**Diversitas Journal**
ISSN 2525-5215
Volume 9, Número 1 (jan./mar. 2024) p. 0395 – 0407
https://diversitasjournal.com.br/diversitas_journal

# The knowledge of university students from Santana do Ipanema about the use of tortoise in the diet

**ABREU, Lidvânia Silva[1]; LEITE, Tacielma da Silva[2]; TENÓRIO, Ida Vanderlei[3]; MAIA, Ana Paula[4].**

(1) 0009-0008-8838-3339; State University of Alagoas (*Universidade Estadual de Alagoas*), Santana do Ipanema-AL, Brazil, lidi.silva_al@hotmail.com
(2) 0009-0008-4365-843X; State University of Alagoas (*Universidade Estadual de Alagoas*), Santana do Ipanema-AL, Brazil, tacielma.bio.leite21@gmail.com
(3) 000-0003-4400-5594; State University of Alagoas (*Universidade Estadual de Alagoas*), Santana do Ipanema-AL, Brazil. ida.tenorio@uneal.edu.br
(4) 000-0002-6023-7080; State University of Alagoas (*Universidade Estadual de Alagoas*), Santana do Ipanema-AL, Brazil, anapaulamaia@uneal.edu.br



## ABSTRACT

Among the different human adaptive strategies for survival, those associated with food stand out, and the use of animals is one of the main permanent practices. Over time, the adopted food predilections have been transformed into eating habits and have been maintained over generations. The use of chelonians of the *Chelonoidis* species in human food is common in the Amazon region (North of Brazil), as well as in the city of Santana do Ipanema, in the State of Alagoas (Northeast of Brazil), where consumption is associated with cultural practices that are being forgotten over time. In order to raise the knowledge of the university population of Santana do Ipanema about the use of the tortoise in the diet, as well as the way this information is transmitted, the research was carried out among university students through a form available on the Google platform. A total of 108 students participated in this research. Regarding knowledge about the use of tortoise in the diet, 63% answered that they were aware of this habit and had acquired this information through grandparents, parents and uncles (36.76%). Only 8.33% of the participants had already consumed tortoise meat. Regarding the continuity of this feeding habit being passed on to the new generations, 67.60% answered no, but only 19.81% had the preservation of the species as a reason. Of the students who answered yes, 28.57% agreed with this habit because of food diversification, 37.15% because it is part of the culture and 9.71% answered for the preservation of the species. The transmission of cultural knowledge tends to be vertical and the consumption habit is low among the interviewed population.

**ARTICLE INFORMATION**

***Histórico do Artigo:***
Submitted: 01/02/2024
Approved: 26/03/2024
Published: 28/03/2024



**Keywords:**
*Chelonoidis*, culture, eating habits; preservation.

## RESUMO

Entre as diferentes estratégias adaptativas humanas para a sobrevivência destacam-se aquelas associadas a alimentação, e o uso de animais é uma das principais práticas permanentes. Ao longo do tempo, as predileções alimentares adotadas foram transformadas em hábitos alimentares sendo mantidas ao longo das gerações. O uso de quelônios das espécies *Chelonoidis* na alimentação humana, é comum na região amazônica (Norte do Brasil), como também na cidade de Santana do Ipanema, no Estado de Alagoas (Nordeste do Brasil), onde o consumo está associado às práticas culturais que estão sendo esquecidas ao longo do tempo. Com o objetivo de levantar o conhecimento da população universitária de Santana do Ipanema sobre o uso do jabuti na dieta alimentar, bem como o modo de transmissão dessa informação, a pesquisa foi realizada entre os estudantes universitários através de um formulário disponibilizado na plataforma Google. Participaram desta pesquisa 108 alunos. Em relação ao conhecimento sobre o uso do jabuti na dieta alimentar, 63% responderam conhecer esse hábito e tendo adquirido essa informação através de avós, pais e tios (36,76%). Apenas 8,33% dos participantes já haviam consumido a carne de jabuti. Sobre a continuidade desse hábito alimentar sendo passado para as novas gerações, 67,60% responderam que não, porém apenas 19,81% tiveram como motivo a preservação da espécie. Dos estudantes que responderam sim, 28,57% concordam com esse hábito pela diversificação alimentar, 37,15% por fazer parte da cultura e 9,71% responderam pela preservação da espécie. A transmissão do conhecimento cultural tem a tendência de ser de forma vertical e o hábito de consumo é baixo entre a população entrevistada.

***Palavras-Chave:***
*Chelonoidis*, cultura, hábitos alimentares; preservação.

*DOI: 10.48017/dj.v9i1.2946*

## Introduction

From ancient times to the present day, human beings have had to deal with different adaptive strategies for their survival, among these strategies, those associated with food stand out (Bezerra *et al.*, 2020). The feeding habits associated with the use of animals are one of the main permanent human feeding practices (Souza, 2004), and although there are several uses of fauna, the use in food continues to be the most expressive (Figueiredo; Barros, 2016).

The way we eat is related to biological and cultural factors. Biological through how this food is available in nature and how much energy will be needed to obtain it, as well as its organoleptic characteristics that will cause aversion or pleasure. From a cultural point of view, we can relate the environment in which the individual is inserted and the contact that this individual has with food and social influences (Jacob, 2021).

Living beings, in addition to the information inherent to their nature, are able to constantly incorporate data available in the environment through learning (Soldati, 2018). Learning is one of the properties that characterizes living beings, and what distinguishes the human being from other living beings is the fact that humans are a cultural species, since a large part of human behavior is determined through a cultural information system acquired through social transmission by specific processes such as imitation, teaching and language (Messoudi, 2011; Messoudi, 2018).

The acquisition of knowledge and cultural evolution takes place from a cultural compound formed by a set of individuals with or without some kinship relationship, who store a set of information, which in turn determines their behavior (Soldati, 2018). This information can come from the genetic base, from the individual production of knowledge and from transmission, the latter process being synonymous with cultural "social learning" (Laland, 2014; Soldati, 2018).

The Theory of Cultural Evolution is one of the theoretical fields that seeks to explain how culture evolves over time, based on the fact that the transmission of cultural information is fundamental for culture to evolve (Messoudi, 2011; Messoudi, 2018).

According to this theory, the transmission of cultural information can occur in different ways, such as: Vertically, when information is transmitted from parents to children; horizontally, when they are transmitted between individuals of the same generation; and obliquely, when they are transmitted between different individuals who do not have a parental relationship (Mesoudi, 2011, Santoro *et al.*, 2018).

Over time, the food predilections adopted by human beings have been transformed into eating habits, being perpetuated and maintained (Cascudo, 2014). This is because the

culture we belong to is intimately linked to the way we eat and our behavior towards food (Mintz, 2001).

The predilection or aversion for certain species in food depends on the texture, smell and taste of the meat as well as cultural patterns (customs, beliefs, myths, family traditions, habits). Despite the predilection for the consumption of mammals and fish, reptiles correspond to the third most consumed group. The meat of turtles and other turtles is considered a delicacy of the cuisine of the Amazon, the hunting and fishing of these animals has been going on for many generations (Rebêlo; Pezzuti, 2000), constituting one of the main sources of protein for riverside dwellers, indigenous peoples and rural populations in this region (Rebêlo; Pezzuti, 2000; Faria; Malvazio, 2018).

As it is a common species of Amazonian fauna, the capture and consumption of these animals become recurrent, another observation to be considered is that the captured animal can easily be raised on farms or in the backyard of homes, being fed with vegetables, leftover animal viscera and/or leftover human food (Figueredo; Barros, 2016b). In addition to the above, the fact that tortoises move more slowly makes them an easy target and is occasionally collected during hunting events of other animals (Figueredo; Barros, 2016a).

Although this eating practice is very common in the Amazon region, other Brazilian regions, such as the Northeast, have this eating habit, such as in the city of Santana do Ipanema, in the interior of Alagoas. According to Chagas (2017), this habit emerged in the second half of the 20$^{th}$ century, the tortoises, as they are known in the region, were captured in the *caatinga* of the Alto Sertão and bought by some merchants from Santana, who raised them in their backyards for pleasure or sold them to connoisseurs. From there came the “cagada”, a typical dish of the region and which was much appreciated by people from Santana do Ipanema (*santanenses*) and even by those who visited the city

Different from the importance of turtles in the Amazon rainforest as a source of protein, the consumption of Jabuti in Alagoas is more related to cultural practices, being consumed in traditional festivals and important occasions.

Given this information, is this habit that is linked to the local culture being passed on to the younger generations through the cultural transmission of this practice? And can the transmission of this practice be associated with social learning that comes from parents or relatives?

This animal, once abundant in the *caatinga* region and raised in the backyards of homes, a common habit in the city of Santana do Ipanema, is disappearing from the region and with it the local culture. The realization of this work through the survey of the knowledge of the new generations about the dynamics of use and consumption of this species can be used as

a basis for actions in the preservation of this species, because the lack of knowledge that a society has about a certain species can favor its extermination, showing that knowledge becomes very important for the conservation of biodiversity.

In view of the above, the objective of this research was to raise the knowledge of the university population of Santana do Ipanema about the use of the tortoise in the diet, as well as the mode of transmission of this information.

## Methodology

### *Location of the survey*

The research was carried out among university students from Santana do Ipanema, in the state of Alagoas. Historically, until the end of the 18th century it was nothing more than a village inhabited by Indians and mestizos. Its colonization only began in 1815 with the arrival of the first settlers. In 1875 it became a village being dismembered from the territory of Traipu and only in 1921, through Law No. 893, it became a city (Melo, 2016)

Santana do Ipanema is a city in the state of Alagoas with a territorial extension of 436,160 km² and 46,220 inhabitants (IBGE, 2022). It is bordered to the north by the state of Pernambuco and the municipality of Poço das Trincheiras; to the south with the municipalities of Carneiros, Olivença and Olho D'água das Flores; to the east with the municipality of Dois Riachos; and, to the west, with the municipalities of Senador Rui Palmeira and Poço das Trincheiras and is located 207 km from the capital Maceió (Lopes; Saints; Barros, 2005). Considered a hub city, as it receives students from several neighboring municipalities on a daily basis, from elementary school to university.

The research was developed with university students from the State University of Alagoas (*Universidade Estadual de Alagoas* - UNEAL), Federal University of Alagoas (*Universidade Federal de Alagoas* - UFAL), UNIARAGUAIA and UNICESUMAR, living in the rural and urban areas of Santana do Ipanema and neighboring municipalities.

### *Data collection*

The research began with a bibliographic survey based on the reading of books, articles and dissertations for a better understanding of how the process of cultural transmission and its evolution occurs, the history of turtles and the use of animals as a source of human food. All this material was collected through consultations with websites, such as Google Scholar, SciELO; periodics; online magazines and digital reading apps, such as the Kindle.

A questionnaire was developed and applied through the online forms platform Google Forms. The form containing seventeen questions was sent to the coordinators of the courses of the Universities and sequentially, to the students of the period 2020.2 and 2021.1 of the

universities based in Santana do Ipanema, raising the knowledge of the university students about the consumption of tortoise meat, this habit in Santana do Ipanema, what is the source of this knowledge and whether this eating habit should be transmitted to future generations.

Although the animal in question is the tortoise, a terrestrial turtle, the population of the region popularly knows it as tortoise and it was placed in the "cágado"/tortoise questionnaire so that there would be no doubt as to which animal the research was referring to.

The questionnaire contained information about the research and a term requesting the students' permission to use and disseminate the results, and the minimum age to be able to answer the questionnaire was 18 years old. The courses offered by the universities are Pedagogy, Animal Science and Biological Sciences from the State University of Alagoas (*Universidade Estadual de Alagoas* - UNEAL), Pedagogy from UNICESUMAR, Economic Sciences and Accounting Sciences from the Federal University of Alagoas (*Universidade Federal de Alagoas* - UFAL) and Pedagogy from UNIARAGUAIA.

After the application of the questionnaires, the information collected was tabulated and formed a database in Excel, which was submitted to descriptive analysis of the quantitative variables and to the study of frequency (absolute and relative) of the categorical variables, and correlation between the data.

## Results and discussion

During the research, 108 university students answered the questionnaire, when a total of 975 students were enrolled, being students from the following institutions: State University of Alagoas (*Universidade Estadual de Alagoas* - UNEAL), Federal University of Alagoas (*Universidade Federal de Alagoas* - UFAL), UNIARAGUAIA and UNICESUMAR, all from the hinterland hub located in the city of Santana do Ipanema - AL. The application of the form was carried out between the months of April and May of the year 2021, where the knowledge about the use of the tortoise in human food was addressed. Of the 108 interviewees, 65.74% were female and 34.26% were male (Table 01).

**Table 01.**
Gender of the University students who responded to the form.

| Category | Absolute Frequency | Relative Frequency (%) |
|---|---|---|
| Gender | | |
| Female | 71 | 65.74% |
| Male | 37 | 34.26% |
| | 108 | 100 |

*Note: Survey data.*

This prevalence in the number of female responses is due to the fact that younger women are the majority in university courses (60%), according to Guedes (2008). As well as

the woman is the main responsible for the process of choosing the products that will be part of the diet (Oliveira; Vela, 2008), demonstrating the importance of this class in the decision to consume a foodstuff.

When asked if they were aware of the use of "cágado"/tortoise in human food, 68 individuals (63%) answered yes and 40 individuals (37%) answered no (Table 02).

**Table 02.**
University students who answered about their knowledge of the use of "cágado"/tortoise in the diet.

| Category | Absolute Frequency | Relative Frequency (%) |
|---|---|---|
| Be aware of this eating habit | | |
| Yes | 68 | 62.96 |
| No | 40 | 37.04 |
| | 108 | 100 |
| Source of knowledge about this eating habit | | |
| Family members: grandparents, parents, uncles | 25 | 36.76 |
| Cousins, friends, neighbors | 23 | 33.83 |
| Teacher, media, elderly | 14 | 20.58 |
| Many people | 4 | 5.88 |
| Did not inform | 2 | 2.95 |
| | 68 | 100 |
| This eating habit is common in the city of Santana do Ipanema | | |
| Yes | 26 | 24 |
| No | 82 | 76 |
| | 108 | 100 |
| Home | | |
| Santana do Ipanema | 16 | 61.54 |
| Other municipalities | 10 | 38.46 |
| | 26 | 100 |

*Note: Survey data.*

Answering the question about the knowledge of the use of "cágado"/tortoise in the diet, of the 68 university students who answered that they had heard of this habit, 25 (36.76%) obtained this information from family members (parents, grandparents, uncles); 23 (33.83%) through friends, cousins and neighbors. In the question that referred to the fact that the tortoise is appreciated in the cuisine of Santana, 26 (24%) university students answered that they knew about this habit and 82 (76%) that they did not. Of these 26 who claimed to know, 16 are residents of the municipality of Santana do Ipanema and 10 are residents of other municipalities in Alagoas, Table 02.

The knowledge revealed by an individual is his cultural baggage that is projected from the collectivity to which he belongs (Toledo; Barrera-Bassols, 2009), the results show that information about this eating habit is not reaching younger populations, which may lead to ignorance in the next generations. Also according to the same authors, the knowledge

contained in an individual that is passed from generation to generation characterizes cultural transmission vertically. Where knowledge passed down through generations from father to son is associated with issues of survival (Soldati; Albuquerque, 2016). The interaction between subject and culture contributes to the construction of the individual's habits and personality; being influenced by the sociocultural environment in which the subject evolves, as it is configured as the result of exchanges between the collective world and the particular universe of each one (Daure; Reveyrand-Coulon, 2009).

When asked if they had ever consumed tortoise meat, only 9 university students (8.33%) answered yes and 99 (91.67) said no, Table 03. Oliveira *et al.* (2019) in their research on the consumption of turtles in Acre, found a percentage of 67.4% of people who had not consumed turtle meat.

**Table 03**
University students who answered about their knowledge of the use of "cágado"/tortoise in the diet.

| Category | Absolute Frequency | Relative Frequency (%) |
|---|---|---|
| Have consumed tortoise | | |
| Yes | 9 | 8.33 |
| No | 99 | 91.67 |
| | 108 | 100 |
| Gender | | |
| Female | 4 | 44.44 |
| Male | 5 | 55.56 |
| | 9 | 100 |
| Family income | | |
| Up to 1 minimum wage | 4 | 44.44 |
| From 1 to 3 minimum wages | 5 | 55.56 |
| | 9 | 100 |

*Note: Survey data.*

Among these 9 university students who answered "yes", 4 were female and 5 were male, Table 03. Regarding the consumption of tortoise, Brito, Lima and Rosa (2016) found in their research on the consumption of turtles in Castanhal in Pará, that 31.43% of the interviewees have already consumed this animal, 40.91% of which are male and 59.09% female, and the most consumed species is the tortoise. The same authors state that there is no significant difference between the consumption of turtles and the gender of the interviewees. To Ataídes; Malvasio; Parente (2010) in relation to the number of people who answered yes, it is pertinent to think about the reason for this small difference in the number of women who feed on these turtles, since, considering gender roles, these women would be responsible for the preparation of these foods. Unlike Oliveira *et al.* (2019) who, in relation to the consumption of turtles, found that 32.6% of the interviewees had already consumed them, 13.5% of them were female and 19.10% were male, they attribute this result to a higher number of males due to the fact

that women feel afraid to answer these surveys and it may also be related to food taboos (Ataídes; Malvasio; Parente, 2010; Salera Junior, 2005)

Of the students who answered that they had consumed turtles, 4 had a family income of less than one minimum wage and 5 had a family income of 1 to 3 minimum wages, as shown in Table 03, results found by Pantoja *et al.* (2013) in relation to the family income of turtle consumers in their study evaluating the consumption and acceptance of this meat in Marituba - PA found a family income of up to 3 minimum wages in 90% of the consumers, as well as Braz *et al.* (2013); Brito, Lima; Rosa (2016); Faria and Malvásio (2018).

According to Law No. 9,605/98, which is regulated by Federal Decree No. 3,179 of September 21st, 1999, and which deals with the use of wild animals, determining that wild animals should only be used as food only in cases that will satisfy the hunger of families in socioeconomic vulnerability and without a fixed income (BRASIL, 1998), but what can be seen is that this consumption occurs in the urban area and that consumers have an average income of 1 to 3 minimum wages, denoting a consumption more linked to cultural practices than survival.

There were several reasons that led these students not to consume the "cágado"/tortoise as shown in Table 04, 12.12% stated that they had not consumed it due to lack of opportunity, Oliveira *et al.* (2019) found a percentage of 67.4% of the respondents of their research who did not consume the "cágado"/tortoise, and of this total who did not consume the meat 31.25% also did not consume it due to lack of opportunity, this percentage was also found by Oliveira *et al.* (2013b), who reported that 32% of the interviewees did not consume the tortoise due to lack of opportunity. Saints; Grandson; Brito (2013), Oliveira *et al.* (2013b) found other reasons to justify the non-consumption of turtle meat, such as disgust or pity, categories also found in this study.

**Table 04.**
Reason to never eat turtle meat.

| Category | Absolute Frequency | Relative Frequency (%) |
|---|---|---|
| Reason to never eat | | |
| Don't think it's correct | 22 | 22.22 |
| Lack of interest | 11 | 11.11 |
| I didn't know the practice | 20 | 20.20 |
| Lack of opportunity | 12 | 12.12 |
| Think it's strange | 19 | 19.19 |
| They did not answer | 13 | 13.13 |
| Random answers | 2 | 2.03 |
| | 99 | 100 |

*Note: Survey data.*

The cause of the large number of people who have never tried turtle meat may have been influenced by the distance of the interviewees in relation to the product, because in places

where the animal is captured in an extractive way, used in their own food and sold, consumption is recurrent. According to Trevisan (2006), the riverside communities of the Amazon traditionally feed on the meat and eggs of turtles, having as a habit the consumption and commercialization of turtles, which assume in the culture of this people an important food and economic source. Another possible cause for the low frequency of respondents who tried meat would be that the interviewees were unaware of the existence of legal breeding sites that could provide this source of animal protein. Most of the interviewees consumed the meat only once.

Answering the question about the continuation of this eating habit, 35 (32.40%) students agreed that it should be passed on to other generations, while 73 (67.60%) thought it should not be passed on, Table 05.

**Table 05.**
University students who answered about the continuation of this eating habit in the next generations.

| Category | Absolute Frequency | Relative Frequency (%) |
|---|---|---|
| It must be passed on to the next generations | | |
| Yes | 35 | 32.40 |
| No | 73 | 67.60 |
| | 108 | 100 |
| | Because they agree with the preservation of this eating habit. | |
| Food diversification and source of income | 10 | 28.57 |
| Taste and for being a healthy food | 7 | 20 |
| It's part of the culture | 13 | 37.15 |
| The use would help in preservation | 2 | 5.71 |
| They didn't say the reason | 2 | 5.71 |
| It didn't fit the previous answers | 1 | 2.86 |
| | 35 | 100 |
| | Because they don't agree with the preservation of this eating habit. | |
| He did not answer the reason | 3 | 4.11 |
| Why not | 2 | 2.74 |
| By not consuming meat | 6 | 8.22 |
| For the preservation of the species | 14 | 19.18 |
| Consumption being weird | 11 | 15.07 |
| For the suffering caused to the animal | 5 | 6.85 |

| | | |
|---|---|---|
| Existence of other proteins of animal origin | 17 | 23.28 |
| They do not consider consumption to be normal | 9 | 12.33 |
| Answers disconnected from the question | 6 | 8.22 |
| | 73 | 100 |

*Note: Survey data.*

Although the majority of the students answered that this feeding habit should not continue, only 19.2% related their answers to the preservation of the species, demonstrating that there is not enough knowledge of the species involved, especially about the importance of this species in the provision of ecosystem services and consequently the importance of its preservation.

## Conclusion

The transmission of knowledge tends to be vertical, but this practice, in the region studied, is not related to survival, but to the local culture, because this food is not characterized as an important source of protein for this region.

The knowledge about this eating habit is not being passed on to the new generations and with it the knowledge about the species involved.

The habit of tortoise consumption needs to be better elucidated, in an attempt to promote the preservation of the species. More studies are needed on the nature of tortoise food consumption.

## REFERENCES

Ataides, A. G.; Malvasio, A.; Parente, T. G. Percepções sobre o consumo de quelônios no entorno do Parque Nacional do Araguaia, Tocantins: conhecimentos para conservação. Gaia Scientia, v. 4, n. 1, p. 7-20, 2010. Disponível em: www.periodicos.ufpb.br. Acesso em: 22 jan. 2020.

Bezerra, M. S., Jacob, M. C. M., Ferreira, M. A. F.; Vale, D.; Mirabal, I. R. B.; Lyra, C. O. Insegurança alimentar e nutricional no Brasil e sua correlação comindicadores de vulnerabilidade. Ciênc. saúde coletiva, v.25 n.10 Rio de Janeiro Oct. 2020, Epub Sep. 28, 2020.

Brasil. Lei Federal Nº 9.605, de 12 de fevereiro de 1998. Dispõe sobre as sanções penais e administrativas derivadas de condutas e atividades lesivas ao meio ambiente, e dá outras providências. Presidência da República. 1998.

Braz, R. D. S.; Pantoja, I. B. S.; Almeida, N. B.; Oliveira, M. F. S.; Santos, M. J.; Neto, A. M.

S.; Oliveira, A. C.; Souza, A. M.; Brito, T. P. O consumo e a aceitação de carne de quelônios no município de Marituba – PA – Brasil, *In*: CONGRESSO BRASILEIRO DE AQUICULTURA DE ESPÉCIES NATIVAS. Belém: Sociedade Brasileira de Aquicultura e Biologia Aquática (Aquabio) 2013.

Brito, T. P.; Lima, E. B. S.; Rosa, J. C. G. S. Avaliação do consumo de quelôneos no município de Castanhal - Pará - Brasil. Revista Ouricuri, Paulo Afonso - BA. v. 6, n. 1, p. 71-103. Jan./abr. 2016.

Cascudo, L. C. Antologia da alimentação no Brasil. São Paulo: global. 1ª edição digital, 2014.

Chagas, C.B. As cagadas de Santana. 26 nov. 2017. CLEVRISVALDOBCHAGAS.BLOBSPOT.COM. Disponível em: http://clerisvaldobchagas.blogspot.com/2017/11/as-cagadas-de-santana.html. Acesso em: 01 nov. 2022.

Daure, I.; Reveyrand-Coulon, O. Transmissão cultural entre pais e filhos: uma das chaves do processo de imigração. Psicol. clin. [on-line], vol. 21, n. 2, p. 415-429. 2009.

Faria, V. A. de; Malvásio, A. Aspectos sobre a caça, comercialização e consumo dequelônios na região do corredor ecológico Araguaia Bananal no estado do Tocantins. Revista Ouricuri, Juazeiro-BA, v. 8, n. 2., p. 080-113 jul./dez. 2018.

Figueiredo, R. A. A. de; Barros, F. B. Sabedorias, cosmologias e estratégias de caçadores numa unidade de conservação na Amazônia. Desenvolvimento e Meio Ambiente, vol. 36, p. 223-237, abri. 2016a.

Figueiredo, R. A. A. de; Barros, F. B. Caçar, preparar e comer o 'bicho do mato': práticas alimentares entre os quilombolas na Reserva Extrativista Ipaú-Anilzinho (Pará). Bol.Mus. Para. Emílio Goeldi. Ciênc. hum. [online]., vol. 11, n. 3. 2016b. Disponível em: <http://www.scielo.br/scielo.php?script=sci_arttext&pid =S1981812220160003006 91&lng=en &nrm=iso>. Acesso em: 20 jan. 2023

Guedes, M. C. A presença feminina nos cursos universitários e nas pós-graduações: desconstruindo a ideia da universidade como espaço masculino. Rio de Janeiro, História, Ciência e Saúde. v. 15, Suplemento, jun. 2008., p.117-132, 2008.

Instituto Brasileiro de Geografia e Estatística- IBGE . Cidades, 2022. Disponível em: https://cidades.ibge.gov.br/brasil/al/santana-do-ipanema/panorama. Acesso em: 25 jan. 2022.

Jacob, M. C. M. Alimentação e Cultura para a nutrição. [Recurso eletrônico] Recife-PE: NUPEEA, 2021.

Laland, K.; Uller, T.; Feldman, M.; Sterelny, K.; Muller, G.B.; Moczek, A.; Jablonka, E.; Odling-smee, J.; Wrayg. A.; Hoekstra, H. E.; Futuyma, D. J.; Lensky, R. E.;

FC Mackay, T. Schülter, D.; Strassmann, I. A. A teoria da evolução precisa ser repensada? Natureza 514, p. 161–164, 2014.

Lopes, O.F.; Santos, J. C. P.; Barros, A. H. C. Diagnóstico ambiental de Santana do Ipanema - Alagoas. Rio de Janeiro: EMBRAPA Solos, 2005.

Melo, P. A. Língua e cultura: a intermediação simbólica do signo linguístico em função onomástica na toponímia Alagoana. Rev. Edu. Cul. V. 6, n. 1, p. 287-301. 2016.

Mesoudi, A. Cultural evolution. eLS ©, John Wiley & Sons, Ltd. www.els.net, 2018.

Mesoudi, A. Cultural evolution: how Darwinian theory can explain human culture & sinthesize the social sciences. Chicago, University Chicago. 2011.

Mintiz, S. W. Comida e antropologia: uma breve revisão. RBGS. Vol. 16 n. 47. Outubro de 2001.

Morcatty, T. Q.; J. Valsecchi. Condutores sociais, biológicos e ambientais da caça e comércio da tartaruga-de-pé-amarelo ameaçada na Amazônia. Ecologia e Sociedade 20(3): 3. 2015. Disponível em: http://dx.doi.org/10.5751/ES-07701-200303. Acesso em: 25 nov. 2022

Rebelo, G.; Pezzut, J. Percepções sobre o consumo de Quelônios na Amazônia. Sustentabilidade e alternativas ao manejo atual. Ambiente & Sociedade, Ano III, n.6-7, 2000. Disponível em: https://www.scielo.br/j/asoc/a/D8pLNfFKs3qt7TjQHG4kXZR/?lang=pt. Acesso em: 12 jul. 2022.

Santoro, F. R.; Nascimento, A. L. B.; Soldati, G. T.; Ferreira Júnior, W. S. Albuquerque, U. P. Evolutionary ethnobiology and cultural evolution: opportunities for research and dialog. Journal of Ethnobiology and Ethnomedicine, v. 14, n. 1, p. 1-14, 2018.

Soldati, G. T.; Albuquerque, U. P. Ethnobotany in intermedical spaces: The case of the Fulni-ô Indians (Northeastern Brazil). Evidence-based Complemantary and Alternative Medicine, v. 12, p. 13, 2016.

Soldati, G. T. Transmissão do conhecimento local ou tradicional e o uso dos recursos naturais. *In*: ALBUQUERQUE, U. P. Introdução a etnobiologia. 2. ed. Recife: NUPEEA, cap. 3, p. 41-66. 2018.

Souza, F. L. Uma revisão sobre padrões de atividade, reprodução e alimentação de cágados brasileiros (Testudines, Chelidae). Phyllomedusa, v.3. n.1, 2004.

Oliveira, M. N.; Costa, E. N.; Vasconcelos, V. S.; Matos, R. P.; Moraes, L. G. L.; Correia, M. J.; Lopes-Filho, I. I.; Silva, M. I. A.; Silva, T. L. Consumo de quelônios no perímetro urbano de Cruzeiro do Sul, Acre, Brasil. Gaia Scientia, v. 13, n. 4, p. 99-108, 2019. Disponível em: www.periodicos.ufpb.br. Acesso em: 14 jan. 2020.

Oliveira, M. F. S.; Santos, M. J.; Silva Neto, A. M.; Pantoja, I. B. S.; Almeida, N. B.; Braz, R. S.; Oliveira, A. C.; Souza, A. M.; Brito, T. P. Avaliação do consumo de carne e ovos de

quelônios no município de Santa Isabel do Pará, PA – Brasil. In: SEMANA DE INTEGRAÇÃO DE CIÊNCIA, ARTE E TECNOLOGIA DO IFPA CAMPUS CASTANHAL 3, 2013. Castanhal. Resumos. Castanhal: IFPA / III SICAT, 2013a.

Oliveira, M. F. S.; Santos, M. J.; Silva Neto, A. M.; Pantoja, I. B. S.; Almeida, N. B.; Braz, R. S.; Oliveira, A. C.; Souza, A. M.; Brito, T. P. Análise do consumo de carne e ovos de quelônios no município de Ananindeua, região metropolitana de Belém, PA Brasil. In: CONGRESSO DE ENGENHARIA DE PESCA, 17, 2013. Paulo Afonso. Resumos. Paulo Afonso: ABEP / XVIII COMBEP, 2013b.

Oliveira, N. R. F.; Vela, H. A. G. Escolhas alimentares, decisões culturais: a mulher define o que vai pra mesa. Florianópolis: UFSM, 2008.

Pantoja, I. B. S.; Braz, R. S.; Almeida, N. B.; Oliveira, M. F. S; Santos, M. J.; Silvaneto, A. M.; Oliveira, A. C.; Souza, A. M.; Brito, T. P. O consumo e a aceitação de carne de quelônio no município de Marituba – PA – Brasil. In: CONGRESSO BRASILEIRO DE AQUICULTURA DE ESPÉCIES NATIVAS, 4, 2013. Belém. Resumos. Belém: Sociedade Brasileira de Aquicultura e Biologia Aquática (Aquabio), 2013.

Salera Júnior, G. S. Avaliação da biologia reprodutiva, predação natural e importância social em quelônios com ocorrência a bacia do Araguaia. 2005. 191 f. Dissertação (Mestrado em Ciências do Ambiente) – Universidade Federal de Palmas. Tocantins. 2005.

Santos, M. J.; Neto, A. M. S.; Brito, T. P. O mercado consumidor de carne de quelônio no município de Marituba, PA- Brasil. In: SIMPÓSIO DE ESTUDOS E PESQUISAS EM CIÊNCIA AMBIENTAL NA AMAZÔNIA, 2, 2013, Belém. Resumos. Belém: Universidade do Estado do Pará, 2013.

Toledo, V. M.; Barrera-Bassols, N. A etnoecologia: uma ciência pós-normal que estuda as sabedorias tradicionais. Desenvolvimento e Meio Ambiente. n. 20. p. 13-45. jul./dez. 2009.

Trevisan, S. H. Aspectos etnoecológicos da tartaruga-da-Amazônia, Podocnemis expansa Schweigger, 1812) (Reptilia, Chelonia, Pelomedusidae) na região do médio Xingu, Pará. Trabalho de Iniciação Cientifica – Universidade Federal do Pará, Altamira, 2006.