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Quality attribute and geographical indication of Agonlin oil (Agonlinmi) made in Benin

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The consumption frequency, the consumer's income, the specific quality attribute and the consent to pay Agonlin oil, an oil of high standard made with a traditional knowledge is transferred from generation to generation in Agonlin region. According to its attributes, this oil has been evaluated through 400 consumers from 5 different districts or municipalities. The data collected have been analyzed thanks to a descriptive analysis. All in all, 10 attributes have been identified: the flavor, color, consistency, taste, local and natural character, nutritional value, geographical origin, viscosity and texture. The descriptive analysis shows its taste (60%) as being the main attribute of Agonlin oil, followed by its flavor (51%). The majority of interviewers consume Agonlin oil many times in a week (59%). But the oil is consumed by people with low income (40000 to 75000 FCFA). Other consumers with average income agree to value Agonlin oil when it is well manufactured and conserved. This study shows that Agonlin oil is a traditional and original product that the consumers agree to value. Consequently, Agonlin oil rightly deserves a geographical indication protection.

Key words: Quality attributes, geographical attribute, specific quality, consent to pay.

INTRODUCTION

Peanut is an important product in rural areas of Benin (Elisha, 2004; Ediage et al., 2011; Egal et al., 2005; Honfo et al., 2010). Be it in Benin, in Senegal or in Nigeria, groundnuts provide cheap protein source. It is the main source of oil, minerals and vitamins for people from rural areas particularly for children (Adjou et al., 2012). It is boiled or smoked, transformed into paste for flavoring, cake or oil (Bankole et al., 2005). In Agonlin region, groundnut is processed into oil and cake only (Agonlinmi and Kwlikwli). This transformation is made with a traditional technique based on a know-how specific to Agonlin region. Since those two products are locally made, they are valued by local population as products with specific quality attribute and added value superior to other products. They attract food suppliers or grocers (Berard and Marchenay, 2007). Due to counterfeiting and

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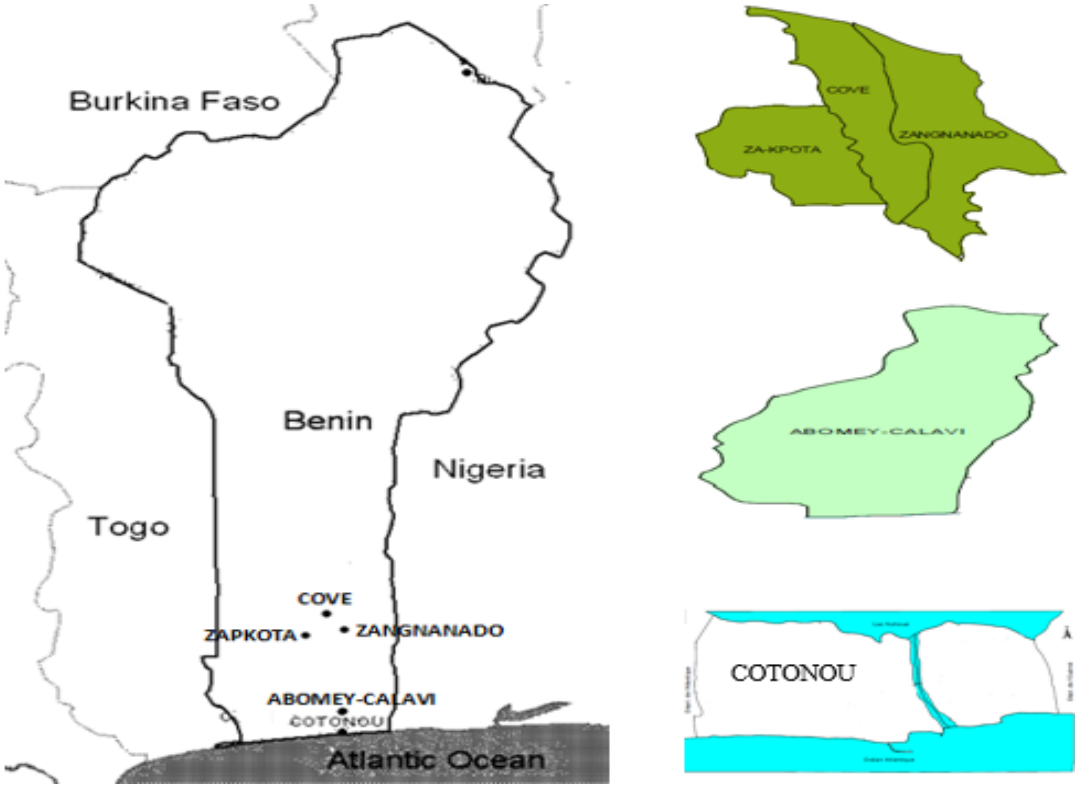

Figure 1. Map of Benin showing the regions included in the study. Source INSAE (2002).

lack of conformity with health standards in manufacturing of these products, they are subject to lack of confidence of consumers. For the consumer loyalty interest and for marketing strategy, some implementation approaches of official signs of quality are related to the territorial origin among which lies the Geographical Indication.

Geographical indications help identify the regional origin of products with the characteristics linked to each region in terms of quality or other standards (ADPIC, 1994). The Geographical Indication has been developed in France in the 20Th century in a major wine producing crisis to regulate the use of geographical norm (Berard and Marchenay, 2007). The use of geographical indication is effective in fighting counterfeiting and distinguishing products in the market thus improving their added value and protecting a national heritage which is important in rural development (Durand et al., 2009). Only products with specific quality are eligible for geographical indication. According to Vandecandelaere et al. (2009), a product with specific quality is a product which shows characteristics linked to its contents, its manufacturing or its marketing which contribute to distinguish it. So, the specific quality is defined in terms of nutritional value, gustative or visual effect or symbolism.

Since 2009, Benin has been engaged in the implementation process of Geographical Indications with the support of OAPI (Organisation Africaine des Propriétés Intellectuelles). Implementation of Geographical Indication is an opportunity for the promotion of agricultural sectors, the promotion of local products, increasing the added value and improving the income of producers. In this context, Benin has set up a national committee of geographical indications to support the process. Work to identify products with high potential of Geographical Indication was realized and many products have been selected among which is Agonlin oil.

This study aims to identify the attributes of specific quality of Agonlin oil in order to examine the behavior of consumers with each of those identified attributes. It also allows assessing the conduct of consumers with regards to implication of setting up of Geographical Indication of Agonlin oil with the consent to pay consumers in accordance with identified quality attributes.

MATERIALS AND METHODS

Investigation area

The area covered by our investigation was composed of two main cities and three districts or municipalities as shown in Figure 1. The two main cities are Cotonou, the economic capital of Benin and Abomey-Calavi, which is located about 15 km from Cotonou. The three districts (municipalities) are Covè, Za-kpota and Zangnanado which are located about 120 km from Cotonou. Covè and Zangnanando constitute Agonlin region. The three districts were chosen because they are the focus of Agonlin oil production activity in Benin and the two main cities were chosen because they are the

Table 1. Size of the population based on the parameters.

Distribution of responses		Sampling error				
P	**1 - P**	**1 %**	**5 %**	**10 %**	**15 %**	**20 %**
50 %	50 %	9 604	385	97	43	25
60 %	40 %	9 220	369	93	41	24
70 %	30 %	8 068	323	81	36	21
80 %	20 %	6 147	246	62	28	16
90 %	10 %	3 458	139	35	16	9

Source : Dagnelie (2007).

Table 2. Distribution of consumers of Agonlin.

Types of Agonlin oil Consumers	District	No
Urban	Cotonou Abomey-Calavi	250
	Covè	69
Rural	Zakpota	16
	Zagnanado	65
Total		400

major marketing places of this oil.

Sampling of consumers

The sample size was determined by taking into account the importance of the size of the population.The size of the population of consumers of oil Agonlin is not known. So the random sampling method of Dagnelie (2007), Le Maux (2009) was used to determine a sample size to obtain significant results. The principle of this method is to calculate the sample size on the basis of estimation of percentage using the following formula:

$$n = \frac{z^2 p(1-p)}{e^2}$$

With:
n: is the sample size,
t: is a constant issue for the normal distribution at a certain confidence level (usually 95% and z = 1.96),
p: is the percentage of people who represents the observed character),
e: is the chosen sampling error margin.

Table 1 gives the size of the population based on the parameters.

Assuming that half of the population consumes Agonlin oil, the sample size required to estimate a proportion (P) with a margin of error of 0.05 and a 95% confidence level (P = 0.5) is then 385.

However, because of error margin, the sample size used in the context of investigation on Agonlin oil consumption is 400 individuals. The distribution of the sample by area is shown in Table 2.

Data collection

Data were collected from November to December 2014 to identify the specific characteristics of Agonlin oil perceived by consumers. Questionnaires were developed for data collection. These questionnaires were tested with the locals and adjusted if necessary.Interviews were conducted in the language / dialect that was best understood by consumers with translation if necessary.A total of 400 consumers of the Agonlin oil were randomly selected from different selected regions (Table 2) and asked about their monthly income, their frequency of consumption of oil Agonlin, quality attributes Agonlin of oil and the willingness to pay of these consumers for each identified quality attribute.

Processing and statistical analysis

The data collected were stored in a database made in Excel. Data processing was performed with SPSS 21.0 software after entering data in the database. Descriptive statistics method was mainly used to study the socio-economic characteristics of consumers, analyze the classification of attributes by consumers on the one hand and the classification of Nelson and Darby. Prioritization of the attributes of Agonlin oil was done by asking consumers surveyed to rank the attributes from the most important (rank 1) to the least important (rank 5).The immediate reasons for this oil consumption were discussed and the willingness to pay a premium for this product was also analyzed.

RESULTS

Socio-economic characteristics and distribution of monthly income

Table 3 provides an overview of the monthly income of respondents according to their gender, their age and their education levels. It appears that Agonlin oil is more consumed by women (63.75%) than men (36.25%). We Notice that the level of instruction of the consumer population is low (31.25% has no level, 62% primary, 25% secondary and 27% higher).The age of the most consumers (40%) is between 30 and 45 years. But

Table 3. Distribution of monthly income by sex and region.

	Monthly income (CFA) x 1000						
	[0 – 40]	**[40 – 75]**	**[75- 100]**	**[100 – 150]**	**[150 - 200]**	**[200 - 250]**	**≥250**
Gender							
woman	129 (32,30)	68 (17,00)	25 (06,30)	18 (04,50)	8 (02,000)	4 (01,00)	3 (00,80)
Man	43 (10,80)	34 (08,50)	15 (03,80)	25 (06,30)	14 (03,50)	10 (02,50)	3 (00,80)
Level of education							
None	73 (18,30)	37 (09,30)	8 (02,00)	4 (01,00)	2 (00,50)	0 (00,00)	1 (00,30)
primary	27 (06,80	20 (05,00)	8 (02,00)	3 (00,80)	4 (01,00)	0 (00,00)	0 (00,00)
secondary	45 (11,30)	24 (06,00)	10 (02,50)	15 (03,80)	4 (01,00)	5 (01,30)	1 (00,30)
Superior	27 (06,80)	21 (05,30)	13 (03,30)	21 (05,30)	12 (03,00)	9 (02,30)	4 (01,00)
literate	0 (00,00)	0 (00,00)	0 (00,00)	0 (00,00)	0 (00,00)	0 (00,00)	0 (00,00)
Age							
[15–30 years]	79 (19,75)	33 (08,25)	10 (02,50)	13 (03,25)	6 (01,50)	3 (00,75)	0 (00,00)
[30–45 years]	56 (14,00)	42 (10,50)	18 (04,50)	21 (05,25)	10 (02,50)	8 (02,00)	4 (01,00)
[45–60 years]	23 (05,75)	20 (05,00)	11 (05,00)	8 (02,00)	6 (01,50)	3 (00,75)	2 (00,50)
60 years et +	14 (03,50)	7 (01,75)	1 (00,25)	1 (00,25)	0 (00,00)	0 (00,00)	0 (00,00)

(): Percentage

Table 4. Consumption frequency of Agonlin oil by level of income.

		Consumption frequency ofAgonlin oil		
		Less than once per week	**once per week**	**Several times a week**
Monthly income (CFA)	[0 – 40000]	34 (08,50)	20 (05,00)	119 (29,75)
	[40000 – 75000]	36 (09,00)	6 (01,50)	60 (15,00)
	[75000 – 100000]	20 (05,00)	4 (01,00)	16 (04,00)
	[100000 – 150000]	21 (05,25)	3 (00,75)	19 (04,75)
	[150000 – 200000]	6 (01,50)	2 (00,50)	14 (03,50)
	[200000 – 250000]	8 (02,00)	2 (00,50)	4 (01,00)
	≥250000	2 (00,50)	0 (00,00)	4 (01,00)
Total		127 (31,75)	37 (09,25)	236 (59,00)

(): Percentage.

regardless of gender, age or educational level, the results show that Agonlin oil is more consumed by people with low monthly income. These results are confirmed by those of Table 4 that shows the Agonlin oil consumption frequency of the interviewers. The analysis of this table shows that 31.25% of respondents consume Agonlin oil less than once per week, 9.25% consume it once a week and 59% consume this oil several times a week. This table also shows that persons with low income levels have higher consumption frequency than those with middle and high income. In the other direction, the higher the income is, the less the person consumes Agonlin oil.

Quality attributes of Agonlin oil perceived by consumers and their hierarchies

The choice of Agonlin oil consumption depends on the intrinsic attribute of this product.The data collected from the consumers surveyed allow to identify ten attributes. There are the flavor, color, the nature less volatile in fire, taste, local and natural character, nutrient character, geographical origin of the oil, no cholesterol, and finally the viscosity of the texture. These quality attributes are both intrinsic and extrinsic. Thus, the observation of consumer behavior shows that in the absence of a label on Agonlin oil, several conventions are mobilized to identify it. They are ranked by consumers as presented in Table 5. It appears that about 60% of consumers buy Agonlin oil due to its taste, which is the main feature that guides their choice. The second feature is the flavor (about 51%).It is followed by the color, the nutrient character of the oil and the absence of cholesterol. It is important to notice that even if the attribute "geographical origin" is not part of the 5 main features; Agonlin oil cannot possess such attributes if it does not originally

Table 5. Classification of attributes identified by consumers.

	1st place	2nd place	3rd place	4th place	5th place
aroma	134 (33,50)	202 (50,50)	32 (08,00)	4 (01,00)	0 (00,00)
Color	2 (00,50)	15 (03,50)	65 (16,25)	24 (06,00)	4 (01,00)
the natureless volatile in fire	3 (00,75)	0 (00,00)	3 (00,75)	5 (01,25)	0 (00,00)
Taste	241 (60,25)	145 (36,25)	5 (01,25)	1 (00,25)	0 (00,00)
Local and natural	3 (00,75)	2 (00,50)	13 (03,25)	11 (02,75)	4 (01,00)
Nutrient	11 (02,75)	4 (01,00)	46 (11,50)	33 (08,25)	15 (03,50)
Origin	5 (01,25)	19 (04,75)	44 (11,00)	14 (03,50)	9 (02,25)
No cholesterol	0 (00,00)	2 (00,50)	24 (06,00)	25 (06,25)	28 (07,00)
Viscosity	0 (00,00)	3 (00,75)	13 (03,25)	3 (00,75)	1 (00,25)
Texture	0 (00,00)	0 (00,00)	0 (00,00)	2 (00,50)	0 (00,00)
No response	1 (00,25)	8 (02,00)	155 (38,75)	278 (69,50)	339 (84,75)

( ): Percentage.

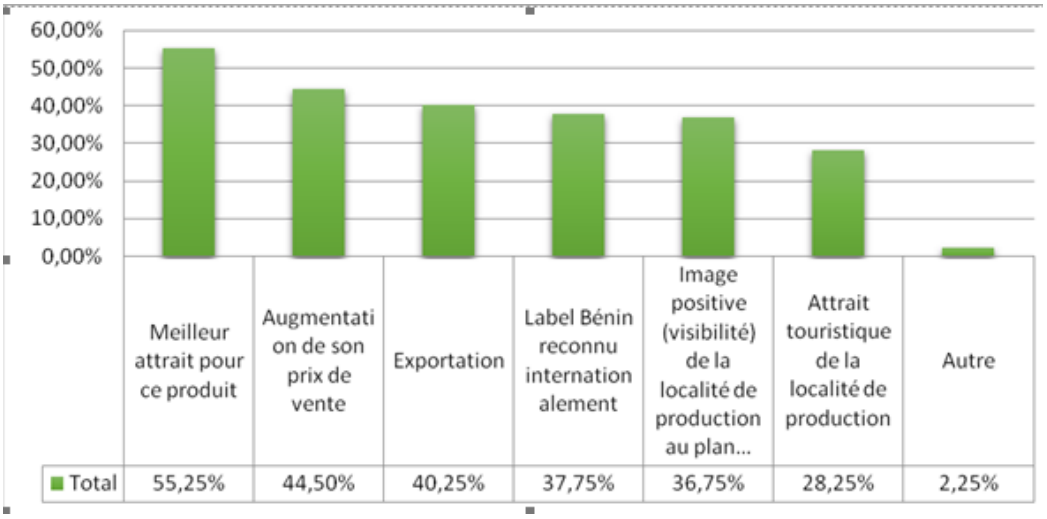

Figure 2. Contribution of the differentiation of Agonlin.

come from the region of Agonlin or produced with the traditional process from the Agonlin region. The qualitative data collected provide information that consumers are buying this oil because outside of the main attributes recognized, it comes from the Agonlin region, as its name suggests.

Analysis of consent to pay a premium for Agonlin oil (“Agonlinmi”) labeled and well-conditioned

Contribution of Agonlin oil labeling according to the consumers

The perceptions of consumers on the contribution of improved oil Agonlin (Agonlinmi labeled and packaged) are analyzed and presented in Figure 2. The oil improvement (better labeling and packaging) first, contribute to a "best attraction for this product" according to 55% of consumers. Then come successively the "increase in the selling price" in 45% of cases, a greater ability to "export" and "Agonlinmi label recognized internationally" in about 40% of cases. In addition to these elements, there is the "positive image of Agonlin region" and the increase of Agonlin region tourist attraction.It appears that the price increasing is a perception already mentioned by consumers.This show therefore the consumer willingness to pay a premium.In the following, the willingness to pay a premium is analyzed by region on one hand and by level of consumer’s income of the other.

Consent to pay a premium for Agonlin oil ("Agonlinmi") labeled and well-conditioned

Willingness to pay a premium for oil by areas is shown in Figure 3. Also, it must be notice that the more the consumer's income level is, the more they are willing to

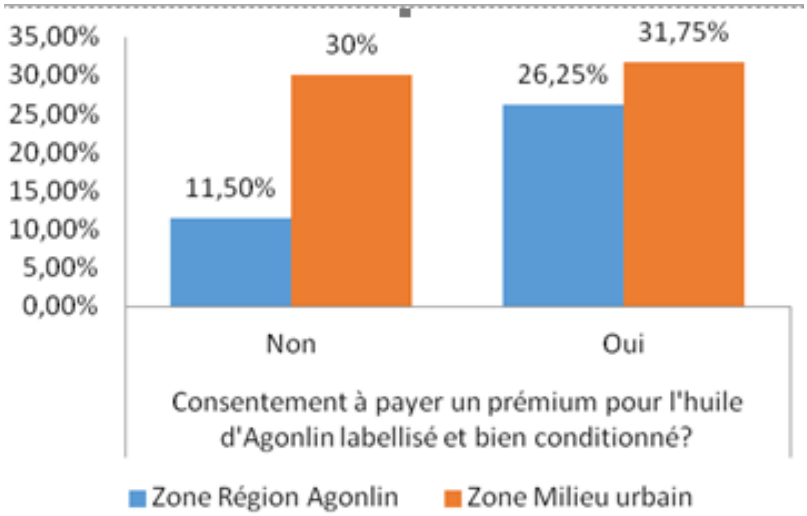

Figure 3. Willingness to pay a premium for Agonlin oil labeled and well-conditioned.

Table 6. Willingness to pay a premium for oil depending on the level of general income.

		Willingness to pay a premium for oil Agonlin labeled and well-conditioned	
		No	**Yes**
Monthly income	[0 – 40000]	77 (45,03)	94 (54,97)
	[40000 – 75000]	54 (52,94)	48 (47,06)
	[75000 – 100000]	16 (40,00)	24 (60,00)
	[100000 – 150000]	7 (16,28)	36 (83,72)
	[150000 – 200000]	7 (31,82)	15 (68,18)
	[200000 – 250000]	4 (30,77)	9 (69,23)
	[250000 - ∞]	1 (16,67)	5 (83,33)
Total		166 (41,50)	231 (57,75)

(): Percentage (%).

pay a premium for an Agonlin labeled and well packaged oil.Taking into account of the surveyed municipalities, it appears that consumers agree morein urban areas to pay a premium for Agonlin oil labeled and well packaged than Agonlin region. But we find that consumers surveyed in rural areas who are willing to pay a premium for the Agonlin oil labeled and well-conditioned, represent nearly the double of those who responded negatively. Furthermore, for the consumers surveyed in urban areas, the difference between favorable and those unfavorable responses is very low. About 0.5% remains undecided about the issue of paying a premium for Agonlin oil labeled and well packaged. The income of the individuals surveyed is also a factor which determines the willingness to pay a premium as shown in Table 6. This shows that the majority of respondents are willing to pay a premium for the Agonlin oil labeled and properly packaged. Besides the individuals whose income bracket is in the range [40000-75000 [, the majority agrees to pay a premium for oil Agonlin labeled and well packaged. Less than 1% of the surveyed consumers remain undecided. Also, it must be noted that the more the consumer's income level is, the more they are willing to pay a premium for Agonlin oil labeled and well packaged oil.

DISCUSSION

This study identified the specific quality attributes of oil Agonlin. Ten (10) quality attributes of Agonlin oil have been identified and can be classified into three categories according to the typology of consumer economists (Nelson, 1970, 1974; Darby and Karni, 1973): the attributes of search, the attributes of experience and the attributes of belief.

Attributes of Search of the Agonlin oil

These characteristics are, in fact, identifiable by the consumer before the purchase and are linked to sensory

criteria. There are the "flavor", "color" and "texture". These are intrinsic quality attributes that make the character of oil Agonlin. According to Itersum et al. (2002), this typicality is the most important feature that characterizes local products. These attributes are a strong odour of roasted peanuts in contrast to industrial oils whose odor is eliminated by refining (Sanders, 2002). This is one of the reasons of the particularity of the oil. This particularity is strictly dependent on the expertise of traditional processing which is passed down from generation to generation within women of Agonlin region.

Experience attributes of Agonlin oil

They relate to the characteristics that the consumer cannot really know until after purchase, use and consumption. This is the "taste" of the "nutritious character", the "viscosity" and type "less volatile in fire". According to O'Brien (2004), peanut oil excellent oxidative stability makes it a premium oil for cooking and frying; which could explain the type "less volatile in fire". The "nutritious character" of peanut oil could be due to its fatty acids. According to American Peanut Council, The human body does not have any mechanism for synthesizing poly unsaturated fatty acids (Worthington and Smith, 1974; How and Young, 1983). These fatty acids can be provided by peanut oil which possesses high mono and poly unsaturated fatty acids which reduce the risk of coronary heart diseases. However, Agonlin oil has a special taste which differs from that of industrial oils which is removed by refining (Sanders, 2002). This taste is one of the characteristics which make Agonlin oil typicality, explaining the main attribute of the oil.

Belief attributes of Agonlin oil

It is impossible to acquire quality information before or after the transaction hence the belief. These are attributes which indicate the belief of the consumer.This is "Geographical origin" and "natural and local character". These attributes are extrinsic quality attributes (the origin of products, product purity, and safety of food products). The literature shows that consumer expectations are more on extrinsic qualities of local products (Sirieix, 1998). According to Tregear (1998, 2003), the demand for local product is more important in developed countries because it is often associated with extrinsic quality. However, in developing countries, artisanal transformation processes are often associated with poor hygiene and health of uncertain quality. Indeed, Garba et al. (2014) showed that there are two critical points in the traditional manufacturing process of the peanuts that could affect the final quality of the Agonlin oil obtained; it is the milling step and the extraction of the oil. The mastery of these critical points by the application of good hygiene and manufacturing practices has improved technological chart scale production of the oil.

The labeling of Agonlin oil implies better hygiene during the production process and could explain the fact that consumers are willing to pay a premium for this product. This fact could also be explained by the fundamental psychological law of Keynes (1936), which says that, on average, and most of the time, men tend to increase their consumption as their income grows, not in quantity but in quality.

Setting geographical indication would give Agonlin oil value chain actor, the power to control the resource; the right to determine what use is made of it and under what conditions; and, most importantly, the right to exclude others from its use (Strahilevitz, 2006). It would also encourage the preservation of traditional production methods of Agonlin oil, an important factor given that traditional knowledge often reflects the relationship between farming communities and their lands and territories that go far back in history (Rangnekar, 2004). Furthermore, setting Geographical Indication would determine access to the economic use of Agonlin oil based on compliance with production methods of traditional knowledge. Beyond their economic importance geographical indication can also prevent cultural appropriation by ensuring that a product is associated with a geographical location defined where communities have established links between cultures, ancestral lands resources and the environment (Ray, 1998).

However, as for the Ethiopian Coffee and cocoa from Ghana, setting Geographical Indication of Agonlin oil, The implementation of GIs involves a range of tasks, including establishment of legal and institutional structures; maintaining the “quality, reputation or characteristics” of the products; enforcing and defending rights; and developing product awareness in internationals markets. These tasks involve significant cost and effort that would need to be measured and weighed against the expected benefits (De Beer et al., 2014).

Conclusion

Intrinsic attributes that are: aroma, taste, color are the elements of quality distinguish the oil from other Agonlin peanut oils sold in Benin from the perspective of consumers.The specific quality that this oil has is related to Agonlin region since this oil is made through an expertise passed from generation to generation in Agonlin area. Agonlin oil’s reputation extends beyond the Agonlin region.The majority of consumers are willing to pay a premium to appropriate an Agonlin oil of good quality.The first potential element setting GI which is the link to the origin of this product becomes clear through the classification of attributes and the willingness to pay a premium for this product well packaged and labeled. However, other studies such as the assessment of

implicit prices of the attributes of quality and the analysis of social activation to release the potential and weaknesses must be carried out for the effective implementation of the process of Geographical Indication of Agonlin oil ("Agonlinmi").

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Conflict of Interests

The authors have not declared any conflict of interests.

REFERENCES

Adjou ES, Yehouenou B, Sossou CM, Soumanou MM, Desouza CA (2012).Occurrence of mycotoxins and associated mycoflora in peanut cakes products (kulikuli) marketed in Benin. Afr. J. Biotechnol. 11(78):14354-14360. http://dx.doi.org/10.5897/ajb12.324.

Bankole SA, Ogunsanwo BM, Eseigbe DA (2005). Aflatoxins in Nigerian dry-roasted groundnuts. Food Chem. 89:503–506. http://dx.doi.org/10.1016/j.foodchem.2004.03.004.

Bérard L, Marchenay P (2007). Produits de Terroir. Comprendre et agir. CNRS Bourg en Bresse. 61p.

Darby MR, Karni E (1973). Free Competition and the optimal Amount of Fraud. Int. J. L. Econ. 67-86. http://dx.doi.org/10.1086/466756.

Dagnelie P (2007).Statistique théorique et appliquée : inférence statistique à une ou deux dimensions, Tome 2.

Durand C (2009). Les indications géographiques, des outils de développement territorial ? Quatre études de cas en Indonésie. Mémoire présenté en vue de l'obtention du diplôme d'ingénieur de spécialisation en Agronomie Tropicale de l'IRC/ Montpellier SupAgro, Option Valor. Montpellier SupAgro/ Cirad.169p. + Annexes.

Ediage EN, Di Mavungu JD, MonbaliuS, Van Peteghem C, De Saeger S (2011). A validated multianalyte LC-MS/MS method for quantification of 25 mycotoxins in cassava flour, peanut cake and maize samples. J. Agric. Food. Chem. 59:5173–5180. http://dx.doi.org/10.1021/jf2009364

Egal S, Hounsa A, Gong YY, Turner PC, Wild CP, Hall AJ, Hell K, Cardwell KF (2005). Dietary exposure to aflatoxin from maize and groundnut in young children from Benin and Togo, West Africa. Int. J. Food. Microbiol. 104(2):215-224. http://dx.doi.org/10.1016/j.ijfoodmicro.2005.03.004

Elisha B (2004). Influence of maternal nutritional status during pregnancy on birth weight in northern Benin: case of district of Natitingou. Master degree. Faculty of Agronomy. University of Abomey-calavi, Bénin p. 150.

Garba K, Adeoti K, Hodonou A, TidjaniA, Hounhouigan J, Toukourou F (2014). Study of sanitary of groundnut oil and peanut cakes from Agonlin plateau: identification of Critical Control Points during groundnut craft transformation. Microbiol. Hyg. Alim. 26(75):17-21.

Honfo FG, Hell K, Akissoe N, Dossa RAM, Hounhouigan JD (2010). Diversity and nutritional value of foods consumed by children in two agro-ecological zones of Benin. Afr. J. Food Sci. 4:184-191. http://dx.doi.org/10.1007/s13197-010-0150-x

How JSL, Young CT (1983). "Comparison of Fatty Acid Content of Imported Peanuts," Journal of the American Oil Chemists' Society. 60(5):945-947. http://dx.doi.org/10.1007/bf02660204

Ittersum KV (2002). The role of region of origin in consumer decision-making and choice. Thèse de doctorat de Mansholt Graduate School. 185 p.

De Beer J, Armstrong C, Oguamanam C, Schonwetter T (2014). Innovation & Intellectual Property: Collaborative Dynamics in Africa, UCT Press. pp 01-72.

Keynes JM (1936). Théorie générale de l'emploi, de l'intérêt et de la monnaie, édition utilisée Bibliothèque scientifique Payot. p.117.

Le Maux B (2009). '' How Do Policy-Makers Actually Solve Problems? Evidence from The French Local Public Sector'', Econ. Polit. Wiley Blackwell. 21(2). http://dx.doi.org/10.1111/j.1468-0343.2009.00343.x

Nelson P (1970). Information and Consumer Behavior, J. Polit. Econ. 78. 311-329. http://dx.doi.org/10.1086/259630

Nelson P (1974). Advertising as Information. The Journal of Political Economy, The University of Chicago Press, 82(4):729-754. http://dx.doi.org/10.1086/260231

O'Brien RD (2004). Fats and Oils. Formulating and Processing for Applications, CRC press, Boca Raton, USA. http://dx.doi.org/10.1002/ejlt.200490042

Rangnekar D (2004). Demanding Stronger Protection for Geographical Indication, UN Discussion Paper Series, Maastricht, Netherlands.

Ray C (1998), "Culture, intellectual property and territorial rural development", Sociologia Ruralis, 38(1): 1–19. http://dx.doi.org/10.1111/1467-9523.00060

Sanders TH (2002). Groundnut (peanut) oil, in: Gunstone, F. D. (Ed.), Vegetable Oils in Food Technology. Composition, Properties, and Uses, Blackwell Publishing Ltd, Oxford, UK. pp. 231–243.

Sirieix L (1998). Mieux comprendre le choix des produits alimentaires par le consommateur : un enjeu pour l'agriculture et l'industrie agro-alimentaire, in Agriculture et alimentation en quête de nouvelles légitimités, ed. MicletetSirieix L. etThoyer S., Paris, Economica.109-133.

Strahilevitz, LJ (2006), "Information asymmetries and the rights to exclude", Michigan Law Review. 104(8), 1835-98.

Tregear A, Kuznesof S, Moxey A (1998). Policy initiatives for regional foods: some insights from consumer's research. Food Policy. 23(5):383-394. http://dx.doi.org/10.1016/s0306-9192(98)00044-x

Tregear A (2003). From Stinlon to Vimto: Using Food History to Rethink Typical Products in Rural Development. Sociol.Ruralis. 43(2) :91-107. http://dx.doi.org/10.1111/1467-9523.00233

Vandecandelaere E, Arfini F, Belletti G, Marescotti A (2009). Territoires, produits et acteurs locaux : des liens de qualité. Guide pour promouvoir la qualitoires, produits et acteurs locaux : des liens de qualité. Guide pour promouv ORIGIN. 220p.

Worthington RE, Smith DH (1974). Modification of Peanut Oil Fatty Acid Composition by Foliar Applications of 2',2'-dimethylsuccinohydrazide (Kylar). J. Agric. Food Chem. 22(3):507-508. http://dx.doi.org/10.1021/jf60193a056