Journal of Humanities and Social Sciences Studies

ISSN: 2663-7197 DOI: 10.32996/jhsss

Journal Homepage: www.al-kindipublisher.com/index.php/jhsss



| RESEARCH ARTICLE

Heirloom Food Preservation Techniques and Languages of the Indigenous Peoples of Cervantes, Ilocos Sur, Philippines

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| ABSTRACT

In every society, culture remains to be the primary identity that distinguishes its members from other societies. Two of the ways in which culture is accentuated and manifested are the society's language and food or cuisine. As such, investigating them revitalizes, promotes, and preserves one society's culture. In such context, this study was conceptualized and implemented to document the indigenous food preservation techniques and language of the people of Cervantes, Ilocos Sur, Philippines. Through community immersion, interviews, observation, the study revealed that salting, smoking, drying, and fermenting are the common food preservation techniques. In salting, panag-etag and panag-asin are the two identified indigenous food preservation techniques, while panagtapa and panagkiing are the techniques employed in drying. Meanwhile, panagsuob is being practiced under smoking, and panagbubod is done in fermentation. The identified languages are those that are being used in each of the identified indigenous food preservation techniques. The study also revealed that the developed Cervantesian Indigenous Food Preservation Handbook is valid, useful, functional, and informative. Hence, the study concludes that the people of Cervantes still practice and preserve their indigenous food preservation techniques that may be extended to other people through seminars and training for cultural promotion and preservation.

KEYWORDS

Drying, Indigenous Peoples, food preservation techniques, food technology, salting, smoking

ARTICLE DOI: 10.32996/jhsss.2022.4.1.26

1. Introduction

In every society, culture remains to be the primary identity that distinguishes its members from other societies. As a collective product of the society, it includes members' beliefs, traditions, conventions or norms, attitudes, and ways of life that they use for survival. It also emphasizes the reality of the lives of the members. As such, one can discern and cope with the development and change through cultural awareness, understanding, and acceptance.

In addition, language is one of the reflections of culture. It serves as a tool in expressing one's thoughts and ideas. Also, it serves as the primary tool for the transfer and preservation of a society's culture. Lucidly, language is also an identity; the loss of language is the loss of one's identity. In fact, Ulibarri (1999) verbalized that language is the living current that joins the individual to a culture, a history, a vital reality; it gives the individual identity and quality.

Furthermore, culture is also evident in food preservation techniques. These techniques are considered to be indigenous knowledge that is being transferred from one generation to the other by words of mouth. Indigenous knowledge can be broadly defined as the knowledge that an indigenous (local) community accumulates over generations of living in a particular environment (Rÿser, 2011). Since this knowledge is transferred through language, it can be concluded that language and food preservation as indigenous knowledge go together.

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Food preservation involves the action taken to maintain foods with the desired properties or nature for as long as possible (Rahman, 2007). This is also done to maintain foods for their maximum benefits. The processes of food preservation continue to evolve and flourish. It is to note, however, that before the advent of modern and commercialized food preservation, our ancestors practiced traditional techniques of food preservation. Food and Agriculture Organization of the United Nations (FAO) (2013) underscored that this traditional knowledge is dispersed and associated with rural life and can be pictured as an organic relationship between the knowledge and its community. Accordingly, many traditional methods present the communities with accessible means to achieve medium and long-term food preservation, a more variable diet, and possess an important cultural identification value for communities. Finally, it forwarded that traditional practices encompass knowledge that may be especially valuable in times of crisis or adaptation to changing conditions.

Meanwhile, the Indigenous Peoples of Cervantes, Ilocos Sur, Philippines, have long practiced food preservation techniques. Unfortunately, young people are seemingly unaware of these techniques. Most often than not, the elders of the community and some adults are the ones engaged in food preservation. If asked about terminology or words and procedures on indigenous food preservation techniques, young people have little idea. Should these scenarios continue to persist, these legacies of their ancestors may be forgotten. It is to note that the preservation and processing of food are not as simple or straightforward as it was in the past; a number of new preservation techniques are being developed to satisfy current demands of economic preservation and consumer satisfaction in nutritional and sensory aspects, convenience, safety, absence of chemical preservatives, price, and environmental safety (Rahman, 2007). As such, studies that shall document the indigenous food preservation techniques and the lexicons of these techniques are imperative.

Enthused by the abovementioned ideas, this study was conceptualized to document the food preservation techniques and languages of the Indigenous Peoples of Cervantes as bases in the development of a handbook. This study could be seen in the light of preservation and promotion of the culture of Cervantes through inventory and description of the traditional food preservation techniques and the languages being used in these techniques as indigenous knowledge. After all, the value and relevance of indigenous knowledge towards the sustainability of human societies drive for its preservation (Botangen *et al.*, 2017). These food preservation techniques and languages constantly serve as reminders about the rich culture of the target speech community. This would also serve as an avenue for the Indigenous Peoples of Cervantes to realize and nurture the legacies of their ancestors that are inscribed in their food preservation techniques. It is to note that Cervantesian shall refer to the residents of Cervantes, Ilocos Sur following the addition of the suffix –ian to the name of the place, which is Cervantes, although some use Cervantenian. Finally, preserving these legacies would also serve as a challenge for them to continue speaking, practicing, and preserving them.

2. Literature Review

Indigenous Peoples (IPs) are considered aboriginal or native to the lands they live in (Botangen*et al.*, 2017). As stated in the Indigenous and Tribal Peoples Convention of 1989, people to be considered indigenous are either the descendants of those who inhabited a geographical area before colonization, or they have maintained their own social, economic, cultural, and political institutions since colonization and the establishment of new states. In 2016, the IWGIA (International Work Group for Indigenous Affairs) reported that 370 million people worldwide are considered indigenous, mostly living in remote areas of the world.

As IPs, the Igorots are historically differentiated from the majority of Filipinos because of their strong and successful resistance to colonization (Longboan, 2013). Their isolation and autonomy from centuries of Spanish colonial rule was a catalyst to sustain their indigenous customs, livelihoods, and access to communal lands throughout time (Bertrand, 2007). Thus, they become deeply rooted in their culture, and they have extensively continued their practices regardless of the new influences of modern societies (Botangenet al., 2017). The IPs possess indigenous knowledge that is pertinent in their community and to a nation's identity.

The preservation of indigenous knowledge has been recognized as a vital part of the sustainability of indigenous human societies in this age of globalization (Nakashima *et al.*, 2000). However, the participation of indigenous peoples in migration and their exposure to the mainstream elements of modernization have brought challenges (Rekhari, 2009). Botangen*et al.* (2017) argued that they had maintained community cohesiveness and unyielding connection to traditional culture, which they manifest through the groups despite being out of their traditional homes and living in a different society. Accordingly, this observation confutes the notion of the likely loss of culture due to their involvement in the activities of modernity. As such, the universal goal is the retention of culture among community members and its transmission from the present generation to the next (Harris & Harris, 2011).

Meanwhile, the Food and Agriculture Organization of the United Nations (FAO) (2013) argued that certain indigenous methods of food preparation (including food preservation) could also have a positive impact on biodiversity. Accordingly, these traditional practices encompass knowledge that may be especially valuable in times of crisis or adaptation to changing conditions. Knowledge of wild foods, famine foods, and food that grows in semi-arid environments is of enormous importance for the resilience of a

community. Also, the FAO noted that it is also important to appreciate that indigenous practices are not universal and that practices considered good in a particular location or time do not necessarily have to work in another, different setting.

Finally, the challenges in preserving indigenous knowledge and cultures like the language and traditional food preservation techniques are faced with various challenges. First, indigenous culture is overwhelmed through assimilation into a different dominant mainstream culture (SanNicolas-Rocca & Parrish, 2013). Second, mass media culture could gradually replace peoples' indigeneity considering exposure to predominant media and social media (Lieberman, 2003). Third, people are mesmerized by modern technologies, and this buries their traditional relationship with the natural world (Federici, 2015). Notably, the concern of losing indigenous knowledge revolutionizes efforts towards preservation (Botangen*et al.*, 2017). As such, this study was conceptualized anchoring on the principle that methods and techniques (of food preservation and preparation) should also be recorded in cheap reference guide-books, with drawings or photos of the relevant plants, the kind of habitat where they may be found, and the method of gathering and preparation (FAO, 2013).

3. Methodology

3.1 Research Design

This study employed a qualitative descriptive design. Lambert and Lambert (2012) stated that the goal of qualitative descriptive studies is a comprehensive summarization, in everyday terms, of specific events (food preservation in this study) experienced by individuals or groups of individuals. Accordingly, qualitative descriptive studies tend to draw from naturalistic inquiry, which purports a commitment to studying something in its natural state to the extent that is possible within the context of the research arena. Thus, there is no pre-selection of study variables, no manipulation of variables, and no prior commitment to any one theoretical view of a target phenomenon.

Since the main objective of the study is to foster understanding, effective communication, and unity among Indigenous Peoples of Cervantes, Ilocos Sur by documenting and describing their indigenous food preservation techniques and languages through observation and interview, the research design was found appropriate. After all, a basic or fundamental qualitative descriptive design is a valuable method in and of itself; it does not require the researchers to move as far from or into the data; and, does not require a conceptual or highly abstract rendering of the data, compared to other qualitative designs (Lambert & Lambert, 2012).

3.2 Selection and Study Site

The study was conducted in Cervantes, Ilocos Sur, Philippines. The researchers chose the locale because studies and literature pertaining to the place are minimal. Also, the need to document the food preservation techniques of the Indigenous Peoples of place as indigenous knowledge compelled the researchers to conduct the study. In choosing the participants, criterion sampling was utilized; hence, four criteria were set. First, they are Indigenous Peoples of Cervantes. Second, they are presently residing in Cervantes, Ilocos Sur. Third, they are practicing indigenous food preservation. Fourth, they are willing to participate in the study.

3.3 Data Gathering Instrument

In the collection of the data, observation protocols focusing on the food preservation techniques, procedures, and languages served as the main data gathering tool. It was utilized to surface and document the food preservation techniques and languages of the Indigenous Peoples in Cervantes.

3.4 Data Gathering Procedure

In gathering the data, the researcher sought permission from the office of the Municipal Mayor and the Indigenous Peoples Mandatory Representative (IPMR) of Cervantes, Ilocos Sur, Philippines. Using the approved letter from Municipal Mayor and IPMR, the researchers communicated to the respective participants and barangay officials. The target research participants were also located. Upon getting their consent to participate in the study, the schedules of observations and interviews were set. Furthermore, the observation protocol was constructed. It was used to encapsulate the salient observations, and it served as a tool in writing field notes. After the observation protocol was constructed, the observations of the demonstration of the food preservation techniques were conducted simultaneously. With the consent of the participants, the observations were audio or video recorded, respectively. After the observations, the researcher transcribed them to supplement and validate the field notes. Then, the researcher employed member checking procedures to ensure the truthfulness and trustworthiness of the data (de Guzman & Tan, 2007); this was done through follow-up interviews, returning the transcripts, and sharing the result of the findings to the participants (Azarias, 2022). Next, the outputs of the study were developed and validated by experts in the field of food technology. It is to note that the glossary was included in the food preservation techniques handbook. Finally, analysis of data was done and finalized.

3.5 Mode of Analysis

The audio and video recordings were transcribed to arrive at extended texts. The extended texts, together with the field notes, were subjected to spot checking before the cool and warm analyses were executed. In the warm analysis, significant statements that establish patterns were culled out. In the warm analysis, significant statements were proofread and analyzed to formulate categories and themes. To establish the validity, truthfulness, and trustworthiness of the emerging patterns, member checking procedures were done to ensure the truthfulness and trustworthiness of the data (de Guzman & Tan, 2007). Finally, the mean was used to describe the level of validity of the food preservation technique handbook.

4. Results and Discussion

4.1. Food Preservation Techniques

The observations and interviews with the participants highlighted the food preservation techniques that they are doing amidst the advancement in technology and ways of living. The transcripts of these observation videos and interviews supplemented by field notes surfaced the three major food preservation techniques in Cervantes, Ilocos Sur: salting, drying, smoking, and fermentation.

Salting. Across history, salting has been considered the oldest form of food preservation. During the immersions in the communities, three indigenous salting techniques emerged: *panag-etag* and *panag-asin*. *Panag-etag* is being done using salt or the salting process. For some people, they prick the pork/beef using a bamboo stick then hang the prick pork/beef in areas with low humidity areas like near the dirty kitchen, kitchen, and terrace of their houses. Some also place the salted meat under the sun or inside a jar. Last, the product of this technique is the famous *etag* that is usually used to add more flavor to local dishes like *pinikpikan* and other stew dishes.

Meanwhile, panag-asin is also similar to panag-etag in some places of Cervantes. However, some areas boil the meat before salting it. Unlike in panag-etag, the meat is not boiled; it is directly salted. According to the participants, this is usually done to preserve the meat's natural texture and taste, unlike in panag-etag that it is somewhat dried. It is to note that the salting process aims not only for preservation but also to get the desired sensory changes such as texture, color, and distinctive aroma and taste (Indiarto et al., 2021). The participants also noted that a product out of this technique is called *innasinan*, which has shorter shelf life than etag. Last, *innasinan* can either be meat or fish.

Notably, salting binds with water molecules and acts as a dehydrating agent in foods (Sadiku *et al.*, 2019). In this technique, salt serves as the preservative because salt can attract water, and water activity decreases from the material so that microorganisms cannot grow and reproduce (Elias *et al.*, 2020). It also acts as a selective inhibitor on polluting microbes such as proteolytic microorganisms and spores (Wijnker *et al.*, 2006). Similarly, it inhibits the growth of microorganisms while maintaining the shelf life of the food product (Albaraccin *et al.*, 2010: Andres *et al.*, 2005).

Finally, the participants believe that one should abstain from having sex with partners before making *etag*. Once the meat was salted, the participant mentioned that it should be left undisturbed to avoid spoilage. Interestingly, some of the participants believe that an *etag* will be spoiled if the person who made this ate his/her feces when he/she was born. Clearly, superstitions are a common phenomenon in human society, especially in Asian cultures (Chinchanachokchai *et al.*, 2017), like the Philippines.

Drying. Drying is also said as the earliest and most common technology used for food preservation (Al Maiman *et al.*, 2021). It is also said as the cheapest, especially when the sun is the technology used (Alwazeer & Örs, 2019). In the case of Cervantes, the communities rely solely on the heat coming from the sun. Through their sharing, two indigenous drying techniques were identified: *panagkiing* and *panagtapa*.

Panagkiing is an indigenous drying technique of sun drying. In this technique, the meat is salted before sun drying. Then, the meat is placed under the sun for at least four days or until it is dried. Notably, the meat is covered with a net to prevent insects from infesting the meat, which may cause food spoilage and rotting of the meat. Nonetheless, *kiniing* is the name of the product of this technique.

In panagtapa, the meat is stocked first in a container for one day until the salt is absorbed. Then, the meat is pricked using a stick. After that, the pricked meat is placed under the roof of the house, preferably in the kitchen, for a very long time until it is dried. This is also similar to panagkiing, but the only difference is that the meat is not placed under the sun until it is totally dried. The meat is also covered with a net until the drying is done, in which tapa is the name of the dried meat which resulted from this technique.

Interestingly, when doing *panagtapa* and *panagkiing*, the participants shared the meat should be placed inside the house before the nighttime so that the *anitos* (nature spirits or ancestor spirits) will not touch it, which shall cause meat spoilage. The following statements justify:

"Before it gets dark, we place the meat inside our kitchen because we believe that the anitos may touch it. If they touch the meat, it will be spoiled."

"All the meats should be placed in our house so that the anitos won't touch them. The meat will be spoiled if that happens."

Through these two indigenous drying techniques, it must be noted that the moisture content and water activity are reduced, which thereby control microbial growth and oxidative and enzymatic reactions to a minimal level that results in safe storage and increased product shelf life (Sokhansanj & Jayas, 2014; Beuchat *et al.*, 2013). Clearly, drying is effective because it removes much of the food's water (Sadiku *et al.*, 2019). After all, drying is an ancient technique of food preservation and for extension of shelf life of foods in which the heat and mass transfer process for removal of water by application of heat, from solid or liquid food, with the purpose of obtaining solid product sufficiently low in water content (Kumar *et al.*, 2015).

Smoking. Smoking as an indigenous technique among the participants is done through the smoke coming from burning woods. It is locally known as *panagsuob*, in which *sinnuoban* is the output of this technique. In this technique, the meat is placed on top of the dirty kitchen where the smoke passes through. The meat is also pricked using a long stick. This technique improves the drying process and adds antimicrobial agents that aid in preservation; certain foods exposed to smoke last longer than those not smoked (Sadiku *et al.*, 2019). Notably, a number of wood smoke compounds- like Phenol and phenolic acting as both antioxidants and antimicrobials- act as preservatives, and the absorption of gases or compounds by the foods gives the characteristics of color changes and flavor (Fellows, 2017).

Fermentation. As a food preservation technique and at some point a food processing technique, fermentation is locally called *panagbubod*. This is done using the local yeast called *bubod*. Fruits and rice are usually being fermented using yeast which is similar to the process of making wine. The fermented rice is called *binubodan*, which produces the local rice wine called *tapuey* or *tapey*. In some parts of the town, fermentation is a growing industry that is related to winemaking. The participants believe that one should not sleep with his/her partner during the first night after the rice or fruit is placed in a fermentation container called *putik* (jar).

Notably, fermentation is the microbial conversion of starch and sugars into alcohol; it transforms low acid foods into high acid foods, which gives them a longer shelf life (Sadiku *et al.*, 2019). It is a metabolic process in which substances undergo decaying in the presence of microorganisms to produce desired compounds that can be utilized for improving food quality and safety (Shrivastava & Samuel, 2019). Nonetheless, fermentation was primarily developed for the stabilization of perishable agricultural produce (Terefe, 2016).

4.2 Languages in the Food Preservation Techniques

The rich culture of indigenous food preservation techniques in Cervantes Ilocos Sur surfaced words that are both familiar and unfamiliar to many, even to some settlers of the town (Table 1). Through the observation and interviews with the participants, the meaning of the words emerged. They are defined based on their cultural significance to the identified food preservation techniques, namely *panag-etag*, *panag-asin*, *panagking*, *panagtapa*, *panagsuob*, and *panagbubod*.

Table 1. Languages in the food preservation techniques of Cervantes, Ilocos Sur

Words and Their Pronunciations	Definitions
Agngilin (verb) /agŋilin/	This means to abstain from doing something or from something.
Bubod (noun) /bpbud/	This refers to the local term for yeast.
Etag (noun) /ətɑg/	This refers to the cured and aged slab of pork preserved through salting.
gusi/kambong (noun)	This refers to a jar where food is placed and preserved.
/gusi/ /kambɒŋ/	
inasinan (noun) /inasinan/	This refers to the salted meat.
isigib/agkappos (verb)	This is the synonym for agngilin.
/isigib/ /agkappɒs/	
kalalaw (noun) /kalalaw/	This refers to a basket made out of bamboo.
Kiing (verb) /kiiŋ/	This means to dry something under the heat of the sun.
Kiniing/ Binilog(noun)	This is the byproduct of sun drying.
/kiniiŋ/ /binilɒg/	
Mabulak-e (adjective)	This means the food could be spoiled.
/mabuk-i/	•

malwak (adjective) /malwak/	This pertains to the completion of the fermentation stage of a product. This signals that the food is good to be eaten.
Nakusel (adjective) /nakusəl/	This is when rice is not fully cooked. This uncooked rice is being fermented in the process called panagbubod.
pespessen (verb) /pəspəssən/	This is the process of squeezing something.
putik/kuli (noun) /putik/ /kuli/	This is a jar where fermented rice or fruits are placed.
sagaten (verb) /sagatən/	This means to strain using a strainer or cloth.
siiten (verb) /siitən/	This is the other term for sagaten.
Sinuoban (noun) /sinuoban/	This is the meat that underwent the process of smoking or panagsuob.

4.3 Food Preservation Handbook

The output of the study is a handbook that contains the different indigenous food preservation techniques (IFPT), the glossary of words, and the recipes for each identified IFPT. The handbook on IFPT of Cervantes was evaluated in terms of its level of acceptability (Table 1).

Table 2. Level of acceptability of the IFPT handbook of Cervantes, Ilocos Sur

INDICATORS			\overline{x}	DR
Objectives				
a. The objectives are clear.			4.00	НА
b. The objectives are S.M.A.R.T.			4.00	НА
c. The objectives are comprehensive.			4.00	НА
d. The objectives respond to identified and pressing needs.			3.98	HA
e. The objectives are based on the abilities of the recipients/readers.			4.00	HA
submean			3.99	VH
Content				
a. The contents are based on the expected outcome.			4.00	НА
b. The contents are arranged logically.			4.00	НА
c. The contents are appropriate and relevant.			4.00	НА
d. The contents address the present context of why the study is conducted.			3.98	НА
e. The contents are congruent to the objectives.			4.00	НА
		submean	3.99	VH
Usefulness			0.00	
a. The output can be used at any particular time.			3.95	НА
b. The output is easy to use and implement.			3.88	HA
c. The output addresses the improvement of concerned people.			4.00	HA
d. The output defines the key concerns and objectives.			4.00	HA
e. The output can be used as guide and for cultural preservation and promotion.			4.00	НА
,	·	submean	3.97	VH
		Grand Mean	3.99	VH
Legend:			5.33	
Statistical Range	Descriptive Rating (DR)	Over	Overall DR	
3.50-4.0	Highly Acceptable (HA)	Very H	Very High (VH)	
2.50-3.49	Much Acceptable (MA)	High (H)		
1.5-2.49	Moderately Acceptable (MoA)	Moderate (M)		
1.0-1.49 Low Acceptability (LA) Low		w (L)		

Table 2 presents the level of acceptability of the handbook on IFPT in Cervantes, Ilocos Sur. As gleaned from the table, both objectives and content posted the highest submean rating of 3.99, which is described as *very high*. This suggests that the handbook contains items that are congruent to their intended purpose.

Under objectives and if taken singly, indicators stating that 'the objectives are clear, 'The objectives are S.M.A.R.T.,' 'the objectives are comprehensive,' and 'the objectives are based on the abilities of the recipients/readers' got the highest mean rating of 4.0 which is described as *highly acceptable*. The lowest mean is indicator d which states that the objectives respond to the identified and pressing needs; however, this indicator is still described as *highly acceptable* as supported by its 3.98 mean rating. The results indicate that the objectives of the output are attainable, appropriate, and feasible.

In the content, all the indicators, except indicator d, which is 3.98, posted a 4.0 mean rating which is described as *highly acceptable*. Though not all got a perfect mean rating of 4.0, all the indicators are described as *highly acceptable*. This suggests that the content of the handbook is suitable and appropriate. As such, the content of the handbook is responsive since the alignment of the objectives and content is evident.

Meanwhile, usefulness got the lowest mean rating of 3.97; however, it is still described as *very high*. This reflects that the handbook addresses the context by which the study was conducted. Likewise, the finding suggests that the handbook is practical and functional.

Under usefulness, indicators stating that 'the intervention addresses the improvement of concerned people,' 'the output defines the key concerns and objectives,' and 'the output can be used as a guide' got the highest mean rating of 4.0, which is described as *highly acceptable*. The lowest mean rating of 3.88, which is still described as *highly acceptable*, is observed in the indicator stating that the output is easy to use and implement. The mean ratings highlight the perceived functionality and suitability of the handbook.

Overall, the level of acceptability of the handbook is *very high*, as revealed by the overall mean rating of 3.99. This implies that it met the standards of the evaluators; it is valid, usable, and implementable. Clearly, the handbook contains content that is useful, viable, and feasible.

5. Conclusion

Every society possesses a rich culture that is expressed in different ways like language and food. This culture is a rich source of knowledge that needs to be documented and studied. In such context, this study was undertaken to make an inventory of the indigenous food preservation techniques and languages of the Indigenous Peoples (IPs) of Cervantes, Ilocos Sur as bases in developing a handbook for Cervantesian indigenous food preservation techniques. The study revealed that the Indigenous Peoples of Cervantes are evidently practicing food preservation techniques that are categorized as salting, smoking, drying, and fermenting. In addition, the languages in the food preservation techniques among Cervantesian IPs are those that are applicable to and reflective of their indigenous food preservation techniques, namely panag-etag, panag-asin, panagsuob, panagkiing, panagtapa, and panagbubod. Also, the developed handbook was found to be objective, useful, valid, and functional. Through these findings of the study, additional literature about the place is produced, which affirms that the culture of the place, especially its food preservation and language, thrives and survives amidst the passing of time and the advancement in human societies. Similarly, the developed handbook could be used in teaching indigenous food preservation techniques that are timely and relevant to cultural preservation and promotion advocacies in the country. Meanwhile, this study was limited only to identifying the recipes and languages in the identified food preservation techniques. As such, future studies may be conducted to provide additional data and by focusing and digging more on the cultural aspects like beliefs and norms associated with the identified preservation techniques. Nonetheless, the identified indigenous food preservation techniques may be further advanced through the integration of modern techniques that shall not in any way alter their unique identity and characteristics. Through training and seminars, the recipes in each identified preservation technique may be extended to more people for cultural preservation.

Funding: This research was funded by the LOCAL GOVERNMENT OF CERVANTES, ILOCOS SUR, PHILIPPINES in collaboration with the ILOCOS SUR POLYTECHNIC STATE COLLEGE.

Conflicts of Interest: The authors declare no conflict of interest.

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