

Acceptability of Native Darag Chicken Menu Variations

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Abstract- Traditional native chicken delicacies like lechon and adobo are very common dishes in a rural Filipino folks' dining table. As the family economic standing improves, meat becomes a main item in a family diet, dishes like fried chicken and chicken nuggets have also become part of the family choices of chicken dishes in their meal. Intensification of the production of native Darag chicken would lead to optimization of food technological output for the university which will hopefully be a potential one town-one product (OTOP) of the municipality.

Keywords – Native Darag Chicken, Calinog, Iloilo, Philippines, Lechon, Adobo, Food Technology

I. INTRODUCTION

In the Philippines, especially in the rural setting, native chickens constitute a large portion of the total chicken population. These chickens have been part of the natural setting and provide additional sources of income for so many rural farmers. Zoologically, the native chicken belongs to the genus *Gallus* of the family Phasianae. The domestic chicken has the scientific name *Gallus domesticus*. This is commonly called the native *Darag* chicken.



Figure 1. Darag Chicken

Darag is a general term used for the Philippine native chicken strain indigenous to and most dominant in Western Visayas. It evolved from the Red Jungle fowl (*Gallus gallus bankiva*). The typical plumage for the male, which is locally called *Labuyo* or *Alimbuyog*, is the red wings, hackle and black feathers and black tail. For the female, also called Darag, the plumage is yellowish-brown. The present native *Darag* chicken the campus raised descended from the indigenous Red Jungle fowl (*Gallus bankiva*) which are still roaming in the forest of Negros and Panay (www.bas.gov.ph).

Darag is considered as the most popular native chicken in the region. The marketability for native chicken has evolved because of its unique flavor, nutritive value, adaptability to a wide-range of environmental conditions. These are the plus factors that gave Darag production a high mark for livelihood and business (www.pinoybisnes.com).

The meat of the Philippine native chicken is recognized for its flavor, taste, texture and suitability to Filipino dishes, some gourmet claim that darag chicken meat is even better. Scientists attributed this to the high amount of free amino acid (aspartic) content in the meat (Tomambo et.al 2011).

The early domesticated native chickens still resemble their wild ancestors in many characteristics. The wild adult male has a shiny red plumage with light brown hackle and black tail feathers while the female has flat yellowish-brownish plumage. The native chicken's combs are of single type, and the color of their shanks ranges from yellow to gray. The combined effects of mutation, natural selection, selection for cockfighting, and the indiscriminate crossing with the exotics led to the evolution of the so-called indigenous chickens.

Some of the Philippines native chickens that are raised in the backyard of many farmers in the rural areas still resemble their wild ancestral type. They are nervous, flighty, but the female has strong maternal instincts. They are hardy and can reproduce and survive with minimal care and management. Intensification of Darag chicken production led to the expansion of its technological perspective.

The West Visayas State University (WVSU) raised native Darag chicken purposely for research, preservation of the species, for instruction, dispersal to

farmers and for commercialization of the product. As a regional focus commodity, the research and technology packaging for Darag native chicken production and commercialization is funded by Department of Science and Technology - Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development (DOST-PCAARRD). West Visayas State University leads the Science and Technology Program for Darag Native Chicken (PCAARRD, 1989).

Provido stated that native chicken has the great potential of becoming a big industry. It's the distinct taste of the Darag that makes it inimitable from the commercial breeds. Darag native chicken has already launched its name in the local markets and started to play side by side with the commercial ones. Through the intervention of available technology, it has also evolved into a more complex production process and marketing system (www.darag.wesvarrdec.org).

Similar explanation on the potential of Darag native chicken as a livelihood commodity was given to the audience in the Farmers' Forum in San Carlos City which was composed of farmers, entrepreneurs. The qualities of darag, its potential as a business, among other reasons, led West Visayas State University (WVSU) researchers, Evelyn D. Tomambo, George Fredrick A. Roxas, Ray L. Arenga, Celma G. Casiple, and Bernabe B. Cocjin, study its production and dispersal.

A growing number of locals and foreigners relish the taste of Philippine native chicken called Darag found in Western Visayas provinces of Iloilo, Negros, and Guimaras. Apparently, there's more to Darag's luscious meat than meets the taste bud. Results of the study showed that Darag chicken meat contains less fat, high in protein, rich in potassium, and has more unsaturated fatty acids(www.fnri.dost.gov.ph).

To achieve such goal, it was important to determine "the chemical basis of the chicken meat's superiority in nutritional and sensory properties", Fernandez explained. Moreover, he stressed is preferred for its unique flavor, taste, and meat texture that small growers take as an alternative enterprise (www.mixph.com).

For Tagamolila, just like any Ilonggo either from Iloilo or Negros Occidental, native chicken is always a special fare on the table. It's a preferred food over the others especially when cooked as 'tinola' or chicken 'inasal' (www.bas.gov.ph)

II. OBJECTIVES

For the purpose of the study, the following objectives are included: to determine the different menus acceptable to local consumers; to identify the

most acceptable menu of native chicken such as nuggets, fried chicken, adobo, and lechon manok from native Darag chicken; to identify the different local ingredients and spices appropriate and acceptable for each menu; and to enhance the Darag native chicken technological output of the university.

III. MATERIALS AND METHOD

WVSU Main Campus, PCAARRD and WVSU Calinog Campus collaborated in order to produce and preserve the characteristics of Native Darag chicken and Calinog campus became the breeding location of this indigenous chicken. From the stocks, good breeders were identified and separated from fast growing and slow growing. This is done after the chicken is 75 days old. Selected breeders weigh about 600 to 750 g. The rejected ones were either sold or slaughtered. After a year, the institution celebrated the Darag Day festivity last December 2011.

The researchers conducted a product tasting and sampling of four(4) different native chicken dishes cooked using five(5) different recipes and different ingredients in different proportion. The objective of the study is to determine the acceptability of Native Darag Chicken menus. Forty(40) invited people from different agencies were utilized as tasters of the dishes, where ten(10) persons were assigned in each dish. They were given a score sheet for each recipe. The criteria include appearance, texture, flavor, and general liking. The scores and rating were 1 very poor; 2 poor; 3 good; 4 very good and 5 best. Four(4) native chicken dishes rated included lechon, adobo, fried chicken and chicken nuggets, each dish is cooked in five(5) different recipes (treatments) with chicken meat as major ingredient as. Treatments were labeled A, B, C, D, & E.

Scores of each person were summed up and expressed as the mean for each recipe. Individual average mean scores were further computed and ranked. The recipe acquiring the highest score is considered as the most acceptable one for that specific dish. Results revealed that recipe C was the most acceptable for all four dishes. Ingredients most acceptable for each recipe are as follows: Pineapple juice for adobo, pure evaporated milk for chicken nuggets, breaded chicken with pandan for fried chicken and for chicken lechon, roselle stuffing was mostly preferred. Comparison between different dishes in which one is more acceptable was also made by using the rank ordering of scores. Fried chicken tops other three(3) dishes, followed by adobo, lechon and nuggets.

The present study is only a sample tasting of the mentioned chicken dishes cooked using different

recipes with different ingredients for all the variables. It did not comply with the ideal taste-test study wherein individuals involved in product tasting were not trained taste evaluators and tasting was done only once. Thus, the researchers did not subject the results to further statistical tests to determine the significant difference between the dishes. However, the study complied with the product acceptability testing updating the general acceptability of the included popular dishes in a family

table. With the scenario in mind, that during the family festivity for example chicken dishes are always present but choices between young and old vary, where younger ones prefer fried chicken and chicken nuggets whereas older members prefer traditional dishes. Moreover, the intention of the study was also to maximize the utilization of every edible parts of native chicken and at the same time considering the storing potential of the menu.

Table 1. Four Native Chicken Dishes Cooked Using Five Different Ingredients

NATIVE CHICKEN DISH	VARIOUS INGREDIENTS				
	A	B	C	D	E
Lechon	Tamarind	Alabihod	roselle	Calamansi	-----
Adobo	Achuete	Plain	Pine-apple juice	Pine-apple chunk	Adobo sauce
Fried Chicken	Buttered chicken w/ rosemary	Buttered chicken with mix seasoning	Breaded chicken with pandan	Plain with hot and spicy mix	Crispy fry mix
Chicken Nuggets	¾ powdered milk; 1 pinch salt, 1/3 pepper	Evaporated Milk Diluted with water	Pure Evaporated milk	Condensed milk	Margarine

Table one shows the four different menus which can be cooked from Darag chicken. Different recipes were tried to find out which of these recipes will be most liked by the townspeople on the basis following criteria: appearance, color, flavor, texture, and over-all liking.

Materials:

1. Dressed native darag chicken

The chicken were dressed and cleaned. The meat was cut into desired sizes (except for lechon) for different menus. Ingredients to be mixed in the different menu were prepared, cooking utensils were prepared and cooking was done. These were the different procedures that were done in preparing each menu
2. Local ingredients
 - a. Roselle (labog) (*Hibiscus sabdariffa*)
 - b. Lemon grass (tanglad) (*Cymbopogon marginatus*)
 - c. Alabihod(libas)
 - d. Pandan leaf (*Pandanus odoratissimus Linn.*)
 - e. Tamarind (*Tamarindus indica*)
 - f. Achuete (*Bixa orellana Linn.*)
3. Other ingredients;
 - a. Evaporated milk

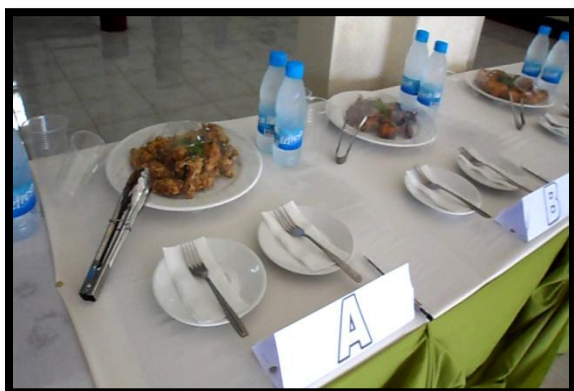
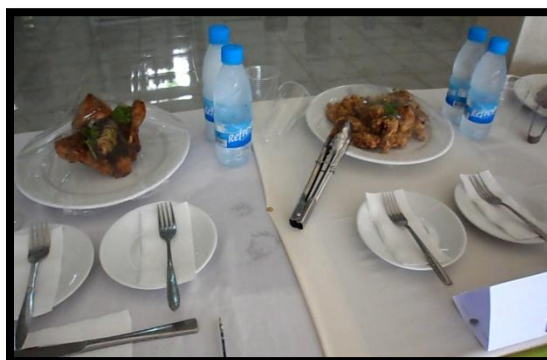
- b. Breeding
 - c. Salt and sugar
 - d. Butter
 - e. Margarine
 - f. Pineapple juice and chunks
4. Cooking Pots and utensils

Recipe:

- A. Lechon
 1. Remove the internal organs of the chicken
 2. Wash and drain well
 3. Marinate it with salt, monosodium glutamate and pepper for one (1) hour or more
 4. Stuff it with different local ingredients and spices per treatment.
 5. Bake for forty five (45) minutes to one (1) hour until golden brown
- B. Adobo
 1. Wash and slice chicken into cubes
 2. Drain
 3. Combine garlic, ginger, soy sauce, monosodium glutamate, vinegar, onion bulb and long pepper
 4. Mix with different local ingredients per treatment.
 5. Cook chicken until tender.

6. Garnish
- C. Fried Chicken
 1. Wash and slice chicken into serving pieces
 2. Drain
 3. Marinate it with salt, black pepper and monosodium glutamate.
 4. Mix with different local ingredients per treatment.
 5. Deep fry until golden brown
- D. Chicken Nuggets
 1. Boil chicken breast and chop into fine pieces and set aside

2. Melt butter in low temperature then add flour
3. Add various local ingredient gradually per treatment to the butter mixture
4. Season it with pepper, monosodium glutamate and salt.
5. Add boiled chicken and combine well
6. Pour the mixture in the pan and flatten
7. Refrigerate for ten(10) minutes
8. Slice into squares and dip in flour, beaten eggs and dredge with bread crumbs
9. Deep fry into golden brown
10. Drain and serve.



As a Darag producing institution we celebrated the Darag Day festivity last December 2011. We conducted a product tasting and sampling of 4 different native chicken dishes cooked using five(5) different menus. The objective of the study was to determine the acceptability of Native Darag Chicken menu. Forty(40) randomly selected people of the Municipality of Calinog representing the various sectors who tasted the dishes, where 10 persons were assigned in each dish. They were given a score sheet for each recipe. The criteria included color, texture, flavor, over-all liking. The scores and rating were 1 very poor; 2 poor; 3 good; 4 very good and 5 best. Four native chicken dishes that were rated included lechon, adobo, fried chicken and chicken nuggets, each menu was cooked in 5 different

treatments with one major ingredient as variant. Treatments were coded A B C D E. Scores of each person were tallied, got the mean then ranked. The menu with the highest score was considered as the most acceptable one for that specific menu.

IV. RESULTS

Results revealed that recipe C was the most acceptable for all four dishes: The combination of different dishes with the main ingredients - Pineapple juice for adobo, pure evaporated milk for chicken nuggets, breaded with chicken pandan for fried chicken and for chicken lechon, roselle stuffing was mostly preferred. Fried chicken tops other three(3) dishes, followed by adobo, lechon and nuggets.

The study was only a sample tasting of the mentioned chicken menus cooked using different treatments were ingredients vary. It did not comply with the ideal taste-test study wherein individuals involved in product tasting were not trained taste evaluators and tasting were done only once, thus, the researchers did not subject the results to further statistical tests to determine the significant difference between the dishes. However, the study complied with the product acceptability testing.

Table 2. Comparison of Different Ingredients for Lechon

Treatment	Ingredients for Stuffing	Mean	Rank
A	Tamarind	3.78	3
B	Alabihod	3.76	4
C	Roselle	3.87	1
D	Calamansi	3.85	2

After taste testing, results revealed that lechon stuffed roselle got the highest mean of 3.87 and the lowest was stuffed with alabihod. This implies that people preferred based on appearance, color, flavor, texture, and overall liking lechon stuffed with roselle.

Table 3. Comparison of Different Ingredients for Adobo

Treatment	Ingredients	Mean	Rank
A	Achuete	3.76	3
B	plain	3.57	4
C	Pineapple juice	4.21	1
D	Pineapple chunks	4.14	2
E	Adobo sauce	3.56	5

Results revealed that the ingredient for adobo that got the highest mean was with pineapple juice as a mixture ingredient with a mean of 4.21 while the least was with commercial adobo sauce with a mean of 3.56. This indicated that based on appearance, color, flavor, texture, and over-all liking people preferred pineapple as an ingredient for native chicken adobo.

Table 4. Comparison of Different Ingredients for Fried Chicken

Treatment	Ingredients	Mean	Rank
A	Butter and rosemary	3.80	4
B	Butter and mix seasoning	3.83	2
C	Breaded with pandan	4.23	1
D	Plain with hot and spicy mix	3.81	3
E	Crispy fry mix	3.70	5

Among the different ingredients for native fried chicken, breaded chicken with pandan got the highest mean of 4.32 and the lowest was coated with commercial crispy fry mix with a mean of 3.70. This entails that the people who taste tested like it better for a fried chicken to be breaded as well as marinated with pandan leaves extract as special ingredient.

Table 5. Comparison of Different Ingredients for Chicken Nuggets

Treatment	Ingredients	Mean	Rank
A	powdered milk, salt, pepper, ground chicken	3.81	2
B	evaporated milk diluted in water	2.83	5
C	pure evaporated milk	3.82	1
D	condensed milk	2.84	4
E	margarine	3.41	3

Results indicated that for chicken nuggets, chicken with pure evaporated milk mixture got the highest mean of 3.82 and with diluted evaporated milk mixture got the lowest mean of 2.83. This implied that people based on appearance, color, flavor, texture, and over-all liking preferred pure evaporated milk as an ingredient for chicken nuggets.

V. DISCUSSION

The breakthrough of the massive production of the native Darag chicken has led to further technological discoveries. Expansion on food technology has set forth the discovery of more foodstuffs for the Filipino family. This led West Visayas State University, Calinog Campus to find out what are the probably menu that could be made as a delicious delicacy for the community. Moreover, to come up with the ingredients of that specific menu could be a best qualify to the taste standards of the people based on appearance, color, flavor, texture and over- all liking. Ingredients were chosen on the bases of their availability in the environment.

It was also a revelation to note that the local natural additives were also preferred over the commercial ones. A lot more menu could be ventured into by food technologist but we focused first on those food items which are eventually a viable and marketable food product for entrepreneurial expansion as well as its longer storing potential or longer shelf life. Future researches are encouraged to explore more on the development of this agricultural product. Furthermore, its captivating taste could be a very good avenue for the

discovery of more food products as well as the expansion of entrepreneurial aspect.

VI. CONCLUSION

Variety of delicious menus could be made from native Darag chicken. Among which the Darag Chicken are Darag Chicken Lechon, Darag Chicken Adobo, Darag Fried Chicken and Darag Chicken Nuggets cooked with different ingredient-mixtures.

The most accepted ingredient-mixtures for lechon is with roselle; for adobo is with pineapple; for fried chicken is breaded chicken with pandan and for chicken nuggets is with pure evaporated milk. It was also noted that natural ingredients were in some respect favored by the people that the commercial additives.

Commercialization of the product is feasible since it was acceptable and preferred by customers. The institution has also catering services and it is the desire of the caterers to establish satisfaction among the clients wherein they get worth their money being paid since they can eat various menus that suits the taste of visitors of all ages. *Darag* chicken production of the campus would strengthen the collaboration of different schools in the transfer of technology. The school of Agriculture will become the producer, the school of Technology will be in-charge of food processing and packaging, the school of Information technology will take charge of posters for advertisement and the school of education will take charge of information dissemination through flyers and radio broadcast. Furthermore, local

ingredients like roselle, pandan and other spices could be propagated for mass production.

Intensification of the production of native Darag chicken would lead to optimization of food technological output for the university which will hopefully be a potential one town-one product (OTOP) of the municipality.

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