Indigenous Practices in the Use of Wild Yam or Karot *(Dioscorea hispida* Dennst.)

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Abstract

The indigenous practices in the use of wild yam or 'karot' (Diosgoreg hispilg Dennst.)" *and some selected personal variables of involved upland dwellers were described in this study.*

Oldfolks comprised the bulk of karot gatherers. They were mostly females, married, elementary graduates, farmers and earning a monthly income of less than 3,000.

Processing of 'karot' is usually done near river banks where flowing water is *the hey element to detoxify and transform the corms into edible material ready for cooking. Processing is a tedious process and because of this, wholesale gathering is restrained maintaining 'karot' gathering and processing at family subsistence levels. Correspondingly,respondents do not see marked and potential profit from 'karot' as it is scarce, a general engagement of the local community and seasonal, that is, gathering is done few months before rice harvest.*

'Karot' is a way of life, yet, is being regarded as food for the poor because the more wealthy sector of the local upland communities prefer imported items and commercial goods available at the market.

There was no indication that research generated information and technology had been incorporated with the indigenous system of 'karot' process and food utilization.

On the whole, karot practices was placed at the moderate level. Four socio-demographic variables namely: age. Gender, educational attainment and monthly family income were significantly correlated with 'karot' practices. On the other hand, civil status, number of children, ethic group and occupation were not significantly correlated with practices.

Introduction

Background of the Study

Tuber is a Latin term for a lump or swelling and refers to the bulky terminal portion of an underground stem or rhizome of a plant with modified nodes, buds, and leaves. The functions of tubers are food storage and vegetative reproduction. The most commonly stored food is starch.

Yams are the tuberous roots of several vines of the genus *Dioscorea,* family Dioscoreaceae. Used like potatoes. they are major tropical root crops and are grown in warm, temperate, and tropical regions around the world. Generally, the starchy yam tubers resemble the sweet potato, but the two are not even distantly related.

Wild yam or "karot" *(Dioscorea hispida* Dennst.) is a nutritious indigenous root crop eaten in cultural communities as rice substitute. Regardless of origin, "karot" has become a part of the cultural heritage in the hinterlands. In Mindoro Oriental, the Mangyans called this root crop *"nami",* and is a normally part of the diet of this southern cultural community. To them, *"nami"* is more than a staple food – it is a way of life.

The monsoon rains in the months of June and July ushers the natural yearly growth of karot in the mountain municipalities. Denizens survive the odds of lean months usually on the third quarter of the year waiting for the rice harvest by hunting wild yam.

"Karot" is a root crop similar to a grated sweet potato with yellow and white colors. Once pre-processed, it can be cooked easily.

Research can help to hamess the potentials of "karot" as source of starch, flour and other glucose products.

Statement of the Problem

This investigation tried to provide answers to the following questions:

1. What is the socio-demographic profile of the respondents in temms of age, gender, number of children, ethnic group, educational attainment, occupation. and monthly income?

2. What are the indigenous practices on wild yam search, preparation, utilization. distribution and consumption?

3. Is there a significant relationship between the socio-demographic profile and level of indigenous practices on wild yam?

Objectives of the Study

This investigation attempted to establish the:

Socio-demographic profile of the respondents in terms of the following: age. gender, number of children, ethnic group, educational attainment, occupation, and monthly income.

2. Indigenous practices of the respondents on wild yam search, preparation, utilization, distribution and consumption.

3. Relationship between the socio-demographic profile of the respondents and their level of indigenous practices on wild yam.

Hypothesis

There is no significant relationship between the socio-demographic profile of the respondents and their level of indigenous practices on wild yam.

Scope and Delimitation of the Study

This study dealt only with the indigenous practices on wild yam or 'karot' among cultural communities. Residents of selected and identified far-flung barangays engaged into this indigenous 'karot' practice were taken as respondents. Four of the seven upland municipalities clustered as one namely Banayoyo, Lidlidda, Galimuyod and Salcedo were targeted in this study. Personal related variables were delimited to find out their impact to yam search, preparation, utilization, distribution and consumption.

Review of Literature

"Karol" is an Ilocano term for wild yam *(Dioscorea hispida* Dennst.). For Tagalogs. they call it "**nami**". It is found growing wild, chiefly in thickets and forests, at low and medium altitudes throughout the country. It is rarely cultivated. It also thrives in India, southwestern China, Formosa, Malaya and New Guinea.

"Karot" is a twining vine, arising from tuberous roots, and reaching a length of several meters. The stems are covered with short, sharp spines. The leaves are 3-foliolate, and the leaflets 12 to 20 cm long, somewhat hairy, the lateral ones oblique, oblong-ovate, the terminal one equilateral, oblong to oblong ovate. The panicle is axillary, slender, hairy, 12 to 20 cm long. The flowers are small. The capsule is oblong, and about 5 cm long.

The flesh and sap of the tubers are yellowish. Blanco says that the yellow juice is used for bleaching clothes and abaca fiber. Although the poisonous features of the tubers are known in the Philippines, deaths often occur from eating "karot."

According to Gorter, the tubers contain a poisonous alkaloid, *dioscoreine*. Maranion analyzed the mineral content of nami, and his figures show that the tubers are good sources of phosphorous, calcium and iron.

Ridley in citing Schutte (1893:30), states that *dioscoreine* is toxin resembling *picrotoxin*. It is a paralysant of the nervous system but not a protoplasmic poison. Leyva and Gutierrez conducted toxicological studies of "nami", and concluded that its toxicity is due to an alkaloid alone. They likewise found out that besides its physiological actions, "nami" has narcotic effect.

According to Guerrero, the tubers, raw or cooked are used as an anodyne and maturative in cases of tumors and buboes, and also against arthritic and rheumatic pains and similar afflictions. Burkill cited Holmes who reported that in Johore. India, decoction of the tuber is used as an alternative and diuretic in chronic rheumatism. Burkill further reported that the juice of the tubers is often used in criminal poisoning and is combined with *Antiaris toxicaria* in the preparation of arrow poisions. Manresa mentioned the use of the tubers as a cure for myiasis of the scrotum of carabaos.

Conceptual Framework

Figure 1 shows the conceptual schema as used in this study. Socio-demographic profile of the respondents influences their level of indigenous karot practices.

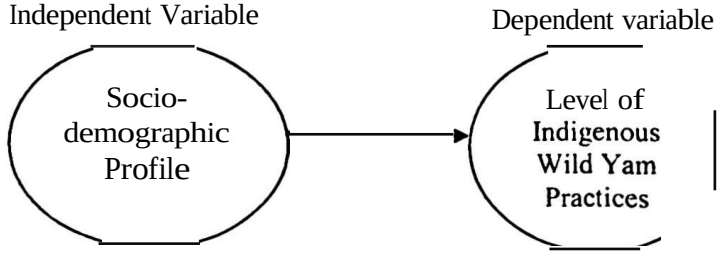

Figure 1. Conceptual Framework.

Operational Definition of Terms

The following terms are hereby operationally defined to give clearer understanding about the present study.

Indigenous Practices. They refer to the traditional and cultural ways of preparing. utilizing, distributing and consuming anything related to the life of the respondents.

Yam. This refers to the specie that belongs to the genus *Dioscorea,* Dioscoreaceae family. Yams are the tuberous roots.

Wild Yam or Karot. This refers to the wild tuber that grows in the mountains with these characteristics: brown or black skin and flesh that is white, purple, or red with itchy pulp.

Socio-demographic profile. The personal characteristics attributed to the respondents like age, gender, number of children, ethnic group, educational attainment, occupation and monthly income.

Age . The number of years of existence of a respondent since birth.

Sender. The physical distinction whether a male and a female.

Number of children. This refers to the total number of family members or offspring found in each respondent's family.

Ethnic group. The tribal or racial cluster of the respondents whether they are Ilokano, Bago, Kankanaey, Igorot, Itneg and others.

Educational attainment. The highest scholastic achievement of the respondents at the time of the study.

Occupation. The means of subsistence of the respondents in raising their family.

Monthlv income. The total estimated monthly earnings derived by the parents from various jobs.

Yam search. The process of looking or hunting wild yam in the mountainous parts of upland municipalities.

Yam preparation. The act of setting up and organizing activities for the artisanal extraction of food material from wild yam or "karot".

Yam distribution. The process of sharing-out or allocating wild yam either by barter, selling or norms of reciprocity.

an utilization. The processes involved in the use of yam as practiced in each individual household in the study.

Yam consumption. The respondents' capability to munch through yam as an alternative food supplement.

Assumptions of the Study

The researchers worked under the following assumptions:

1. The respondents are the best sources of information about indigenous wild yam or karot practices.
2. The questionnaire used is valid and reliable.
3. The interview was done under normal conditions.

Methodology/Procedure

Research Design and Procedure. A descriptive method of research was employed in this study. Survey, interview, observation and documentary analyses were likewise used to improve the outcome of the said study. Local community heads served as resource persons in the identification of residents who actually engage on wild yam or karat search, preparation, utilization, and distribution.

Sampling. From the list provided, stratified random sampling proportionate to the sampling population was taken. The 431 respondents obtained with the following breakdown: Salcedo - 241, Lidlidda - 103, Galimuyod – 39 and Banayoyo - 50 sample respondents.

Data Gathering Instrument. A researcher-made questionnaire was the main tool used in eliciting the data needed in this study. It was pre-tested at San Emilio Ilocos Sur to validate its content and reliability.

Statistical Treatment of Data. The following were statistical tools used in this study: 1.Frequency and percentage count to deal with the personal aspect of the respondents; 2.Weighted mean to determine the level of practices of the respondents on wild yam or karot search. preparation, utilization and distribution, and 3. Pearson product moment correlation to determine the relationship between the dependent and independent variables of the study.

Data Measurement. To dctennine the level of practices of the "karot" gatherers as well as the interpretation of their responses, the following scale and norms were used:

Interval	Descriptive equivalent	Norm
4.21-5.00	Always (A)	Very High (VH)
3.41-4.20	Often (O)	High (HI)
2.61-3.40	Sometimes (M)	Moderate (M)
1.81-2.60	Seldom (S)	Low(L)
1.00-1.80	Very Seldom (VS)	Very Low (VL)

Results and Discussion

Profile of the Respondents

Table I presents the socio-demographic profile of the respondents - their age, gender, civil status, number of children, ethnic group. educational attainment. occupation and monthly income.

Table 1. Demographic profile of the respondents.

DEMOGRAPHIC PROFILE	FREQUENCY	PERCENTAGE (%)
Age		
20 and below	5	1
21-30	**19**	5
31-40	80	**21**
41-50	118	31
51-60	80	21
61-70	55	**15**
71-80	13	4
above 80	6	2
Total	**376**	**100**
Gender		
Male	**186**	**43**
Female	**242**	57
Total	**428**	100
Civil Status		
Single	34	8
Married	347	81
Widow	38	9
Separated	7	2
Total	426	100

Table 1 continued

DEMOGRAPHIC PROFILE	FREQUENCY	PERCENTAGE (%)
Number of children		
1-2	19	6
3-4	70	20
5-6	120	35
7-8	76	22
9-10	43	13
11-12	10	3
13 and above	2	1
Total	**340**	100
Ethnic Group	f	
Ilokano	203	53
Bago	179	41
Itneg	26	6
Igorot	23	5
Total	**431**	**100**
Educational attainment		
No schooling	34	8
Elementary undergraduate	124	29
Elementary graduate	141	32
HS undergraduate		
HS graduate	107	25
Vocational	12	3
College graduate	7	2
Post graduate studies	1	1
Total	**426**	100
Occupation		
Farming	382	96
Carpentry	4	1
Driving	6	2
Fishing	2	0.5
Teaching	2	0.5
Total	**396**	100
Monthly income		
1,000 — 2,999	193	50
R3,000-, 999	139	36
R5,000-P 6,999	44	.11
7,000 — 8,999	5	1
R9,000 -P 10,999	2	1
p11,000 and above	3	1
Total	386	100

Age. Most of the respondents were within the age bracket of 41-50 years with a frequency of 188 or 31 percent. Though many of the respondents were 40 years old and below. this type of subsistence activity is a primary livelihood among

older folks. This implies that the old folks see the economic value of engaging into wild yam amidst getting absorbed into the mainstream economy.

Gender. Out of the 428 respondents, there were more females (242 or 57%) who were engaged in "karot" production as food than the males. This could be interpreted that the women are more pre-occupied with their roles of preparing food for family especially for the children since most of the husbands were either farmer's or non-farm job earners or not engaged in "karot" activities.

Civil Status. Married respondents (347 or 87%) outnumber the other groups engaged in "karot" gathering. Since "karot" is used as a substitute for rice, it is imperative and normal for parents to seek other sources of food for the family.

Number of Children. Most of the respondents had 5-6 children to feed, with a frequency of 120 or 35 percent. This implies that children provide family labor in the hinterlands.

Ethnic group. More than half (203 or 53%) of the respondents were "Ilocanos". However, if the "Bagos" are added, they comprised more than 90 percent. This implies the mountain dwellers are an epitome of industry, patience and hardworking just like their counterpart Ilocanos of the lowlands.

Educational Attainment. Out of the 426 respondents, 141 or 32% were elementary graduates followed by 124 or 29% elementary undergraduates. This implies the hardships of earning an education during their time since majority of the respondents are above 40 years old. Only few schools are constructed in the upland municipalities. School children have to walk several kilometers just to reach the nearest educational institution.

Occupation. Farming with a frequency of 382 or 96% is still the principal occupation in the upland municipalities. Subsistent "karot" hunting is a survival mechanism in the hinterlands. Life revolve around the mountains wherein residents draw subsistence.

Monthly income. Fifty percent (50%) or 193 respondents were earning a monthly income of less than P3,000.00. Farming alone is not enough to secure the family food supply since respondents still engaged into "karot" as an additional food for the family.

The Indigenous Practices of the Respondents on Wild Yam or "Karot"

Table 2 presents the respondents' level of wild yam practices along with the different processes like yam search, preparation, distribution, utilization and consumption.

Table 2. Item mean and the descriptive equivalent of the respondents' level of karot practices .

PRACTICES	MEAN SCORE	DESCRIPTIVE LEVEL
Hunting		
I. Knowledge of the leaf venation and stem configuration of the karot.	4.12	H
2. Informing first the owner of the mountain before getting karot.	3.33	M
3. Going back to site where karot was gathered in the previous years.	4.01	H
4. Starting the search of karat on the first week of October.	3.39	M
5. Making sure the river's current is no longer too strong before attempting to go and search/dig karat.	3.25	M
6. Asking a buddy or companion in karat hunting	3.57	H
7. Setting on full moon in getting wild yam.	1.75	VL
8. Avoiding risky places in getting karot	3.34	M
Weighted **mean**	3.35	M
Digging		
I. The use of bolo in getting karot.	4.09	H
2. Making sure that the surrounding of the karat vine is well cleaned.	3.70	H
3. Carefully taking off the top soil so as not to hurt the crop.	4.30	H
4. Making sure that the environs is wide for digging.	4.01	H
5. Pulling the stem of the vine in getting its root crops.	1.88	L
6. Trimming the leaves and wisps of the vine before digging.	2.77	M
7. Leaving behind smaller root crops of the vine for another season of harvest.	4.30	VH
Weighted Mean	**3.58**	**H**

Table 2 continued

PRACTICES	MEAN SCORE	DESCRIPTIVE LEVEL
Bringing Home the Karot		
I. Personally bringing home karot or asking other members of the family to bring home karot.	3.82	M
2. Removal of bark of karot at the site and dumped on the riverbank.	3.91	H
3. Usage of sack or other container in bringing home karot.	4.13	H
4. Carrying harvest manually and alone.	2.61	M
5. Dumping karot in a safe place like kamarin/ pakarso/ kalapaw for some time before attempting to bring them home.	2.24	L
6. Asking a neighbor to help in carrying the bulk with the same arrangement when he harvests karot.	2.68	M
Weighted mean	**3.23**	**M**
Experiences		
I. Have been stung by big red ants ("Ampipit")	4.09	H
2. Swollen body parts due to the sting of mountain mosquitoes	3.73	H
3. Bitten by snakes	1.50	VL
4. Experienced cuts and incisions in getting karot	3.93	H
5. Hands and other body became itchy.	4.05	H
6. Cut hands in peeling off and slicing karot into finer bits.	3.81	H
7. Prolonged nausea after eating karot.	2.07	L
Weighted Mean	3.78	H
Yam Preparation		
A. Yam Peeling	**X**	**DL**
I. Removal of bark with hand gloves.	3.16	M
2. Peeling off the harvested "karot" with bare hands.	2.92	L
3. Slicing "karot" with a knife or improvised grater.	4.10	H
4. Cellophane is used in soaking the scraped "karot".	3.17	M
5. Situating the grated karot in a net in immersing them in the river to wash away its poisonous juice.	3.62	H
6. Placing the sliced "karot" in a container e.g. jar	4.69	VH
7. Utilization of a lukewarm water to marinate the scraped "karot".	4.10	H
8. Adding salt to the stored karot for 2-3 days.	3.68	H
9. Follows a standard ratio of salt to water mixture in curing the "karot".	3.96	H

Table.2 continued

PRACTICES	MEAN SCORE	DESCRIPTIVE LEVEL
10. The use of the same water for the second try in soaking other grated "karot".	4.31	VH
11. Stamping slowly the "karot" through the feet.	4.69	VH
12. Use of a wooden mallet in removing the juice of the "karot".	2.03	L
13. Repetition of the whole process for several times until karot turns yellow	4.64	VH
14. Use of indigenous leaves to dye the karot.	1.41	VL
Weighted mean	**3.61**	**H**
Yam Cooking		
1. Placing karot atop a nearly cooked rice.	3.45	H
2. Sauted	3.14	**M**
3. Cooked with coconut milk	2.96	M
4. Used in padarusdos	2.87	M
5. Steamed	3.99	H
6. Used to make Lubi-lubi	3.95	H
7. Mixed with rice	3.18	M
8. Added with sugar or milk	2.98	M
Weighted mean	**3.31**	**M**
Yam Distribution		
Yam Selling		
1. Selling the karot tuber as dug	2.14	**L**
2. Selling the karot after grated.	1.87	**L**
3. Converting karot into food before selling.	3.04	**M**
4. Subdividing the karot to be sold.	2.82	**M**
5. Selling it around the neighborhood or in the market.	2.77	**M**
6. Bartering it with any commodity	3.31	**M**
7. Accepting credit from others for the sold yam	2.36	L
8. Transacting to a middleman to sell karot	2.39	L
9. Selling the karot on a house-to-house basis.	2.78	**M**
Weighted mean	**2.61**	**M**
Yam Utilization		
Yam Preservation		
1. Solar drying	3.89	H
2. Grinding (Rebbeken)	3.65	H
3. Pounding (Baywen)	3.65	H
Weighted mean	3.73	**H**

Table 2 continued

PRACTICES	MEAN SCORE	DESCRIPTIVE LEVEL
Yam Consumption		
Uses of Yam		
I. It's used as a rice substitute	3.86	H
2. For Bleaching (Pagalmidor)	*1.91*	L
3. In making cake	2.14	L
4. An ingredient for Omelet	2.01	L
5. Used as coat when prying chicken or meat	1.79	VL
6. Used as a medicine to cure animal diseases	1.62	VL
7. Used as curatives for boils	1.93	VL
8. Used to remove clothes stains	2.15	L
9. The used water is for insect repellant.	1.53	VL
Weighted mean	**2.11**	**L**
Indigenous Wild Yam Practices		
Yam Search	3.49	H
I Hunting	3.35	M
2. Digging	3.58	H
3. Bringing Home the Karot	3.23	M
4. Experiences	3.78	H
Yam Preparation	3.46	H
I. Yam Peeling	3.61	H
2. Yam Cooking	3.31	M
Yam Distribution	2.60	L
Yam Utilization	3.70	H
Yam Consumption	2.10	L
Grand Mean	3.07	**M**

Note: VH- Very High; H- High; M- Moderate; L- Low; VL- Very Low

Yam Search. The respondents were moderate in wild yam hunting as supported by a computed weighted mean of 3.35. For seasoned "karot" gatherers, they often know the leaf venation and stem configuration of the vine, be it near or far (C=4.12).

Gatherers usually go back to the site where they gathered "karot" in the previous years (C = 4.01). A gatherer has a buddy or companion preferably a member of the family (C = 3.57). This could infer familiarity of the place and logical efficiency in doing the job, **i.e.,** less risky, near the river, sure stock of "karot" tubers. "Karot" gatherers are adept in their knowledge on the trail and the concomitant characteristics of the vine and the mountain.

Along their habit in digging for wild yam. the respondents have high level of indigenous practices with a computed weighted mean of 3.58. In digging for wild yam, only the bolo, is used (X= 4.09). The bolo is versatile in trimming the thorny stem. and allows extra care in hollowing out the root crop (X = 4.30) by means of widening the area to be excavated (Y = 4.01). Gatherers always leave behind smaller tubers to ensure mature tubers in another harvest season the following year (X = 4.30). This implies that gatherers only dig enough tubers for subsistence; they don't intend to do a wholesale "karot" digging.

Relative to their practices in bringing home dug "karot", the respondents are moderate as collaborated by the computed weighted mean 3.23. Removal of "karot" barks is done near the river (5 = 3.91). Debarked karot is also soaked there for detoxification. In bringing home the said "karot", they use a container preferably a sack (X = 4.13) and personally bring them home (X = 3.82). This means that the process of preparing pre-cooked "karat" is usually done near the riverbanks not at home due to the presence of running water. Thus, gatherers only bring home the "karot" in its pre-cooked form.

Experiences on wild yam search was leveled high (5 = 3.78). Gatherers often suffer from swollen body parts due to big red ants bites (X = 4.09), mountain mosquitoes (5 = 3.73). Likewise, cuts and incisions (5 = 3.93), most especially incurred while peeling off and slicing the "karot" into finer bits (X = 3.81) and itchiness (X = 4.05).

In summary, the practice of the respondents in their wild yam search is ranked high with a grand mean of 3.49. This implies that gatherers are reasonably restrained in looking, and raking for many "karot" tubers since the processes involved in gathering and preparing it as a food is tedious.

Yam Preparation. The level of indigenous practices of the respondents in the preparation of yam as food is high with a computed total weighted mean of 3.46. The processes involved in the peeling off (= 3.61) wild yam are as follows: they slice the tubers of the "karot" with a knife or improvised grater (X = 4.10); place the grated tuber in a net immersed in the river to detoxify (= 3.62); after which they place the sliced "karot" in a container preferably a jar (5 = 4.69); with a lukewarm water and salt solution for two to three days to smoothen the grated tubers (X = 4.10). The same salt solution and container is used to soak other grated tubers (= 4.31). With the use of their bare feet, they slowly and carefully stamp off the tubers to remove the poisonous sap (5 = 4.69). This, they repeat for many times until the "karot" turned into yellow.(4.64) that indicate the "karot" is ready for cooking. The preparation of "karot" as a food is laden with many rigorous steps.

Practices in cooking wild yams are placed at a moderate level as supported to by a computed weighted mean of 3.31. Respondents moderately cook the "karot" with coconut milk (5 = 2.96), and in "padarusdos" (5= 2.87). A more common practice was place the prepared "karot" atop a nearly cooked rice (=3.45) or cook through steam (S =3.99). "Karot" is also used as an ingredient in making "lubi-lubi" (= 3.95). The respondents know many ways how the primed "karot" is to be prepared or cooked as a food.

As a whole; the practice of the respondents in their yam preparation as a food was leveled high with the computed grand mean of 3.46. This implies the required persistence one has to go through in preparing the "karot" as a rice substitute. Respondents are especially endowed with abilities to maximize the potentials and economic value of the tuber by discovering many recipes.

Yam Distribution. The table shows that the respondents moderately sell yam as food as supported by the computed weighted mean of 2.61. Little that they sell the "karot" tuber as is (=2.14); after it is grated (X = 1.87); subdivide the "karot" to be sold (X = 2.82); in the neighborhood or in the market (5 =2.77): or transacting to a middleman to vend (= 2.39); and, accepting credit from others for the sold yam (X = 2.36). This implies that the "karot" prepared as a food is solely for household consumption. Gatherers don't see potential profit from selling yam to the consumers. This may be due to the fact that almost all the residents of the place are engaged in "karot".

Yam Utilization. The three ways of yam preservation have a computed weighted mean of 3.73 and is described as high. The respondents often preserve yam through sun drying (X = 3.89); grinding (=3.65) and pounding (X = 3.65).

Food extracted from yam tubers are conserved for future use since it was noted that "karot" is substitute for rice. Moreover, gatherers could only engage into this type of activity during the waiting months for rice harvest.

Yam Consumption. The indigenous practice of the respondents along the Jses of "karot" has a computed weighted mean of2.11 and is categorized as Low. It is noted here that "karot" is often used as a substitute for rice (= 3.86). This may be due to the fact that gatherers have big families to feed and oftentimes rice supply for the family for the whole year is not enough. In other cases, "karot" is used as bleach (X = 1.97), stain remover (X =2.15), in making omelet (5= 2.01) and cake (=2.14). Moreover, they rarely use it as coating for meat (X = 1.79), as medicine to cure animal diseases (X =1.62), as curatives for boils (x = 1.93). and as insect repellant (X = 1.53). This implies that the most common use of the "karot" as identified by the respondents is on its home care and food values. This further implies that previous research findings were not properly disseminated and

acted upon. This maybe due to the general reliance on commercial items for food ingredients, medicines to cure diseases, pesticides to drive away insects and the like.

Summary

Two of the five identified yam practices, namely yam preparation (X = 3.46) and yam utilization (X = 3.70) were often acted out by the "karot" gatherers though they moderately searched for yam (X = 3.38). However, the respondents distributed (X = 2.60) and consumed (X = 2.10) yam on a subsistent basis. As a whole, wild yam practices was placed at the moderate level with a computed grand mean of 3.07. This implies that gatherers are restrained to engage in a wholesale "karot" production. They believe that affluent sector in the local community do not patronize the "karot" venture because of general dependence on local and international commercial products. However, "karot" gathering has become a way of life in the uplands.

Four out of the eight variables used in this study have a significant relationship with the respondents' level of indigenous "karot" practices.

With the computed r,, of 0.181, the age of the respondents was highly correlated with their level of indigenous "karot" practices. This implies that more is expected from the older people to engage in this type of activity. This further infer that as a person grows older, he or she is more inclined to practice the indigenous "karot" processing.

Table 3. The correlation between the socio-demographic profile of the respondents and their level of indigenous karot practices.

PROFILE	r	DECISION
Age	.181	Reject Ho/ Highly significant
Gender	.105	Reject Ho/ Significant
Civil status	.044	Accept Ho/ Not significant
Number of children	.050	Accept Ho/ Not significant
Ethnic group	.003	Accept Ho/ Not significant
Educational attainment	-164	Reject Ho/ Highly significant
Occupation	-.031	Accept Ho/ Not significant
Monthly Income	.171	Reject Ho/ Highly significant

Note: - Corrclation is significant at the 0.0I level (2-tailed)
Correlation is significant at the 0.05 level (2-tailed)

The computed r_s which is 0.105 indicate that gender is significantly correlated with "karot" practices. This implies that the females are more deeply engaged in "karot" gathering than the males.

Educational attainment is highly correlated with their level of indigenous "karot" practices, with a computed r_s of -.161. This implies that those who have higher educational attainment are less involved in the "karot" practice.

With the computed r_s of 0.171, the monthly income of the respondents is highly correlated to the level of indigenous "karot" practices. This implies that the more the respondents engage in "karot", the higher their monthly income tends to become one. Gatherers could sell "karot" in the neighborhood as well as in the market.

Socio-demographic variables like civil status, number of children, ethnic group and occupation with the computed r_s of .044, .050, .003 and -.031 respectively do not show any significant relationship with the respondents' level of indigenous "karot" practices. This implies that "karot" gathering in general has no bearing on their socio-economic status.

Conclusions

Based on the aforementioned findings of the study, the following conclusions were drawn:

Socio-Demographic Profile of the Respondents

Old folks comprise the bulk of "karot" gatherers who could see the value of the indigenous engagement amidst seeming contradictions with modern food preparations and information technology.

There are more females engaged in "karot" production as food than males. Women hold greater responsibility in securing the family food supply. Married respondents are predominantly engaged in "karot" due to dearth of opportunities in schools.

Fanning is still the principal occupation that people of the upland municipalities are engaged into. Looking for "karot" as an alternative food could be an extended farm practice the fact that an estimated income of less than three thousand pesos a month may not be enough to secure food for the family.

Indigenous Practices of the Respondents on Wild Yam or Karot

"Karot" gatherers know the trail and the concomitant characteristics of the vine and the mountain. Using a bolo, they only dig enough tubers for their own consumption; they don't intend to do a wholesale "karot" digging. The process of preparing "karot" as a food is usually done near the riverbank and not at home. Running water, as their most important resource is always present in the site. Hence, they only bring home the "karot" when primed and ready for cooking.

The "karot" gatherers are reasonably restrained in looking, and raking for many "karot" tubers since the processes involved in preparing it as a food is tedious and unprofitable. It remains a subsistent activity. The preparation of "karot" as a food supplement is laden with many rigorous steps. The gatherers do not see marked and potential profit from selling "karot" to the consumers because most of the residents are engaged in "karot".

Food extracted from wild yam tubers are conserved either by pounding, grinding or sun drying which make a perfect substitute for rice. "Karot" is seasonal and gathering falls in the months where rice are about to be harvested. Other uses of the "karot" as found out by previous researchers are not properly disseminated and acted upon. This maybe due to total reliance on commercially prepared products available in the market like food ingredients, medicine to cure diseases, pesticides and the like which "karot is found to be effective substitute.

The level of wild yam practices is placed at the moderate level. "Karot" gatherers are restrained in engaging into a large scale production. They believe the rich ones do not patronize "karot" because of their total dependence on the local and international markets for their wants and needs. "Karot" entails grueling processes. Yet. to the gatherers. it has become a way of life.

Correlation Between the Socio-demographic Profile and the Respondents' Level of Indigenous Wild Yam Practices

Four socio-demographic variables namely, age, gender, educational attainment and monthly income of the family of the respondents are significantly correlated with their indigenous "karot" activities. Females are more engaged in "karot" gathering than the males.

Those who have higher educational attainment are less involved. The more the respondents engage in "karot", the higher their monthly income tends to become. Gatherers could sell their surplus in the neighborhood as well as in the market.

Socio-demographic variables like civil status, number of children, ethnic group and occupation don't show any significant relationship with the respondents' level of indigenous "karat" practices.

Recommendations

The university administration particularly it's Candon City Campus must spearhead campaign or infonnation dissemination about the noted uses of "karat" among the residents of upland municipalities.

Since many of the gatherers have domesticated "karot", the Department of Environment and Natural Resources (DENR) should look into the feasibility planting in the lowlands utilizing modem technology. The Department of Science and Technology (DOST), being the forerunner of assisting industry related projects should assist upland folks on alternative food processing using "karot".

DOST should likewise devise ways how to effectively remove the poisonous sap of the tuber so it would be easier for the "karot" gatherers to prepare it as a food.

Experiments should be conducted on the potential use of the extracted toxin as botanical pesticide and as alternative medicine.

The University should at once start the second phase of the research - that is to produce starch out of "karot" and look into its profitability.

References

BLANCO, M. Flora de Filipinas. Manila

BURKILL. I. H. *A Dictionary of the Economic Products of the Malay Peninsula.* London Two Volumes.

COURSEY, D. G., 1979- *Yams.* 2nd ed..

GORTER, K. *Sur la Dio"coreine. Ann. Jard. Bot. Buiten:org.* Suppl. 3 Part 1.

GUERRERO, LEON MA. *Medicinal Uses of Philippine Plants.* Philip. Bur. Forestry Bull. 22.

LEYVA, J.F. AND E. GUTIERREZ. *Toxicological Studies of Nami, (Dioscorea hispida dennst.)* Philip. Med. Assoc. Jour. 17.

MANRESA, M. *Note on Dioscorea hispida Dennst. As a cure for myiasis.* Phil. Agric. Bull.

MARANION, J. *Nutritive mineral value of Philippine food plants (Calcium, phosphorous, and iron contents).* Philip. Jour. Sci.

QUISUMBING, E. 1978. *Medicinal Plants of the Philippines.* Caloocan City :Katha Publishing Co. Inc.

RIDLEY, H.N. *The Poisonous plants of the Malay peninsula.* Agric. Bull. Malay Peninsula No.8.