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Survey on Traditional Feeding Practices of Swine in Pudtol, Apayao

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Abstract: **The study was conducted to survey on traditional way of feeding practices of swine raisers in Pudtol, Apayao. Specifically, it aimed to investigate on the different traditional feedstuff used, to conduct an interview on the insights or observation of the swine raisers with regards to the use of traditional feedstuff, to know the preparation of traditional feedstuff and to identify the materials used in feeding.**

The study made use of the descriptive survey method of research with key informants, interview, and observation as data-gathering tools. Ten(10) swine raisers per ten(10) barangays namely: Lt. Balag, Aga, Malibang, Mataguisi, Upper Maton, Lower Maton, Lydia, Doña Loreta, Swan, and San Mariano were taken as respondents.

Traditional feedstuffs which were still utilized by the swine raisers of the municipality as feeds for their pigs namely: *Gabi,(Arum esculentum Linn), Kamoteng Kahoy (Manihot esculenta), Camote (Ipomoea batatas), Kangkong (Ipomea aquatica) ,Waterlily (Nymphhaeaceae stellate), Kuhol (Hydroocotyle thundergiana Spreng.), Banana (Musa sapientum), Papaya (Carica papaya), Squash (Cucurbita maxima) ,Coconut (Cocos nucifera), Opuntia ovate (Maihueni opsisovata) ,Spinach (Spinacia oleracea), Corn (Zea mays), Tigui, Kullo-kullot* were identified. These feedstuffs are found along riverside, riverbank, garden, backyard, roadside, creek, and in forest.

Among the 100 respondents, most of the swine raisers in Pudtol belong to the age bracket age of 30-50 years old. Majority of the respondents involved in swine raising were females. In terms of educational attainment only 4% of the respondents were college graduate. Majority of the respondents were Isnag with a percentage of 59%, followed by Ilocano, 27%, and Ibanag 10%. The total population of swine in Pudtol, Apayao is 201 heads. Majority of the swine are located in Brgy. Lydia.

In terms of utilization rate of the traditional feedstuff, most of the respondents used *gabi/taro*, which are mostly found in backyard. Traditional feedstuffs were prepared through washing, peeling, chopping and cooking while some are prepared raw. The Ration Composition of the rice bran and traditional feedstuffs has a frequency of 70 out of 100 (70%), while the combination of Rice bran, commercial feeds and traditional feedstuffs has a frequency of 30 out of 100(30%).None of the swine raisers feed their pigs with commercial feeds alone.

For the feeding frequency, 60% of the swine raisers fed their pigs thrice a day during the starter stage while 90% of them fed their pigs twice at the growing stage.

The respondents have different feeding troughs used. Fifty-eight percent (58%) of them used the wooden trough, nineteen percent (19%) utilized the concrete feeding trough, Fifteen percent (15%) used the rubber feeding trough which is made out of the unused car wheel, while eight percent (8%) made use of the plastic galloon trough. Majority of the respondents fed their pigs with traditional feedstuff at the age of 3 months and above.

Based on the study, it is concluded that the swine raisers in the municipality of Pudtol generally adopts traditional way of feeding their pigs. Feeding of pigs natively with available feeds and wastes is a common practice to reduce the feeding cost. The researcher concluded that the pigs fed with traditional feedstuffs are healthy and are strong in resisting diseases. Traditional feedstuffs help promote the growth of swine because even without mixing with commercial feeds and rice bran, both native and hybrid pigs grow, however at a lower rate. It only requires prudence in gathering and preparation of feedstuff.

Based from the conclusion, the following recommendations are derived: 1.) to sustain the use of traditional feedstuff for feeding native, crossbreed, and hybrid pigs instead of the use commercial feeds. 2.) to package the study as an Instructional Materials in the integration of IPED in BS Agriculture curriculum. 3.) to conduct study on other materials used as traditional feedstuff.

Keywords: **Pudtol Apayao Philippines, swine raising, traditional feeding practices, feedstuffs.**

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I. RATIONALE

Swine raising in the municipality of Pudtol means livelihood for most unemployed residents. But one major problem that swine raisers encounter is the high of cost of commercial feeds. As a result, many raisers look for some alternatives to reduce their expenses.

Apayao Province and other parts of the CAR ensure traditional means of raising their pigs. They feed their pigs with the available traditional feedstuffs. This has been customary especially to the native people in the rural areas. When the supply of commercial feeds is at stake, they employ the traditional means of feeding. Or most swine raisers employ mixed feeding: the traditional and constituents, some for the cross breed pigs, hybrid pigs and some for the native pigs.

It has been proven that traditional feeding is effective in raising pigs. The documentation of this study plays a significant role for swine raisers and for everybody for it gives an idea or guideline to whoever wants to engage in swine raising. Furthermore, it serves as means of reducing high expenditures in buying commercial feeds.

This research study gives an insight/knowledge to swine raisers about traditional feedstuffs for their pigs. It only requires hardships in terms of gathering indigenous feedstuffs, preparing including chopping, cooking and serving. But aside from its availability, it is nutritious and inexpensive and it actually helps rural families to save money for future needs.

Swine raising in rural areas is also inexpensive in terms of breeding pens. It doesn't need concrete housing materials. It only needs simple pigpen out of bamboos and woods .Some let their pigs live like wild pigs wherein they can go anywhere and return during meal time.

Some swine are raised by tethering system. This is true to people living in the remote areas. It has also been proven that pigs treated like wild pigs are healthy and resistant to swine diseases and importantly, they grow well with less supervision.

The problem regarding swine raising helped the researcher decide to make a survey about the traditional feedstuffs for it really helps idle constituents of the municipality, thus it also helps eradicate poverty.

II. REVIEW OF RELATED LITERATURE

Raising pigs plays an important role in many tropical countries. It is mostly influenced by the socio-economic status and traditional knowledge of the farmers. Smallholder farming systems improve livelihood and food security for the poorest people. In addition to providing protein for human consumption, pigs are often one of the main sources of cash income in rural areas and provide manure for cropping.[1]

Swine-raising is a profitable business and the commercialization of native pigs intended for *lechón* -making is already creating a mark in the domestic market. If given preferential attention by the government, swine-raising for *lechon* making can be advancement in livestock industry.

Most communities prefer native pig meat because of its taste. Although communal farmers selected indigenous pigs for meat quality, they tend to be discriminated from the commercial market because of their short carcasses, which cannot be prepared into specialized meat portions.

The problem of dependence on imported feed ingredients afflicts swine industry.

The most pressing problem is the high cost of feeds. With corn and soybean as the main ingredients in swine feeds, a staggering 70% of the total production cost goes into feeds alone. [2] Therefore, the use of alternative and low cost feed ingredients in broiler and breeder diets is a viable option for it provides economic benefits.[3] The Bureau of Animal Industry (BAI) said that hog producers who cannot cope with increasing prices of commercial feed might want to consider the alternative of raising native pigs[4]

Utilization and description of some traditional feedstuff:

Cassava tubers intended for industrial animal feeding are sliced and dried, and then usually ground or pelletized.[5] Cassava roots contain a large amount of starch, ranging from 70 to 85% DM,) therefore considered as energy feed. However, their protein content (typically less than 3%) is lower than that of cereal grains.[6] Cassava can be substituted for cereals[7] at high level in rations for all classes of livestock and poultry, provided that it is supplemented with a nitrogen source.

The productive potential of the sweet potato(*Ipomoea batatas* (L.) Lam.) varies from 24 to 36 t/ha of fresh roots and from 4.3 to 6.0 tons of dry matter/ha of foliage.[8,9]

Although, the main nutritional importance of sweet potato is in the starch content of the root, it is also a source of important vitamins, such as; vitamin A, ascorbic acid, thiamine, riboflavin and niacin.[10] Recently, it has been shown that the fresh vines can provide up to 27% of the dry matter and 40% of thetotal dietary protein for growing/finishing pigsAquatic plants, either floating *macrophytes* or amphibious species, are in current use in several tropical countries of Southeast Asia. [11]The use of this type of biomass as a supplement for pigs is very common among farmers and smallholders in the Southeast Asian region.[12]

Bananas can also be fed to pigs either fresh, ensiled [13], or in the form of a dry meal, even though the latter is extremely difficult to achieve. Ripe bananas are very palatable and their degree of ripeness affects performance. If fed non-peeled ripe bananas *ad libitum*, the pig will first eat the pulp leaving part of the peel; however, fed on a restricted basis, both the pulp and peel are eaten. If fed high levels of green bananas, palatability will affect voluntary intake and a lower consumption will affect the performance. Both bananas and plantains can, however, be sliced when green, dried in the sun, and in this way consumption will improve.[14]

III. OBJECTIVES OF THE STUDY

The study generally aimed to survey the traditional swine feeding practices of swine raisers in the municipality of Pudtol, Apayao .Identify the different traditional plants that are utilized as feedstuff in feed ing swine.

Specifically, it aimed to establish the profile as to:

1. determine socio-economic characteristics of swine's farmers in the study area;
2. survey the different traditional feedstuff used;
3. determine insights or observation of the swine raisers with regards to the use of traditional feedstuff;
4. identify the method of preparing traditional feedstuff; and
5. Find out the materials used in feeding.

IV. METHODOLOGY

Research Design:

The study made use of the descriptive survey method of research with key informant interview and observation as data-gathering tools.

Respondents of the Study:

The researcher selected 100 respondents with 10 swine raisers per barangay. The respondents in the study were farmers who were engaged in raising swine. The baranggay captains of the selected area where the study was conducted helped identified the key informants.

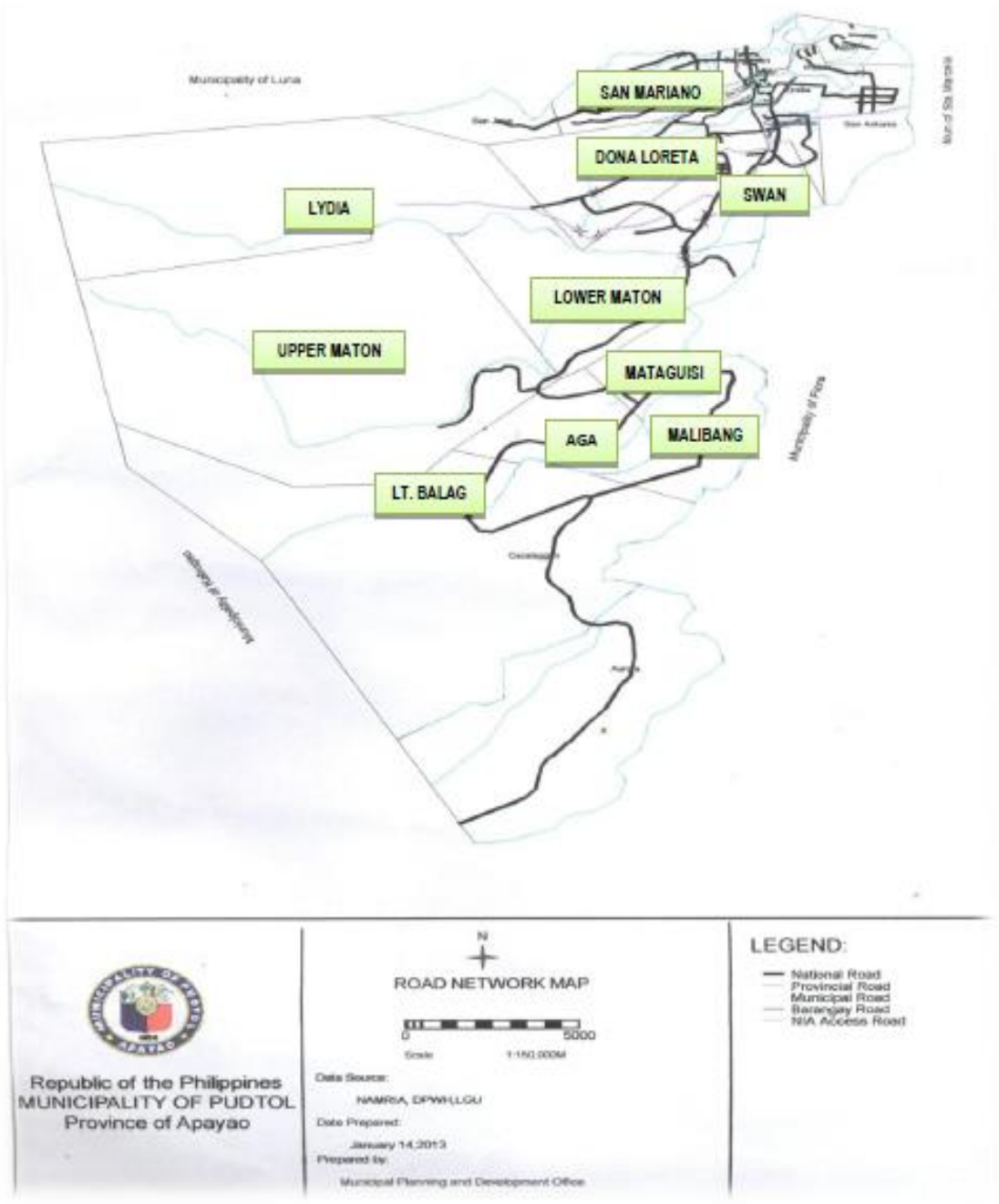
Locale of the Study:

Pudtol is a fourth class municipality of Apayao.[15,16] It is politically subdivided into 22 barangays.[16] The land area is 401.02km2(154.83sq mi).

There are two seasons in the said municipality, wet and dry. Wet season including storms, typhoons, and changes of temperature result to huge damages of crops especially the rice field which is the main source of food for the people. Same problem arises when dry season which lasts for more than a month comes.

With the 22 barangays of the municipality of Pudtol, unemployed constituents engaged in planting root crops, rice and various varieties of vegetable including raising swine, and rearing poultries and other native animals. Swine raising has been traditionally practiced by people not only for selling purposes but also for butchering purposes.

Only 10 barangays namely: Lt. Balag, Aga, Malibang, Mataguisi, Upper Maton, Lower Maton, Lydia, Doña Loreta, Swan, and San Mariano were chosen to be the respondent barangays considering their being secluded/remote locations which best reflects the study.



Data Gathering Procedure:

Before the study was conducted, a letter of permission was prepared which was first given to the barangay captains of the 10 barangays. After the permission was granted, the interview was conducted wherein the researcher personally visited the farmers who are engaged in swine raising.

Research Instrument:

The semi-structured interview and observation were the main instruments used in collecting the data needed in this research.

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Data Analysis:

The data gathered from the respondents were tabulated, computed and analyzed with the use of frequency counts and percentage.

V. DISCUSSION OF RESULTS

The study had of 100 farmer respondents who were selected from the different barangays of Pudtol, Apayao.

Table 1: Socio-Economic Profile.

	PERCENTAGE
AGE:	
MINIMUM 17 -30	27%
MAXIMUM 30-50	30%
MEAN 30-70	27%
GENDER:	
Male	42%
Female	58%
EDUCATIONAL ATTAINMENT	
Elementary Level	32%
Elementary Graduate	27%
High School Level	20%
High School Graduate	12%
College Level	5%
College Graduate	4%
ETHNICITY	
Ilocano	27%
Isnag	59%
Ibanag	4%
Igorot	10%
ANNUAL INCOME	
Minimum income Below 10,000	48%
Maximum income 10,000-30,000	52%

Majority of the respondents belong to the age bracket of 30-50 years old. In gender, majority of the swine raisers in Pudtol, Apayao were females. As shown in the table, 32% of the respondents reached only elementary level. The respondents belongs to four different tribes, majority of them were Isnag (59%). In terms of income, most respondents obtain annual income of 10,000-30,000.

Table 2: Respondent's Utilization Rate on Traditional Feedstuff

Local/Common Traditional Feedstuff	Utilization Rate Of Traditional Feedstuff Used (%)	Place Grown/Habitat
1.Gabi/Taro	72%	found in backyard
2.Kamoteng kahoy/ cassava	12%	found in backyard
3.Kamote	12%	found in pathway, garden
4.Kangkong	9%	found along riverside, irrigation , fishpond
5.Waterlily	5%	found along riverside, irrigation
6.Kuhol	7%	found in rice field, creek
7.Banana	15%	found in the field, garden
8.Papaya	10%	found in the garden/backyard
9.Kalabasa/Squash	12%	found in field, backyard
10.Coconut	13%	found in backyard, roadside
11.Tigui	16%	found in forest
12.Kullo-kullot	6%	found in roadside ,forest
13.Opuntia ovata	5%	found in house backyard pathway
14.Spinach	11%	found in the field

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Table 2 shows the utilization rate of traditional feedstuff by the respondents. Majority of swine raisers utilized *Gabi/Taro*, which is mostly found in the backyard, as traditional feedstuff.

Some of the traditional foodstuffs are root crops and fruit bearing plants which are grown in water but most of the feedstuffs are weeds that are found in the forest, road sides, pathways, garden, rice fields, creeks, riverbanks. *Kuhol or* snail, which is abundant in the locality especially in the mountainous places, is also a traditional feedstuff.

The feedstuffs which are utilized by the farmers are mixed with rice bran or commercial feeds before given to the pigs.

Plate 1: Photo showing some of the traditional feedstuff utilized by swine raisers in Pudtol, Apayao

TABLE 3: Methods in the Preparation of Traditional Feedstuff used by the Respondents

TRADITIONAL FEEDSTUFF	METHODS OF PREPARATION
Gabi	washed, cooked
Kamoteng kahoy	washed, ,peeled, chopped, cooked
Camote	chopped, served raw
Ube	chopped, cooked
Kangkong	raw, chopped
Waterlily	washed, cooked
Kuhol	shell is removed, cooked
Banana	chopped, cooked
Papaya	chopped, cooked
Kalabasa	chopped, cooked
Coconut	served raw
Tigui	chopped, cooked
Malo-malo	chopped, cooked
Kullo-kullot	chopped, cooked
Spinach	cooked, chopped

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Table 3 shows the methods of preparation of the traditional feedstuff used by the respondents. Majority of the respondents prepare feedstuff through washing, peeling, chopping and cooking. Some raisers prepare raw feedstuff for their pigs.

Plate 2: Methods of Preparing Traditional Feedstuff

TABLE 4. Feedstuff Composition of Swine Feed Practiced by the Respondents.

COMPOSITION	PERCENTAGE
Rice bran + traditional feedstuffs	70%
Rice bran + Commercial feeds + Traditional feedstuffs	30%

Table 4 shows the ration composition of the food given to the swine. Most of the respondents feed their pigs with the combination of rice bran and traditional feedstuff. Based from the data, the respondents do not feed their pigs with pure commercial feeds.

TABLE 5: Feeding Frequency Adopted by Swine Raisers in Pudtol, Apayao.

FEEDING TIME	PERCENTAGE
a. Starter Stage	
Twice a day	40%
Thrice a day	60%
b. Growing Stage	
Twice a day	90%
Thrice a day	10%

Table 6 shows the feeding frequency adopted by swine raisers in the municipality.It is shown in the table that during the starter stage, 60% of the respondents feed their piglets thrice a day,40% feed their pilets twice a day . During the growing stage, 90% of them feed their pigs twice a day, 10% feed their pigs thrice a day.

TABLE 6: Feeding Trough Used by Swine Raisers in Pudtol, Apayao

FEEDING TROUGHS	PERCENTAGE
Wooden trough	58%
Concrete feeding trough	19%
Rubber feeding trough	15%
Plastic/Gallon feeding trough	8%

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There were 4 types of feeding through used by the respondents. As shown in the table, 58% of the respondents used wooden feeding through followed by concrete feeding through (19%), Rubber feeding through (15%) and plastic feeding trough (8%). Some farmers were not using feed trough instead they just scattered the feeds on the floor.

Plate 3: Different feeding trough used by the swine raisers in Pudtol, Apayao

TABLE 7. Age of the Swine when Farmers Start Feeding with Traditional Feedstuffs

AGE OF THE PIG	PERCENTAGE
1 month-2 months	8%
3 months-and above	92%

The table shows the age of the pigs when the swine raisers start giving them with traditional feedstuffs. Ninety-two percent (92 %) of the respondents stated that their pigs are fed with traditional feedstuff at the age of 3 months and above.

Some of the observations of the swine raisers in the municipality with regards in utilization of feedstuffs are the following: Pigs fed with traditional feedstuffs have stronger resistance to diseases. They have observed and have proven that pigs fed with indigenous feedstuffs help promote the growth of the swine because even if there's no commercial feeds and rice bran that are mixed, the native and the high breed pigs grow however at a lower rate. It only requires prudence in the gathering and preparation of traditional feedstuff.

VI. CONCLUSION

Based on the study, it is concluded that the swine raisers in the municipality of Pudtol generally adopts traditional way of feeding their pigs. Feeding of pigs natively with available feeds and wastes is a common practice to reduce the feeding cost. The researcher concluded that the pigs fed with traditional feedstuffs are healthy and are strong in resisting diseases. Traditional feedstuffs help promote the growth of swine because even without mixing with commercial feeds and rice bran, both native and hybrid pigs grow, however at a lower rate. It only requires prudence in gathering and preparation of feedstuffs.

VII. RECOMMENDATIONS

Based from the conclusion, the following recommendations are derived:

a) To sustain the use of traditional feedstuff for feeding native, crossbreed, and hybrid pigs instead of the use commercial feeds to lessen the burden of high cost of commercial feeds and to avoid bad effects of feeds to human health;

b) To package the study as an Instructional Materials in the integration of IPED in BS Agriculture curriculum;

c) To conduct study on other methods of preparation and materials used as traditional feedstuff.

d) To conduct similar studies regarding the use of other traditional feedstuff to find out best results.

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