from a 'pot ash' (*ein teguirin*) that they filtered on the spot. The resulting filtrate is then added to the boiling water<sup>26</sup>. When the foam instantly formed by the potash at the surface of the liquid has dissipated, she pours the flour into the cooking pot (Figure 17) and leaves it until it becomes completely submerged and rises. In the meantime, Yabinta prepares the sauce with water, powdered baobab leaves, chili powder, dried fish and a piece of dried potash. When the smell of *ein nian* emanates, she removes the lid and vigorously stirs it with a wooden paddle (*nian - pô*) to homogenize the thick yellowish paste (Figure 18) and leaves it to settle for 5 minutes before scooping out portions of porridge to fill the large communal eating bowl (Figure 19) or platter (*bandia*) in which the porridge is left to cool down for a good 15 minutes. *Ein nian* can keep in the absence of a fridge for 3 days during the hot dry season and 5 days during winter conditions thanks to the action of the potash, which also makes the porridge and its sauce more digestible, especially if the sauce is made from young leaves, for instance the sprouts of black-eye peas (*Vigna unguiculata*) that give the sauce a more slimy texture. Finally, in her explanation of *ein nian* preparation, Yabinta underlines the organoleptic properties of potash as a form of salt that enhances the taste and nutrient value of the sauce and of the porridge, as potash 'opens' the ingredients by softening and loosening the bran. Potash does not only allow for the full taste to be released, but it also alters the colour of porridge and sauce and improves their texture. *Ein nian* as a hand-eaten dish is felt and pre-tasted on the palm of the hand before being brought to the mouth and tasted by the papilla.

14



Millet grain is ground on a rectangular flat stone using an elongated hand-held stone. Grinding is a task that requires considerable physical strength and the women of the family often take turns to complete it. All parts of the grain, including the precious bran, are kept, making the dish *ein niām* very nutritious.

**PHOTO BY LAURENCE DOUNY**

15



Millet is a highly nutritious and energetic cereal, perceived as a 'living' material. Compared to any other crops and pulses grown on their land such as fonio, sorgho, groundnuts or beans, millet is the only cereal that can be consumed all year round without people becoming bored or sick. Furthermore, millet can be cooked as fried pancakes, couscous, or as a liquid and thickened porridge also known as *tô*. For these reasons, millet remains the Dogon's means of subsistence and a symbol of identity.

**PHOTO BY SALIF SAWADOGO**

16



**POTASH IS ADDED TO THE BOILING GERMS OF THE CEREAL THAT ARE ALWAYS COOKED BEFORE THE FLOUR TO ALLOW THE HARD MATTER TO DISINTEGRATE. POTASH ALSO PLAYS A ROLE IN SOFTENING THE GERMS.**

**PHOTO BY LAURENCE DOUNY**

17



**YABINTA POURS THE FLOUR INTO THE COOKING POT WHERE THE MATTER ABSORBS THE WATER AND RISES, GIVING HER TIME TO CHECK ON THE SAUCE.**

**PHOTO BY SALIF SAWADOGO**

18



The thick yellowish paste is vigorously stirred using a wooden paddle to homogenize the *ein nian* and make sure that all flour is cooked and risen.

**PHOTO BY SALIF SAWADOGO**

19



**EIN NIAN IS SERVED IN THE LARGE COMMUNAL EATING BOWL ON TOP OF WHICH A SMALLER BOWL OF SAUCE IS PLACED. IN THEIR CALCULATION, WOMEN GENERALLY PROVIDE FOR TWO EXTRA ADULT VISITORS AS A MEANS OF RESPONDING ADEQUATELY TO BOTH UNANNOUNCED AND REGULAR CIRCUMSTANCES. THICKENED MILLET PORRIDGE MUST KEEP FOR A COUPLE OF DAYS IN ORDER TO MEET THE NEEDS OF THE FAMILY AND VISITORS.**

PHOTO BY LAURENCE DOUNY

## The logic of conserving cooked food with potash

Given recurrent situations of scarcity in the Dogon region, the two forms of millet dishes (a liquid millet cream and a stiffened porridge) are alternated to balance the consumption of the cereal and therefore avoid squandering this important food resource. In most families, thickened porridge or 'tô' is cooked every three to five days. Millet cream made from reduced quantities of flour, and other meals made from beans and groundnuts grown by the women of the family, fonio and occasionally rice that may be grown by the men or remain affordable in some areas<sup>27</sup> are prepared more frequently.

- 8 When cooking *ein nian*, women bear in mind the number of family members to feed and always have food at hand for potential guests and overall to satisfy the appetite of demanding small children outside meal times and over the next couple of days. As stressed by Dumestre, in Mali, having food around is almost an obsession and eating well equals eating a lot (Dumestre, 1996: 690). Filling up one's stomach compares to filling up the body of a granary to guarantee the next day (Zahan, 1995: 113). The Dogon's sense of hospitality emphasises their concern for the wellbeing of their guests and can result in shame if the guests are not accommodated according to local customs, which include offering water to drink, a clean place to sleep and serving food shortly after the visitor's arrival. As Dumestre observes, a well-fed guest is a well-primed guest. Therefore, hosts always insist that their guests eat more (Dumestre, 1996: 690). But in case of a shortfall of millet, food is of course prioritized for children over visitors. *Ein nian* is consumed within



3 or 5 days as a reheated dish, but also recycled under a new form called *nian lougu* that consists of thickened millet porridge mixed with water. The water is drunk first before eating the porridge is eaten. This naturally fermented mix is said to give energy and to overcome vitamin deficiencies. Potash is responsible for this fermentation process that improves the organoleptic properties of millet over time, conserves the preparation and provides many health benefits. In addition, potash can also be used to recover a dish or for instance a sauce that might have deteriorated rapidly due to the climate.

## What conservation does to matter and to people

We have seen that the techniques of conservation of millet grain and of preparation of local dishes traditionally involve the use of ashes and potash. These techniques form a heritage requiring men and women's continual close observation of stocks and of transformation processes using fire and fermentation. They deal separately with the conservation of millet spikes, grains and seeds and with the preservation of one of its cooked forms. Therefore, within a patriarchal family model, conservation and the production of ashes and of potash are allocated based on gender, age and status. Operational sequences have enabled me to highlight transformative processes and implicit forms of meaning about millet conservation such as the use of magic, elements of ritualization of tasks and the Dogon's conception of matter. In this view, materials cannot be dissociated from the socio-cultural and natural environment in which they are produced and used (Kuechler & Drazin, 2015). The transformation processes reflect women's knowledge of the transformation of matter, and their constant monitoring of the matter's changing states. These processes also illustrate material relations between multiple parts of the millet plant, as ash and potash are produced out of the recycling of millet straw and used to conserve millet spikes, seeds, grains and their cooked form. In addition, operational sequences reveal deep local meanings and an indigenous epistemology of materials, where ashes and potash's material efficacy includes their medicinal properties and inherent force. In the Dogon's conception of materials, ash acts as a barrier against pests while potash neutralizes spells, poison, illness, shrines, seeds, etc.: that is, this substance deactivates and desacralizes (Sidiki, 2003: 92). When incorporated into millet porridge, potash improves its taste and digestibility and releases millet's health benefits by loosening its bran. Finally, in conservation techniques using ashes and potash, the linear temporality and finitude of millet are denied: ashes are believed to last endlessly in a granary, but men end this by emptying the container. Potash conserves cooked millet until people are replete and it makes millet improve over days. As a foodstuff and a medicine, potash extends life and counteracts death, but at the same time it can cause degradation and death. Hence, in a context of scarcity, conservation comforts men and women with the thought that millet will never end.

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## NOTES

1. A quantitative survey to determine the pourcentage of villagers using ashes or chemicals to conserve millet in granaries has yet to be done.
2. Issues about socio-economic aspects of millet production, harvest management and consumption have been extensively developed by Jacky Bouju (1984) and Eric Jolly's (2004) in their monographs.
3. In the Dogon region, millet is cultivated by hand by use of a hoe while soil is more rarely worked by an ox drawn-riding plough, for those who can afford to buy the technology and providing a relatively low yield of between 200 et 500 kg/ha. In 2016, in Mali 1,927 tones of millet were produced (FAO, 2017).
4. My translation from French.
5. For instance, donkey dung that is scattered on the fields before the rainy season to fertilize the soils is referred to as 'potash', a generic term that refers to the fertilizing property of the matter.
6. In this paper, I use two short pieces of footage that show the making of potash by Rimaabe (Fulbe) women to illustrate the lixiviation process and the change of state of substances into matter. This footage supports what I observed with Dogon women of Kani, except for the fact that the utensils for filtering ashes differ between women.
7. This research on millet conservation techniques through ashes and potash was developed from continuous fieldwork that was conducted in 2003-2004 and then in 2005 in the context of my PhD dissertation (The Wenner-Gren Foundation). Further data was collected between 2009 and 2012 on potash as a part of a postdoctoral fellowship (The Leverhulme Trust). This data updated in 2014 and 2017.
8. I previously studied the millet food system and the dimension of the social construction of hunger and eating habits that I framed within a historical account of food crises and famines in the Sahel and in the Dogon region (Douny 2014). These themes are also touched upon by Bouju (1984) and Jolly (2004) in their ethnographies on millet.

9. Ashes of hardwood are composed of several other components such as calcium carbonate, lime, potash, lye, and magnesium oxide, iron oxide, manganese oxide, as well as trace amounts of phosphate and micronutrients such as iron, copper and zinc.
10. For instance, making gun powder (*ossoro ein*), enhancing snuff tobacco (*sira*), boiling silk (*tome*), making an indigo dye bath (*gara*) and soap (*samara*), and fermenting millet beer (Dieterlen & Calame-Griaule, 1960: 74; Jolly 2004).
11. The granaries' structure, naming, size and compartment systems vary according to the regions and are developed according to people's needs.
12. For instance, a female granary, recognizable by its domed roof, is often divided into eight compartments that contain women's crops such as beans and groundnuts but also their personal belongings and cooking utensils. Other female granaries belonging to men may be used to store millet spikes of an exceptional quality for their seed and for rituals or simply to stock the remaining spikes of the harvest that do not fit in an entire male granary that is exclusively used for storing millet spikes.
13. Ashes of millet burned in a granary fire are thrown on the fields but not consumed as potash. They are known as *cassara dogné* (ashes of catastrophe).
14. My translation.
15. For instance, *Sitotroga cerealla* and *Sitophilus granarius* mainly found on the periphery of the stack of spikes, under the roof and along the walls (Guggenheim, 1978: 135). Also, *Trogoderma granarium*, *Corcyra cephalonica*, *Rhizopertha dominica* and *Tribolium castenum* and *confusum*, especially for grains stored in 'magasins' in towns and in warehouses (see for instance Guggenheim, 1978: 122, 146).
16. White ashes from balazan (*Faidherbia albida*), shea tree (*Vitellaria paradoxa*) or *nééré* (*Parkia biglobosa*) can also be used as natural local pesticide in conjunction with fumigation and other techniques.
17. Chemical alternatives such as 'Sijolan' (*Heptachlore* and *Thiram*) that is produced in Mali and has low toxicity to men and animal are used, along with hexachlorocyclohexane (HCH) based chemicals (Paranjape K. *et al*, 2015: 251; FAO, 1987). However, some insects genetically adapt to pesticides and become resistant (Sigaut, 1978: 55).
18. However, natural potash tends to be replaced by chemicals that can cover larger surfaces compared to vegetal ash that requires the production of a large amount of plant materials.
19. The most common contaminants found in harvested millet spikes gathered in bunches are dust and chunks of soil, straws and sticks of wood, tiny stones, leaves, broken seeds, husks, insects, animal hair and excrements, pieces of plastic, paper and metal, etc.
20. Rats and mice steal crops from the granary which they take to their burrows.
21. I have detailed elsewhere Dogon men's techniques of the body in storing millet in a granary (Douny, 2014: 169-173).
22. This type of conservation can be done by men and women as far as grains for cooking are concerned. Preserving crop seeds remain the task of men.
23. Ashes may also be produced out of *nééré* (*Parkia biglobosa*) and baobab trees (*Adansonia digitata*). Baobab potash is filtered but is not brought to a boil and is far less bitter than other kinds of ashes.
24. The other form of stiffened porridge is made from pounded millet.
25. Some women may prefer to decorticate (dehull) millet kernels first before grinding them. Grinding millet on a flat stone takes around 11/2 hours.
26. *Tô* made from a stiff pounded millet porridge can be made more acidic (acid PH: 0.4) by adding tamarind juice (Burkina Faso) or is made alkaline (Dogon region) only when millet is ground (Alkaline PH: 8.2) (Fao, 1987). See Kajuna (2001: 31) for PH details and geographical variations.
27. 100 kg of millet cost 18,0000 cfa as per 2017.

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## ABSTRACTS

In a climatically challenging environment, over time, the Dogon in Mali (West Africa) have developed technical strategies to cope with the scarcity of food resources and conserve millet, their subsistence crop. Millet stalk ash and potash, produced by leaching and heating ashes, are commonly used for conserving millet in granaries as well as cooked foods. In light of the anthropology of techniques, and by using operational sequences as a core methodology for field data collection and analysis, this paper explores the traditional conservation techniques used by Dogon men and women in the village of Kani Komolé, located in the Tengu kan linguistic area. This approach focuses on the material aspect of this technical system of conservation: preservation and transformation are considered as a set of material practices involving generative materials such as millet potash, which is produced out of millet ashes obtained from the combustion of millet straws and shaft. Potash is considered both as a property of ashes and as the material that results from their transformation. Through an examination of processes used for the transformation of millet – including the use of fire – this collection of operational sequences highlights implicit forms of meaning such as belief systems about materials, the ritualization of tasks and symbolic aspects of the conservation techniques, which all form part of the Dogon definition and practice of conservation. In this perspective, this paper documents the Dogon's conservation system, based on the social aspects of millet consumption and on the cereal's temporality. In addition, this system stems from a Dogon epistemology of materials, based on the Dogon's understanding of the material efficacy of millet potash – that is, this substance's inherent power as a set of active properties with relation to healing, enhancing, neutralizing spells and preserving. In this perspective, by considering millet's material relations within the broader daily social environment of the Dogon, this paper examines both what happens when Dogon men and women prepare food for the purpose of conservation, make it 'preservable', and the effect of potash on foodstuffs and on the people who consume them.

Vivant dans un environnement climatique contraignant, les dogons du Mali ont développé au court du temps des stratégies techniques afin de pallier au manque de ressources alimentaires et de conserver leur céréale de subsistance qui est le petit mil. Pour ce faire, les cendres de tige de mil ainsi que la potasse qui résulte de la percolation lente de ses cendres puis de la cuisson du filtrat obtenu, sont très couramment utilisées afin de conserver cette céréale dans les greniers en terre et les préparations culinaires, particulièrement celles à base de mil. Sous l'angle de l'anthropologie des techniques et en utilisant la chaîne opératoire comme méthode principale de collecte et d'analyse des données de terrain, cet article explore les techniques de conservation traditionnelles du mil qui sont déployées par les hommes et les femmes dogons du village de Kani Komolé situé dans la région linguistique Tengu Kan. En se concentrant sur la dimension des matériaux du système technique de conservation dogon, cette étude considère "conserver et transformer" comme des pratiques matérielles impliquant des matériaux génératifs qui sont la potasse de mil et la cendre dont elle est extraite et qui résulte de la calcination des tiges et du son de mil. Ainsi, la potasse est considérée à la fois comme une propriété de la cendre et comme la matière résultante de sa transformation. A travers une analyse des processus de transformation du mil notamment par le feu, les chaînes opératoires recueillies mettent en évidence des formes de significations implicites telles que des systèmes de croyances relatifs aux matières, la

ritualisation et les aspects symboliques des techniques de conservation qui entrent dans une définition et des pratiques de conservation dogon. Sous cet angle, il sera question de comprendre les logiques de conservation portant sur l'aspect social de la consommation du mil et de sa temporalité. Il s'agira également de définir une épistémologie indigène des matériaux qui repose sur une conception dogon de l'efficacité matérielle de la potasse, c'est-à-dire, la force intrinsèque de la potasse considérée par les dogons comme l'ensemble de ses propriétés actives qui permettent de soigner, d'assaisonner, de conjurer un sort ou encore de conserver. Par conséquent, en tenant compte des relations matérielles entre les différentes parties du mil dans un contexte social et quotidien plus large, cet article propose de voir tout ce qui se passe lorsque les hommes et les femmes dogons rendent conservable et de voir ce que la potasse fait aux matières et à ceux qui la consomment.

## INDEX

**Mots-clés:** cendres, potasse, efficacité matérielle, processus de transformation, dogons du Mali, greniers, conservation des céréales et alimentation, système technique, cuisine

**Keywords:** ash, potash, material efficacy, transformative processes, Dogon of Mali, granaries, cereal and food conservation, technical system, cooking

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