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Native Siling labuyo (*Capsicum annum*) as growth promoter on colored broiler chicken (Sunshine)

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Key words: Native Siling labuyo (*Capsicum annum*), Growth performance, Carcass quality, Organoleptic assessment

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Abstract

The study was conducted at Cagayan State University, Piat Campus-Integrated Farm to evaluate the potential of native Siling labuyo *"Capsicum annum"* as growth promoter to broiler chicken (Sunshine). Complete Randomized Design (CRD) was used as research design with four (4) treatments (T_1- FFR + 50 grams chilli powder, T_2- FFR+30 g CP, T_3- FFR+10 g CP and T_4-Pure FFR), each having three (3) replications. Based on the findings, there are no significant difference among the four treatments on the growth performance, carcass quality and organoleptic characteristics. However, numerical data showed an interesting improvement in feed intake, weekly gain in weight, percentage growth rate (%), feed conversion ratio, as well as carcass features in diets with 50 g of chili powder compared to pure FFR. Further, the meat of chickens is generally acceptable in appearance, aroma, texture or tenderness and flavor to consumers.

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Introduction

Key contributors to Philippine agriculture are the livestock and poultry subsectors. Demand for broilers is driven by socioeconomic factors and religious preferences in the Philippines and other ASEAN countries. Meat is not only one of the earliest human diets but is among the most biologically important food. This is primarily due to its excellent nutrient contents. Humans have been consuming this most of their existence in order to fulfill some of their nutritional requirements and will likely continue this behavior for a long period of time. One of the sources of meat is chicken and its consumption is steadily rising. The majority of the consuming populace is now health conscious and desires to eat healthy food products with low fat content. Because of this, chicken meat, with its good nutrient content and low-fat content, is often preferred over the other meats.

However, it is not only the fat content that consumers are worried about but also the presence of chemical residues due to the addition of feed additives like antibiotics and other synthetic growth promoters. With this, consumers tend to shift toward consuming organically grown meat. Growth promoters are chemical and biological substances that are added to feed with the aim of enhancing growth performance, improving feed utilization, and improving production performance to substantiate the financial results.

Antibiotic growth promoters like oxytetracycline, bacitracin, virginiamycin, and others have been widely used to promote growth and prevent disease. However, their subclinical application in feed has become a controversial issue worldwide because of the appearance of residue-resistant strains of bacteria (Alexander *et al*., 2008), including *Salmonella* spp., *Campylobacter* spp., *Escherichia coli*, and *Enterococcus* spp. These resistant bacteria can cause diseases in humans. It is therefore critical to find a replacement for these products. According to Puvaca *et al.* (2013), there are numerous natural compounds that can be alternatives to antibiotics. The following are probiotics, prebiotics, herbal extracts, amino acids, bioactive peptides and many others (Abd El-hack *et al.,* 2022).

Native Siling Labuyo (*Capsicum annum*), a red hot pepper, is considered acceptable as animal feed additive (Munglang and Vidyarthi, 2019). It is non-toxic and contains capsaicin with several pharmacological and chemical contents. Some of its beneficial contributions includes improvement of appetite, sensory properties, palatability, flavor enhancing properties and other is through biological activities, which include antibacterial, antiviral (Burt 2004), antifungal, antioxidants (Windisch *et al*., 2008) anti-inflammatory, anti-stress, enhancing enzymatic digestibility and immune-stimulatory activities (Hashemi and Davoodi 2011).

Several countries already conducted studies on the effect of chili powder in the different strains of chicken. Growth performance, serum cholesterol level, biochemical, and hematological are the most common parameters that researchers seek in these studies. However, other significant parameters such as carcass quality and organoleptic assessment in chicken supplemented with dried chili powder have not yet been determined. Thus, this study generally aimed to evaluate the effect of dried native siling labuyo (*Capsicum annum*) as a growth promoter on colored broiler chicken (Sunshine). *Specifically,* it aimed to determine its effects on the following parameters: feed consumption; gain in weight; final body weight; percentage rate of growth; feed consumption; feed conversion ratio (FCR); carcass quality; percentage (%) abdominal fat; dressing percentage (%) with and without giblets; organoleptic assessment.

Materials and methods

The following materials were used in the study: 120 heads of sunshine chicken, a weighing scale, commercial feed, basal diet ingredients: corn, rice bran (D1) soy bean meal, fish meal, coco oil, DL-meth, L-lysine, limestone, salt, vitamin mineral premix, dried chili powder, feed trough, drinking jar/waterer, bayog, nipa, rice hull, net, brooder, heater, camera, drum, feed scoop, weighing scale and a record notebook.

Experimental Design and Treatments

The Complete Randomized Design (CRD) was used and replicated three times.

Each replication has ten (10) randomly assigned sunshine chicks to test the following treatments: Treatment 1- FFR + 50g Chili Powder/kg diet; Treatment 2- FFR + 30g Chili Powder /kg diet; Treatment 3- FFR + 10g Chili Powder/kg diet, and; Treatment 4- Pure FFR. All experimental birds were reared in 480 square meters which are divided into 12 experiment units, using poultry nets in order to prevent the transfer of birds to other groups and to protect them from predators as well. The experimental area was well ventilated and had rice hulls that served as litter.

Procurement and Brooding of Experimental Birds

A total of 120 heads of 1-day old chicks were purchased from Ivan's Agricultural Supply. Upon arrival, the chicks were brooded for 21 days (3 weeks). Required temperatures (1-7 days, 32.2-35, and 8-21 days, 29-32.2) inside the brooding house were provided to regulate proper body temperature, thus, avoiding the generation of heat through metabolism.

Procurement and Preparation of Chili (Capsicum annum)

Fresh and dried native siling labuyo *(Capsicum annum)* powder was purchased at the local market in Conner, Apayao. The fresh chili was sun-dried until the desired moisture content was obtained. After drying, it was also sautéed until its texture became brittle. Dried chili was manually powdered.

A phytochemical screening of native siling labuyo *(Capsicum annum)* was performed at the Cagayan Valley Integrated Agricultural Laboratories (CVIAL) of the Department of Agriculture-Regional Field Office 2 (DA-RFO 2) in order to identify its main chemical constituents. A total of 100 grams of dried chili powder samples were submitted.

Feed Mixture Preparation

A feed ration with 20% CP was formulated. The raw materials used for the preparation of the basal diet were corn, rice bran (D1), soy bean meal, fish meal, coco oil, dl-meth, limestone, salt, and vitamin and mineral premix. The feed ration was mixed manually with the used shovel. Prior to mixing, each ingredient was weighed based on the amount indicated, as shown in Table 1. Ingredients between 1-2% of the formulation, such as DL-Meth, limestone, salt and vitamin/mineral premix were premixed to ensure equal distribution to other ingredients with larger volumes. Coco oil was mixed with ground corn first (start with feeds, which make up the largest part of the mix) followed by rice bran, soy bean meal, and fish meal. After mixing ingredients in a large quantity, pour premixed ingredients (DL-Meth, limestone, salt, and vitamin/ mineral premix) and mixed thoroughly. Molasses was added after. Repeat shoveling about five times or more was done to produce a homogenous mixture.

Table 1. Formulated Feed Ration (20% CP), 100 kg basis.

Ingredients	Crude protein	Weight (kg)	% CP
Corn Yellow	8.0	53.11	4.25
Rice Bran	13.60	12.55	1.71
Soybean Meal	43.0	25	10.75
Fish Meal	65.0	5	3.25
Molasses	2.90	2	0.058
DL-meth	58	0.04	0.0232
Limestone	0	1.4	0
Coco oil	0	0.1	0
Salt	0	0.3	0
Vit/Min Premix	0	0.5	0
TOTAL	20.00	100	20.037

Feeding and management procedures

All experimental birds were fed commercial broiler starter (1-15 days). The experimental birds in the Treatment 4 group were fed only commercial broiler ration, whereas the birds in the Treatment 1, Treatment 2, and Treatment 3 groups were fed a feed formulated ration supplemented with 50g, 30g, and 10g of chili powder, respectively. The different treatments were given to experimental chickens ad libitum throughout the study period, together with fresh, clean water. Each experimental group's birds were weighed once a week in the morning before feeding and watering. The amount of feed offered and the residue left after 24 hours were used to calculate feed intake. Bio-security measures were implemented such as cleaning and disinfecting the experimental area, to prevent occurrence of diseases and growth of pathogens throughout the duration of the study.

Carcass quality evaluation

At the end of the experiment, two birds (one male and one female) from each replicate with the heaviest weight were selected. Liveweight was determined as the basis for the computation of the dressing

percentage before being slaughtered using a sharp knife to ensure complete bleeding. Blood was collected in a plastic bottle, the feathers of the birds were plucked, and the head, shanks, and viscera were extracted and disposed of. Dressing percentage was calculated with and without giblets (heart, gizzard, and liver), and organ weight was calculated as a percentage of carcass weight. The following formula was used to determine the dressing percentage (%) of the chicken with or without giblets: total liveweight (grams)/dress weight (grams) x 100.

Fat and Protein Analysis

The crude fat and crude protein content of the chicken breast and thigh were analyzed in the Cagayan Valley Integrated Agricultural Laboratory of the Department of Agriculture-Region 02. A total of 100 of grams meat samples from breast and thigh, respectively, were analyzed on a dry basis with the Foss Tecator for Crude Protein and Filter Bag Technique (ANKOM).

Preparation of Chicken Meat Samples and Organoleptic Evaluation

Meat samples were taken in accordance with procedure done by El-deek *et al.* (2011) briefly describes meat samples from the right half of the carcass (thigh and breast) of each treatment. They were cut into small pieces ($1cm^2$). All samples were cooked by steaming for 30 minutes. Samples were served on a plate. Identifier codes were assigned to the different samples in order to maintain the full anonymity of the treatments used by the taste panelists. The sensory taste panel was randomly selected and was composed of 10 faculty members and 10 students. A nine-point hedonic scale with nine (9) as the most desirable and one (1) as the least desirable (Appendix 1) was used to determine the degree of acceptability of the meat. Scorecards were provided to the taste panelists for them to evaluate the following parameters: color, aroma, flavor, tenderness or texture, and general acceptability.

Statistical Tool

The data was analyzed using the analysis of variance (ANOVA) with 5% and 1% levels of significance of the Statistical Tool for Agricultural Research (STAR), version 2.0.1 2014. The Least Significant Difference Test at 5% (LSD 0.05%) was used to compare the treatment means.

Result and discussions

General Appearance of the Experimental Birds

The experimental birds used in the study were generally normal and healthy, as manifested by their alertness, bright eyes, and shiny and smooth hair coats. It was also observed that as they grew, they were free from any diseases and injuries.

Weather condition

The prevailing weather conditions during the study period were also noted. A low temperature was experienced during the brooding stage, and there was a high temperature during the entire study period. However, despite the changing weather conditions, zero mortality was achieved.

Meat Quality of Chicken Meat

The meat of slaughtered chickens from the different treatments had a good appearance, manifested in their pinkish color and the firmness of the muscles. Chickens with the highest weight from treatment 1 (2070 gram), treatment 4 (70 grams) and treatment 3 (2060 grams) had a yellowish skin coat, specifically in female chickens. This observation is similar to the study of Sirri *et al.* (2010), in which higher skin yellowness was observed in majority of females. Moreover, the meat was very tender and had a good aroma and flavor when cooked.

Growth Performance

Feed Consumption

Experimental chickens in treatment 3 had the highest weekly feed consumption, with means ranging from 494 grams to 986 grams, followed by treatment 1 (485.67 grams to 991.67 grams), treatment 2 (454 grams to 990 grams), and treatment 4 (500 grams to 900 grams). An opposite result was reported by El-Deek *et al.* (2012), wherein feed intake of the broiler birds was significantly higher on a diet supplemented with 3 to 5% chili powder than on that supplemented with only 1%. However, both studies presented the potential of this spice as an alternative additive to improve feed intake.

This can be attributed to the active compound capsaicin, which, according to Brut (2004) has an appetizing effect and enhanced feed palatability.

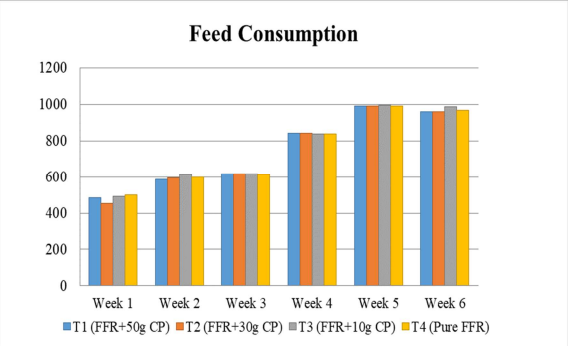

Fig. 1. Feed Consumption (grams) of Chickens fed with Formulated Feed Ration (20%) supplemented with Native Siling labuyo Powder (T_1-FFR+50 g CP, T_2-FFR+30g CP, T_3-FFR+10g CP and T_4- Pure FFR).

Weekly Weight Gain (grams) Final Body Weight Gain (grams) and Feed Conversion Ratio (FCR)

The highest weekly gains in weight were observed in treatment 1 with means ranging from 202.70 grams to 242 grams, followed by treatment 3, treatment 2 and treatment 4 with means ranges from 167.67 grams to 222.67 grams, 166.3 grams to 207.00 grams and 156.67 grams to 213.67 grams, respectively.

In terms of the final body weight gain, experimental chickens in treatment 1 had the highest final weight of 1636.23 grams, followed by treatment 3 and treatment 2 with 1514 grams and 1455 grams, respectively. Treatment 4 had the lowest body weight gains with an average mean of 1450.33 grams.

Given the feed intake, treatment 1 has a better FCR of 3.18 kilogram compared to treatment 2 with a 3.74-kilogram FCR, treatment 3 with a 3.64-kilogram FCR and treatment 4 with a 3.87-kilogram FCR. Analysis of variance revealed no significant difference among treatment means in the weekly gain in weight, final body weight gain, FCR and feed consumption. However, numerical findings showed a slight effect on the said parameters. The results corroborated the findings of Hernandez *et al.,* (2004), wherein there is slightly improved performance of chickens and the differences were not significant.

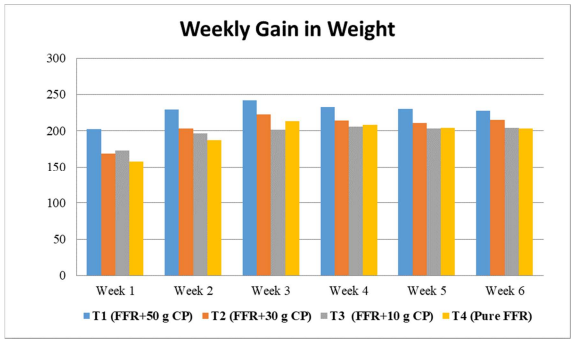

Fig. 2. Weekly Gain in Weight (grams) of Chickens Fed with Formulated Feed Ration (20%) supplemented with Native Siling labuyo Powder (T_1-FFR+ 50 g CP, T_2- FFR+30g CP, T_3-FFR+10g CP and T_4- Pure FFR).

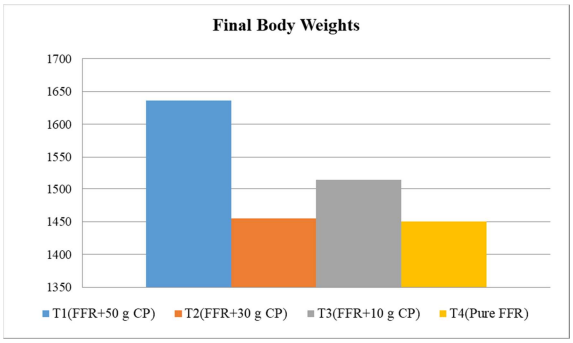

Fig. 3. Final Body Weight (grams) of Chickens Fed with Formulated Feed Ration supplemented with Native Siling labuyo Powder (T_1- FFR+ 50 g CP, T_2-FFR+30g CP, T_3-FFR+10g CP and T_4- Pure FFR).

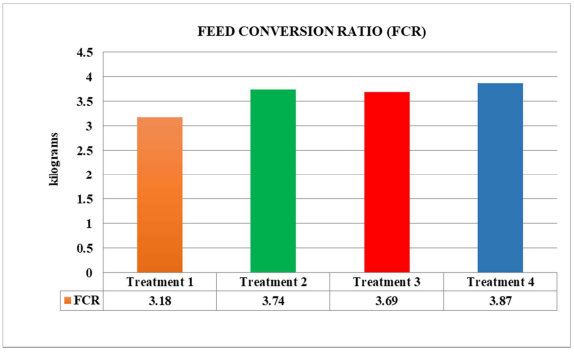

Fig. 4. Feed Conversion Ratio (FCR) of Chickens fed with Formulated Feed Ration supplemented with Native Siling labuyo Powder (T_1- FFR+ 50 g CP, T_2-FFR+30g CP, T_3-FFR+10g CP and T_4- T_4- Pure FFR).

Percentage Rate of Growth (%)

Fig. 5 depicts the percentage rate of growth of experimental chickens in the various treatments. Based on the result, treatment 4 obtained the highest

percentage rate of growth during the 3rd, 4th, and 5th weeks with corresponding treatment means of 29.49%, 22.26%, and 17.90%. On the 1st and 2nd week, treatment 1 had the highest mean of 53.88% and 38.98%, and on the 6th week, treatment 3 attained the highest mean of 15.34% among all the other treatment means. No significant difference existed among the treatment which implies that the addition of dried chili powder has no effect on the percentage growth rate of the chicken. Additionally, the age of the experimental chickens together with the existing environmental conditions are among the factors that probably caused the decreasing growth rate approaching to maturity (from week 1 to week 6) in all treatment (Murawska, 2017).

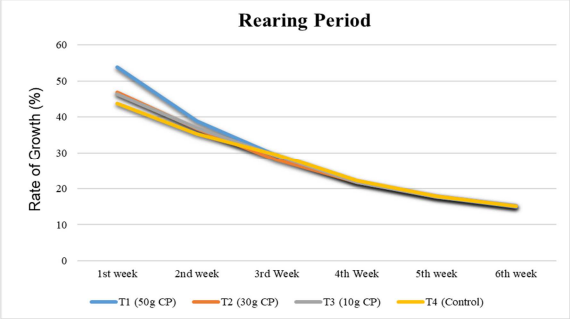

Fig. 5. Percentage Rate of Growth of Chickens Fed with Formulated Feed Ration (20%) supplemented with Native Siling labuyo Powder (T_1- FFR+ 50 g CP, T_2- FFR+30g CP, T_3-FFR+10g CP and T_4- Pure FFR).

Carcass Quality

Dressing Percentage (%)

Table 2 shows the carcass characteristics and internal organs (expressed as percentage of live weight) of the experimental chickens in the different dietary treatments. The carcass characteristics and internal organs (expressed as percentage of live weight) of broilers fed diets with varying levels of red hot pepper (Capsicum annum) meal is as shown in Table 8 below

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The percentage carcass or dressing perce

The percentage carcass of the chicken including its giblets in treatment 1 was 72.48%, followed by 71.30% in treatment 2, 72.37% in treatment 3, and 73.10% in treatment 4 while dressing percentages without giblets in the same treatment order were 61.73%, 60.26%, 61.2% and 61.21%. The values without giblets were lower than the standard range of dressing percentages which is 70-72 (Aberle *et. al.,* 2001). On the contrary, values with giblets fall within the range. Statistical analysis showed no significant difference among treatment means, both in the presence and absence of giblets.

Table 2. Dressing Percentage (%) of Chickens fed with Formulated Feed Ration supplemented with Native Siling labuyo Powder (T_1- FFR+ 50 g CP, T_2-FFR+30g CP, T_3-FFR+10g CP and T_4- T_4- Pure FFR)

Treatments	Dressing percentage (%)	
	Without giblets	With giblets
Treatment 1	61.73	72.48
Treatment 2	60.26	71.30
Treatment 3	61.2	72.37
Treatment 4	61.21	73.10
Result	ns	ns
CV%	4.26	3.26

Carcass Weight (grams)

Heaviest breast weight was obtained in treatment 1 (327.5 grams) followed by treatment 3 (313.75 grams), treatment 2 with 300.5 grams and treatment 4 with 287.5 grams. In terms of the thigh part, treatment 4 (193 grams) has the heaviest weight, followed by treatment 1 (190 grams), treatment 3 (187.5 grams) and lastly, treatment 2 (185 grams). The major goals of the poultry industry are to increase carcass yield and reduce carcass fatness, mainly abdominal fat (Fouad and El-Senousey, 2014). In this study, treatment 1 obtained the lowest abdominal fat, weighing 31.5 grams, or 1.63%, followed

by treatment 2 with 33, or 1.77%, followed by treatment 3 with 38.5 gram, or 2.06%, and treatment 4 with a weight of 58.5 grams or 3.04% of the body weight.

Poultry spleen size is an important indicator of whether the poultry is to be condemned or accepted. Based on the above findings, the spleen of chicken reflected in table 4 showed that treatment 3 has incomparable weight of 10.5 grams (this sample has an enlarged spleen) compared to the other treatments, which had a spleen weight of 4 grams (treatment 2), 5 grams (treatment 4), and 5.5 grams (treatment 1). According to Perozo *et. al.,* (2004), the absolute weight of the spleen in broilers, its functionality, and its morphology are affected when the chicken diseases either be due to bacteria or virus. It is vital to point out that all the broilers did not show any observable symptoms associated with any disease during the study.

In terms of pancreas, the data revealed that treatment 1 obtained the highest numerical value of 5.5 grams, followed by treatment 4 with 5 grams, treatment 2 with 4 grams, and treatment 3 with 3.5 grams. According to Munglang and Vidyarthi (2019), the presence of chili powder can boost pancreatic and intestinal enzyme activity, and enhance bile acid production which is very important in the digestive process. With regards to the giblets, treatment 3 has the heaviest with mean of 217 grams, followed by treatment 4 with 214 grams, treatment 1 with 208 grams, and treatment 2 with 205 grams. Statistical analysis revealed no significant difference between means in the breast, thigh, abdominal fat, spleen, pancreas, and giblets. However, numerical data on the visceral organs with exemption to spleen showed interesting value in treatment 3. This information is significantly important because the gross size and weight of the internal organs is associated to fast growing broiler lines (Karthika *et al.,* 2019).

Fat and Protein Analysis of Breast and Thigh Meat

The fat content of the experimental chicken's thigh and breast meat samples is shown in Table 3. Treatment 2 obtained the lowest breast fat content of 3.63%, followed by Treatment 4 with 8.27%. While treatments 1 and 3 obtained the highest values with 12.5% and 11.35%, respectively. The lowest thigh meat fat content was also observed in treatment 2 (18.51%), followed by treatment 1 (21.66%), treatment 4 (22.1%), and lastly, treatment 3 (26.13%). The result supported the findings of Capan *et al.* (2021), stating that organic breast and thigh are fattier than conventional breast and thigh. However, with exemption in treatment 2, a relatively low-fat content in breast and thigh were observed. In terms of the protein content, treatment 2 obtained the highest in breast and thigh with 85.53% and 69.23%, respectively, followed by treatment 4 with 80.32% (breast) and 63.42% (thigh). Though being the fattier, treatments 3 and treatment 1 obtained a lower protein content with a corresponding value of 5.13% (breast) and 61.25% (thigh), and 72.35% (breast) and 59.78% (thigh).

Statistical analysis showed no significant difference existed among treatment which implies that the addition of chili powder has no significant effects on the level of protein and fat in breast and thigh.

Table 3. Fat and Protein Analysis of Meat of Chickens fed with Formulated Feed Ration supplemented with Native Siling Labuyo Powder (T_1- FFR+ 50 g CP, T_2- FFR+30g CP, T_3-FFR+10g CP and T_4- T_4- Pure FFR).

Treatments	Breast		Thigh	
	Crude protein	Crude fat	Crude protein	Crude fat
Treatment 1 (FFR+50g CP)	72.35	12.5	59.78	21.66
Treatment 2 (FFR+30g CP)	85.53	3.63	69.23	18.51
Treatment 3 (FFR+10g CP)	75.13	11.35	61.25	26.13
Treatment 4 (Pure FFR)	80.32	8.27	63.42	22.1

Note: 100 grams of meat samples from the breast and thigh/ treatment were submitted to Cagayan Valley Integrated Agricultural Laboratory (CVIAL) of Department of Agriculture-Regional Field Office 2.

Organoleptic Assessment

Appearance of Meat

Table 4 shows the acceptability of the meat appearance of the experimental chickens under the different dietary treatments. The results showed that there were no significant differences between treatment means.

Supplementation of dried chili powder did not affect the appearance of meat samples, with a mean ranging from 8.00 to 8.45 which falls on "Like Very Much". This implies that the meat of the chickens in the four treatments was acceptable by the selected panelists.

Table 4. Acceptability of Meat Appearance of Chickens fed with Formulated Feed Ration supplemented with Native Siling Labuyo Powder (T_1- FFR+ 50 g CP, T_2- FFR+30g CP, T_3-FFR+10g CP and T_4- T_4- Pure FFR).

Dietary treatments	Mean score	Qualitative description
Treatment 1 (FFR+50g CP)	8.15	Like Very Much
Treatment 2 (FFR+30g CP)	8.00	Like Very Much
Treatment 3 (FFR+10g CP)	8.25	Like Very Much
Treatment 4 (Pure FFR)	8.45	Like Very Much

Aroma of Meat

Table 5 shows the result with regards to the aroma of the meat samples. Treatments 3 and 4 have the highest mean scores ranging from 8.3 to 8.25 with a qualitative description of "Like very much" while treatment 1 and 2 obtained a mean score ranging from 7.85 to 7.95 with a qualitative rating of "Like moderately". An analysis of variance showed no significant differences between means.

Table 5. Acceptability of Meat Aroma of Chickens fed with Formulated Feed Ration supplemented with Native Siling Labuyo Powder (T_1- FFR+ 50 g CP, T_2- FFR+30g CP, T_3-FFR+10g CP and T_4- T_4- Pure FFR).

Dietary treatments	Mean score	Qualitative description
Treatment 1 (FFR+50g CP)	7.85	Like Moderately
Treatment 2 (FFR+30g CP)	7.95	Like Moderately
Treatment 3 (FFR+10g CP)	8.3	Like Very Much
Treatment 4 (Pure FFR)	8.25	Like Very Much

Flavor of Meat

Table 6 shows the degree of acceptability in terms of meat flavor. Treatment 2 obtained the highest mean score of 8.10. Treatment 1 and Treatment 4 may have a lower mean score of 8 and 8.05, however, the three treatments fall under the same qualitative description of "Like very much" while Treatment 3 obtained the lowest mean score of 7.9 with a qualitative descriptive rating of "Like Moderately". The meat samples from the four treatments in terms of flavor are acceptable by the selected sensory evaluation panel as there are no significant differences between treatment means that were statistically obtained.

Table 6. Acceptability of the Flavor of Meat Chickens fed with Formulated Feed Ration supplemented with Native Siling Labuyo Powder (T_1- FFR+ 50 g CP, T_2- FFR+30g CP, T_3-FFR+10g CP and T_4- T_4- Pure FFR).

Dietary treatments	Mean score	Qualitative description
Treatment 1 (FFR+50g CP)	8	Like Very Much
Treatment 2 (FFR+30g CP)	8.10	Like Very Much
Treatment 3 (FFR+10g CP)	7.9	Like Moderately
Treatment 4 (Pure FFR)	8.05	Like Very Much

Texture/Tenderness of Meat

Table 7 shows the acceptability of meat texture/tenderness. Treatment 4 (8.35), treatment 3 (8.20), and treatment 1 (8.1) obtained the qualitative description rating of "Like very much" while treatment 2 had a mean of 7.8 with an equivalent descriptive rating of "Like Moderately". In this parameter, the texture and tenderness of the meat samples are acceptable, as statistical analysis shows no significant differences between means.

Table 7. Acceptability of Meat Texture/Tenderness of Chickens fed with Formulated Feed Ration supplemented with Native Siling Labuyo Powder (T_1- FFR+ 50 g CP, T_2- FFR+30g CP, T_3-FFR+10g CP and T_4- T_4- Pure FFR).

Dietary treatments	Mean score	Qualitative description
Treatment 1 (FFR+50g CP)	8.1	Like Very Much
Treatment 2 (FFR+30g CP)	7.8	Like Moderately
Treatment 3 (FFR+10g CP)	8.20	Like Very Much
Treatment 4 (Pure FFR)	8.35	Like Very Much

General Acceptability

Table 8 shows the general acceptability of the meat samples. Treatments 2, 3, and 4 attained a mean score of

8.10, 8.40, and 8.40 (Like very much) while treatment 1 had a mean score of 7.10 (Like Moderately). Treatments 2, 3 and 4 have no significant differences between their treatment means. However, they are significantly different to treatment 1.

Table 8. General Acceptability of Meat of Chickens fed with Formulated Feed Ration supplemented with Native Siling Labuyo Powder (T_1- FFR+ 50 g CP, T_2-FFR+30g CP, T_3-FFR+10g CP and T_4- T_4- Pure FFR)

Dietary treatments	Mean score	Qualitative description
Treatment 1(FFR+50g CP)	7.10 [b]	Like Moderately
Treatment 2(FFR+30g CP)	8.10[a]	Like Moderately
Treatment 3(FFR+10g CP)	8.40 [a]	Like Very Much
Treatment 4(Pure FFR)	8.40 [a]	Like Very Much

Meat Sensory Evaluation Overall Result

Table 9 shows the overall result of the meat sensory evaluation. Based on the data, Treatment 4 obtained the highest mean score of 8.31 with a corresponding qualitative description rating of "Like it very much" followed by Treatment 3 with an average mean of 8.22 (Like Very Much) while Treatment 1 and Treatment 2 obtained 7.84 and 7.99 mean scores with the same quality description of "Like Moderately".

Overall result implies that the meats of chickens fed a formulated feed ration supplemented with different levels of dried chili powder (50g, 30g and 10g) are generally acceptable in appearance, aroma, texture or tenderness and flavor to consumers.

Table 9. Meat Sensory Evaluation Over-all Result.

Treatments	Meat sensory parameters					Total	Mean	Qualitative Description
	Appearance	Aroma	Flayor	Texture	General Acceptability			
Treatment 1 (FFR + 50g CP)	8.15	7.85	8	8.1	7.10[b]	39.2	7.84	Like Moderately
Treatment 2 (FFR + 30g CP)	8	7.95	8.1	7.8	8.10[a]	39.95	7.99	Like Moderately
Treatment 3 (FFR + 10g CP)	8.25	8.3	7.9	8.25	8.40[a]	41.1	8.22	Like Very Much
Treatment 4 (Pure FFR)	8.45	8.25	8.05	8.35	8.40[a]	41.5	8.3	Like Very Much

Conclusion and recommendations

Based on the findings, there are no significant difference among the four treatments on the growth performance, carcass quality and organoleptic characteristics. However, numerical data showed an interesting improvement in feed intake, weekly gain in weight, percentage growth rate (%), feed conversion ratio, as well as carcass features in diets with 50 g of chili powder compared to pure FFR. Further, the meat of chickens is generally acceptable in appearance, aroma, texture or tenderness and flavor to consumers. The type and strains of broiler chicken, environmental factors, and the production system used are factors affecting the performance of the experimental chickens. With this, it is recommended that the formulated feed ration be supplemented with different levels of dried chili powder for use in broiler Cobbs, which are considered as fast-growing meat-type chicken and should be reared under pure confinement. Moreover, since chili "native labuyo" has a phytogenic substance, studies measuring its potential as an antiviral, antifungal, antiparasitic can also be performed.

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