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Research Article

The Utilization of Papaya Leaves as Part of Feed in Broiler Chickens

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Abstract
The research to determine the utilization of the level of vegetables waste in feed on broiler chickens' production performance has been carried out in the experimental cages of Poultry Production, Faculty of Animal Science, Universitas Andalas, West Sumatra Province. This study used 100 heads day-old chickens for six weeks of class. The research design was a completely randomized design (CRD) with four treatments and five replications. The treatments used were: treatment A feed without papaya leaves flour (control), B feed with 2% papaya leaves flour, C feed with 4 % papaya leaves flour, D feed with 6% papaya leaves flour. The variables observed were performance of chickens, energy and protein intake, protein efficiency, growth rate, meat mass and income over feed cost the results showed that the addition of different papaya leaf flour had not significant (P >0.05) on the research. The conclusion of this research is that giving of papaya leaf flour in rations up to 6% can be used it can as a substitute for some broiler chicken feed, it does not have a negative effect on the growth of broiler chickens

Keywords
Broiler, papaya leaf, growth rate, performance, protein intake.

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Introduction

Public demand for broilers has recently increased in direct proportion to the increase in population, which will have an impact on the broiler population in Indonesia. According to the (Citrawidi, Murningsih, & Ismadi, 2012), the broiler population in Indonesia in 2019 reached 1,891,434,612 heads. Broilers are one of the sources of food to meet human nutritional needs, especially animal protein.

The chicken meat consumed is usually from broiler chickens because broiler chicken is a plant-based source of animal protein is useful for growth for the body besides chicken meat is relatively cheap. Poultry such as broilers, which are often relied on as meat producers, have characteristics such as fast growth, efficiency in rations, slow movement, short and sturdy legs and good fat deposits (Eleazu, Eleazu, Awa, & Chukwuma, 2012). Improving the quality of poultry with good performance requires efforts to provide feed that is according to the requirement of poultry in the ration. According to (Rasyaf, 2003), the ration is the composition of several poultry feed ingredients in it must contain nutrients as a unit, in amount, time and proportion that can meet all livestock needs. The ration given must be able to meet the needs of nutrient substances needed by the animal's body for various body functions such as basic life, production, and reproduction (Umiyasih & Wina, 2008).

About 70% of production costs are broiler ration costs. One alternative to reduce the high cost of rations is by utilizing existing agricultural waste. One of them is papaya leaf. The many types of forage, papaya leaf plants are an alternative that can be used to improve production and eggs. Some farmers use papaya leaf for their livestock with the aim of relieving stress on poultry and some believe papaya leaves can also be healthy for poultry. Papaya leaves are rich in proteolysis enzymes, namely Papain, chymopapain A and B, and papaya peptidase are all enzymes found in papaya. (Yadava, Burris, & McCrary). According to(Hasanah, 2005), Papaya leaves contain a lot of papain enzymes that have the ability to form new proteins or protein-like compounds called plastering, which are the result of protein hydrolysis. Papain is a natural digestive aid that works well compound that proteins are broken down, and the digestive system is cleansed.(Poulter & Caygill, 1985) According to (Sutama, 2008) the papain enzyme has antimicrobial properties that can inhibit the performance of some microorganisms, and -carotene can function as an antioxidant. Papaya leaves contain alkaloids, saponins, tannins, glycosides and flavonoids(Adachukwu, Ann, & Faith, 2013).(Eleazu et al., 2012) Reported that papaya leaves contain 0.80% saponins, 6% alkaloids, 6.7% flavonoids and 0.62 g/g HCN. The leaves of such papaya are alkaloid and proteolitytic enzymes including papain, khimopapain lysosome are also abundant play a function facilitating company work in the intestines of the digestive process (Kamaruddin & Salim).

Leaves green papaya have a dry matter of 87.37%, crude protein 16.77%, crude fibber 16.3%, fat 8.55%, ash 12.4%, calcium 4.57%, phosphorus 0.38%, as well as gross energy 4102 kcal/kg(Widiyaningrum, 2000) Papaya leaves also really have tannins, witch seem to be anti-nutritive ingredient in fresh form by 5-6% (Wagner, 2013) To reduce the tannin content, physical processing such as drying or heating can reduce the tannin content in the forage (Widodo, 2005). Papaya leaves are widely used in broilers because they are believed to increase the growth rate. According to (Bota, Desjardins, Quinn, Affronti, & Friedman, 2007), the addition of 6% papaya leaves in commercial rations can have a result on weight gain, rationing consumption and increase in ration conversion of laying hens.

Papaya leaves have a limiting factor, namely tannins which are anti nutrients that can have an impact on function of amino acids function and the usefulness in term of protein.. The tannin content in fresh papaya leaves is 5-6% (Widodo, 2005). Based on several previous studies, processing by drying or heating can reduce tannin levels in forage. According to (Nurhidayat, 2013); in(Widodo, 2005) , heating a solution of oak leaves at a temperature of 90˚C can reduce tannin activity, in line with research by (Makkar, 2003); in (Widodo, 2005) , that there was a decrease in tannin activity in Acacia saline with drying treatment in the sun. Therefore, the use of papaya leaves in the ration can be done by drying or heating in order to reduce the activity of tannins in the forage.

Papain enzyme is a protease enzyme that can be extracted from the papaya tree, especially the papaya leaves. The use of the papain enzyme is easier considering that papaya trees are spread in almost all areas and are very easy to get anywhere. The papain enzyme present in papaya

leaves has antimicrobial properties that can inhibit the performance of some microorganisms, and -carotene in papaya leaves can function as an antioxidant.
According to(Tamir & Asefa, 2009) that papaya leaves contain a lot of papain enzymes which have the ability to form new proteins or compounds similar to proteins called plasteins, which are the result of protein hydrolysis. What is superior about papaya leaves is that they have papain enzymes which are a source of protease enzymes that can improve the quality of low crude protein feeds.
Body weight has an important effect on the maintenance of poultry because it can affect the high production in livestock rearing and will increase the selling value of livestock, which will be calculated using profits in surplus of feed cost. The gross margin above the feed cost is a way to determine the economic value of broiler chicken maintenance by calculating the income from the sale of chickens minus the total cost of feed in one maintenance period.
Based on this description, the author uses broiler chickens as the object of research because chickens are sensitive to the addition of rations, so that observations can be made on the growth rate, meat mass, as well as profit over cost.

Objectives of the investigation

Experimental research in poultry production UPT cages, Faculty of Animal Husbandry, Universitas Andalas. The animals utilized in this research were 100 DOC (day old chick) strain Cobb CP 707. The method used was a Design that is completely random (CRD). The were four treatment with five replication (each replication had five hens) as a sub-repeat and called the experimental unit). In this study was the administration of papaya leaves (*Carica papaya* L) in regard to quantities namely with doses, namely: A feed (zero papaya leaves) as control B feed with 2% papaya leaves, C feed with 4% papaya leaves and D feed with 6% papaya leaves. The mathematical model and design used are accordance to (Steel & Torrie, 1993)Yij = μ+ τi +ε ij**.** Every the cage unit includes a feeding station as well as drinking water. The feed used were broiler chickens containing metabolic energy of 3000,70 – 3022,02 Kcal/Kg and crude protein 20,04 – 20,21%

Create Papaya Leaves Powder

Making papaya leaf flour by collecting papaya leaves in the papaya fields. Old and green leaves that are not used anymore are sliced and air-dried for 1-2 days. To optimize the drying process, papaya leaves are dried in an oven for 24 hours at 40°C. Next, the papaya leaf slices are dry and then ground using a blender until they become flour
The ingredients for the feed used in the study came from the poultry shop with the composition of corn, bran, soybean meal, fishmeal, coconut oil, top mix papaya leaf flour. The feed used in the first week is feed of commercial use and then the feed is stirred by itself with based on the inclusion of papaya leaves powder

Table 1.
Nutrient material and metabolic straight of the component of the study feed.

Nutritional value	Crude protein	Fibre	Crude Lipid	Ca	Phospor	ME
Corn[a]	8,58	2,91	3,77	0,38	0,33	3340
Rice bran[a]	9,28	16,02	4,08	0,63	0,26	1630
Fish flour[a]	34,6	2,80	1,52	5,55	2,60	2820
Soybean meal[a]	43,43	7,50	2,49	0,63	0,36	2240
Top Mix[c]	0,00	0,00	0,00	5,38	1,14	0,00
Palm oil[a]	0,00	0,00	100	0,00	0,00	8600
Papaya leaves powder[d]	16,77	16,30	8,55	4,57	0,38	2721

Citation:

a) [21]
b). Laboratory examination of non ruminant cattle 2015
c). [22]
d) The Laboratory's Analysis Findings of Non Ruminansia, 2021

The nutrient content and metabolic energy of feed ingredients can be seen in Table 3, which is given in accordance with the standard of feeding with the growth stage (Rahayu, Sudaryani, & Santosa, 2011).

Table 2.
The substance that makes up the research ration`s nutrient content and metabolic energy (percentage)

Ration	Ration A	Ration B	Ration C	Ration D
Corn	55,00	54,00	53,1	52,50
Rice skin	2,7	1,8	1	1
Fish meat	14,00	14,00	14,00	14,00
Waste from soybean	26,00	26,00	25,8	24,00
Mineral	0,50	0,50	0,50	0,50
Palm oil	1,80	1,70	1,60	1,50
Papaya leaves powder	0,00	2,00	4,00	6,00
Total	**100,00**	**100,00**	**100,00**	**100,00**
CP	21,11	21,27	21,27	21,09
CL	4,53	5,02	5,02	5,04
Fibre	4,53	4,68	4,84	5,05
Ca	0,97	1,06	1,13	1,21
P	0,63	0,62	0,60	0,58
Metabolic Energy (ME) (Kcal/Kg)	3013,28	3010,94	3009,10	3005,76
Tanin (g/Kg	0	0,1	0,2	0,3

Note: Tables 1 and 2 are used to calculate the aforementioned feendings

Providing ration and water to the animal

Ration give started from DOC until 6 weeks using treatment feed which was given ad libitum with papaya leaf powder concentrations of 0%, 2%, 4%, and 6%. Each feeding is weighed according to the needs of the livestock during maintenance. Every day during the study cleaned cages, sanitized refilling station and animal waste, reared chickens for six weeks.

Analytical statistic

According their Completely Analysis variance, Randomized Design (CRD) pattern if the finding significant proceed with the ANOVA Analysis of variance as directed by the protocols (Steel & Torrie, 1993)].

Discussion of the Findings

The influence of the amount of the time spent using papaya leaves flour on the growth rate, mat mass and the Income over feed cost of broiler chickens

Table 3.
The Average growth rate, meat mass and Income over feed cost (*IOFC*) of broiler chickens after using papaya leaf flour in feed

Treatment	Growth rate	Meat mass	*IOFC* (Rp)
A	0,45	384,00	6666,03
B	0,45	240,00	5712,36
C	0,45	321,60	5801,07
D	0,15	310,00	6049,15

Explain: not significant here were no chicken rations available difference (P <0.05)
In Table 3 it can be seen that the growth rate of broiler chickens ranges from 0.45 – 0.51 g/week. The analyses of variance revealed the following the administration of papaya leaves up to 6% during the study (P>0.05) did not have a significant influence, meaning that the use of papaya leaf flour up to 6% on broiler. There were no chicken rations available a negative impact on growth rate. The expansion rate of chickens given papaya leaf flour was not significantly different because the tannin content in papaya leaves was still below the tolerance limit by poultry. The highest tannin content in the study was 0.3 g/Kg in the ration; this was supported by (Zain, 1993)statement that the tannin content of up to 0.5% in the broiler ration was tolerated. It is possible that giving papaya leaves also reduces the consumption of feed because papaya leaves have a bitter taste because they contain karpain alkaloid compounds. According to (Sastrohamidjojo, 1992) that the bitter taste of papaya leaves is caused because the papaya leaves contain karpain alkaloid compounds. Will affect the rate of growth. According to research by (Muharlien & Nurgiartiningsih, 2015)it was shown that the use of in the form of the papaya waste of juice and flour did not have a significant effect on feed consumption. This is inversely proportional to the results of research by (Umiyasih & Wina, 2008) The fact that use of papaya leave powder in quail rations at the level of 4% can increase feed consumption but at a level of 6%, ration consumption tends to be lower. According to (Rasyaf, 2011), feed consumption is a factor that greatly affects the growth of broiler chickens; if feed consumption decreases then growth will increase, slow. According to (Allen D. Tillman, Hartadi, Reksohadiprodjo, Prawirokusumo, & Lebdosoekojo, 1998)that the speed of livestock growth depends on the ration consumed, if the ration consumed is relatively more, the growth will be fast and vice versa. According to(Blakely, 1977) the level of ration consumption will affect the final weight and growth rate due to the increase in body weight, shape, and body composition, which is essentially the accumulation of ration consumed by livestock. In addition, the composition of the ration consumed by chickens is not much different, composed of same protein 20-21% as well as metabolic energy of 3000 kcal/kg, there are in accordance with the statement of (Aisjah & Abun) that the same given metabolic energy in the ration will result in ration consumption, the same thing, it also applies to rations containing the same protein, so protein consumption will also be the same.

In Table 3, it obvious that the typical mass of meat in the study was 321.60 g - 384.00 g. It was determined based on the findings of the analysis of variance. it was known that the use of rations mixed with papaya leaf flour up to 6% had On the other hand, there was no significant influence on the (P > 0.05) mass of broiler chicken meat. According as for (Poulter & Caygill, 1985) this the greater the slaughter weight of the broiler, the higher the boneless chicken, which indicates an increase in the content of boneless meat produced. According to(Hafid & Priyanto, 2006), boneless is the meat part of the carcass that has been separated from the bone or can be interpreted as bone-free meat. Boneless evaluation of carcass has very important uses, especially it can be used to measure the carcass part that can be consumed and used as a reference for measuring the level of production. The non-significant results were caused by the consumption of feed obtained which was also non-significant because feed consumption is a factor that affects boneless this is the weight, this is in accordance with the viewpoint of (Suryanah, Nur, & Anggraeni, 2016) which states the several variables that may have an impact on the percentage of boneless chickens feature consumption feed during rearing and handling when separating meat and bones. This is in accordance with the results of the study by (Variani, Pagala, & Hafid) who found a positive relationship between slaughter weight and the percentage of meat or boneless chicken. The development and growth of chickens will increase as the age of broiler chickens increases (Sawadi & Hafid, 2016).

In addition to feed consumption, the protein intake factor also affects the load of the mass of meat generated. During this research, it was found that protein intake was non-significant according to (Anggorodi, 2009) stating the function of protein for basic life, growth of new tissue, repairing damaged tissue, metabolism for energy and production.

In the table 3 it can be seen that the IOFC value of treatment B C and D, the highest IOFC value in treatment D Rp. 6049,15.-/head According to[38] good growth does not guarantee profits, but good growth accompanied by low food costs will bring maximum profit. The IOFC value is determined by the sale of chickens and the cost of feed incurred. Pressing the price in the preparation of the ration will get a high IOFC value. This statement is supported by (Rasyaf, 2003) who said that to obtain the difference in income with high costs, namely by reducing the cost of rations through increased supervision of the provision of rations through seed selection. According

to the factors that affect IOFC are the price of rations, the amount of consumption, and the selling price. At the level of 6% the value of Income over feed is almost the same as 0% because the provision of papaya leaves to 6% is safe for consumption by chickens, the difference between the use of papaya leaf flour at the level of 6% and 0% is only Rp. 616.88 (Nurrohman, Yunianto, & Mangisah, 2015) obtained Income over feed costs using papaya leaf flour with a level of 6% in broiler chicken rations providing a profit of Rp. 6049,15.-, while in the research of (Setyaningrum, Handayani, & Setiadi, 2016) the use of S. molesta flour has having substantial impact for salary over feed cost such as selling fowl carcass. The high and low IOFC value is influenced by the consumption of rations and the growth of body weight of chickens, if the consumption of rations is more, the growth of chickens will be maximized and provide maximum profit. (Citrawidi et al., 2012), stated that the average body weight of CP 707 broiler chickens at week 6 reached 2643 g/head, while the highest average final weight was only 1094.5 g/head for the use of papaya leaves. in the study, the mixed feed itself was of lower quality than commercial feed. According to the announcement by it indicate as the speed of livestock growth is determined by the amount of ration consumed, if the ration consumed is relatively large, the growth will be fast.
The impact of the amount of usage of papaya leaves flour based on intake power, carcass weigh and percentage of broiler chickens

Table 4.
Average Energy, protein Intake, (calories/g/head) and protein efficiency ratio of Broilers strain Cobb-707 during the study

Treatment	Energy intake	Protein intake	Protein efficiency ratio
A	1426,26	97,66	1,79
B	1449,83	99,93	1,61
C	1374,50	94,63	1,68
D	1493,52	102,65	1,63

Explain: not significant effect (P <0.05)

The outcome that not significant effect were caused by the consumption of rations showing that the results had not significant effect and also the energy content contained in the rations was almost the same even though the provision of papaya leaf flour was different for each ration, so it did not have a negative effect on ration consumption. According to [42] energy intake is calculated based on ration consumption multiplied by metabolic energy in the ration. In addition to consumption, the colour in the darker treatment ration will also affect the broiler chicken ration because broiler chickens prefer the colour of the ration is lighter than the colour of the dark ration. The value of energy intake in this study is lower than in previous studies. Research by (Nurrohman et al., 2015) with the addition of avocado seed flour reported that the average energy intake of broiler chickens in the treatment was up to 15% avocado seed flour) 186.61 kcal/head/. This is certainly not in according to viewpoint of (Kayadoe & Hartini, 2013) according to which the energy intake of broiler chickens can reach 485.71 kcal/head/. In general, chickens increase their consumption to meet their energy needs, besides that the level of palatability can stimulate chickens to increase their consumption.
It was determined based on the research findings of the analysis variance test; it was found that the utilization such as ration mixed with papaya leaf flour having no statistically significant impact (P>0.05) on protein intake during the study. Its results there had no significant effect were influenced by 3 factors, namely the energy consumption of the ME content in the ration and the crude protein content in the feed. Analysis of variance from energy consumption showed that the outcome had there is no discernible impact (P>0.05) The second with third factors, namely this ME content in the ration and the crude protein content in the ration were the same in each ration, namely for ME, which was 3000 kcal/kg protein content. 20%, so the value of the protein intake of the ration is almost the same. The value of this protein intake is even lower when compared to previous studies.(Mide, 2013) Research with the addition of katuk leaf flour (*Saoropus androgynus*) reported that protein consumption of broiler chickens up to the age of 6 weeks could be up to 124.49 grams/head/week with the provision of metabolic energy of 3034 kcal/kg and crude protein. by 18.07%. According to(Aisjah & Abun) energy metabolism given the same in the ration will result in the consumption of the same ration as well, it also applies to the ration containing the

same protein then the protein consumption will also be the same. This is also in accordance with (Wahju, 1997) statement that the consumption of large amounts of ration will also be followed by a large consumption of protein as well. The protein efficiency ratio, which result was owing to the fact that they were not considerably different 2 factors, namely its growth of body mass index which analysis of variance outcomes had not different effect also protein intake which also the outcome of the statistical analysis of variance had not significant. The high rate of body weight gain compared to protein intake because in the ration given to broilers, it not only contains protein, but also other nutrients such as carbohydrates, fats, phosphorus and crude fibber. The outcome of this research are less than the results of who reported that the EPR value of broiler chickens was 2.05-2.46 with the treatment of giving katuk leaves up to a level of 3% and metabolic energy of 3004 kcal/kg as well as protein. 18%. According to (Wahju, 1997) that the protein retained by broiler chickens is 67%. The research of (Khodijah & Wiradimadja, 2012) also reported that the protein efficiency balance of broiler chickens was 1.94 with the condition of metabolic power 3200.46 kcal/kg and protein was 23.07%. In this study, the ration mixed with papaya leaf flour contained 3000 kcal of metabolic energy and 20% protein, with such a requirement of metabolic protein and energy that it was not able such as produce a good protein efficiency ratio for livestock. The protein efficiency ratio decreased due to an increase in the protein ration probably because some of the protein was used to meet energy needs (Ewing, 1983). This is also clarified by statement which states that the protein efficiency ratio is used to test the effectiveness of a protein ration, which means that if the value of the protein efficiency ratio has decreased, it means that the effectiveness of the use of protein in the ration is also low.
The impact of the amount of time spent using of papaya leaves flour body's consumption of rations, weigh live and broiler chicken conversion in Table 5

Table 5.
Average, Ration Consumption (g/head) and protein efficiency ratio of Broilers strain Cobb-707 during the study

Treatment	Body weigh (g/head)	Ration Consumption (g/head	Conversion
A	1045,31	1737,57	1,69
B	977,01	1762,57	1,81
C	948,56	1682,69	1,78
D	1004,73	1819,03	1,83

Explain: didn't affect difference (P <0.05)

According to Table 5. It's possible seen there the average consumption of broiler chickens during the study ranged from 1682.69 – 1819.03 g/head. The analysis of variance in this study shown that the utilization of papaya leaf powder did not have a different effect (P>0.05) to the consumption in broiler chicken rations.
(A. D. Tillman, Hartadi, Prawirokoesoemo, & Reksohadiprodjo, 1991), stated that if each treatment had almost the same concentration of metabolic energy and crude protein percentage, the birds would consume feed that was not much different between each treatment. This is in line with the viewpoint of (Negoro, 2014) according to which In addition to the energy factor, the amount of feed consumed is determined by the energy level in the feed. The proclivity toward coarse fibber at the quantity of food eaten could also be impacted either by feed. Environmental temperature, chicken health, given energy, feeding system, sex, and chicken genetics will have an influence on ration consumption. To see the amount of ration consumed during the study, it can be seen on the feed consumption graph
The results of the non-significant research are the same as t according to which he results of the research of (Imam, Nurmi, & Hasibuan, 2018) showing the non-significant results on the use of papaya leaf flour on the consumption of quail to a level of 15%. The results of the research by (Khodijah & Wiradimadja, 2012) also showed non-significant results on the effect of giving whitish decoction of soursop leaves turmeric, as well as cherry leaves their combination in drinking water on the consumption of broiler chicken rations.
In average consumption at broiler ration CP-707 strain obtained during the 6 weeks of the study was 682.69-1819.03g/head. The results of this study were lower than the average ration consumption obtained (Akhsan, Harifuddin, & Irwan, 2020).The performance of Cobb strain broiler

chickens given turmeric herbs gave broiler ration consumption as much as 1940-2010 g/head. (Yuliawati, Lukito Setiawan, & Wijaya Mulya, 2007), reported that the addition of 1-2% turmeric to the ration of broiler chickens aged 6 weeks to the ration consumption was 2596.26-2882.08 g/head. The average consumption of this study was lower than the standard of with consumption of 4604.00 g/head.

Result is based on Table 5. This can be observed the average body weight gain of broiler chickens during the study ranged from 948.56 to 1045.31 g/head. The outcomes of the results of the analysis of variance revealed that the use at rations mixed plus papaya leaves as much as 6% had no significant influence (P>0.05) on broiler chicken body weight during the study. The type of livestock, environmental temperature, type of livestock, and the nutrients in the proportions influences the increase in bodily weight. The rations that have high nutritional value are good for increasing body weight gain during the study. (Fadilah & Polana, 2005) One of the elements that impacts the outcome is stated size of the body weight gain of broilers is feed consumption and adequate nutritional needs so that feed consumption can have a positive effect on body weight gain.

According to the results of the analysis of variance provision at papaya leaf flour to broiler chicken consumption on broiler hens' body weight increase had no different effect (P>0.05). However, in terms of the outcome of the research conducted, it revealed that the availability of papaya leaves powder in broiler chicken rations in treatment D there was a tendency to increase body weight gain after treatment A (control) compared to treatments B and C. This can be explained there has been a rise in growth in body weight of chickens. Broilers who receive rations using papaya leaf flour are due to the activity of the papain enzyme which has the same function as proteolytic enzymes, namely loosening peptide bonds in proteins, thereby increasing protein digestibility (Sosrodihardjo, 1991). This opinion is by (Grollman, Smolar, Ommaya, Tombaccini, & Santisteban, 1986), also supported that papain works like pepsinogen and trypsinogen in the stomach of animals, so that food substances are easier to digest, especially very beneficial for monogastric (monogastric) cattle. The results of this study are the same as the results of (Simanjuntak, 2017) which showed that by including basil leaf powder up to a degree of 12% incorporating it into the stream had no discernible effect (P>0.05) on the body weight gain of broilers. This results on research by (Harmoko, Wati, & Suhadi, 2020) indicated that added turmeric to the combination increased the outcomes, leaf powder at dose of 0.12% could not increase the daily body weight gain of super free-range chickens.

The average weight increases in the body of broiler strain CP-707 obtained during the 6 weeks of the study was 948.56 – 1045.31 g/head. This result is lower than previous studies. [60], showed the results of adding *Moringa* leaf flour in feed to broiler body weight gain, which ranged from 225.98-267.11 g/head/week. This study is also lower than the research obtained the performance of Cobb strain broiler chickens given turmeric herbs to broiler body. The amount of weight gained varied 1.56-1.65 kg/head. The estimate body weight gain was lower in our research than the standard of quality, the resulting weight was 2643.00 g/head.

Based on the results of analysis of variance showed that the use of rations mixed with papaya leaves up to 6% had no significant effect (P>0.05) on the conversion of broiler chickens during the study, this was because the level of feed consumption and body weight gain in each treatment had no significant effect, so that the feed conversion also has no significant effect. This is in line with the research by (Sudjatinah & Widiyaningrum, 2005), regarding the use of feed with a mixture of cassava and added 5% *Moringa* leaves did not show any impact on body weight increase, feed conversion, final body weight, and feed cost per kg are all factors in play, body putting on weight in proportion to feed that did not contain a mixture of cassava and *Moringa leaves*. In line with the research of (Olugbemi, Mutayoba, & Lekule, 2010) that giving papaya leaf extract to broiler chickens had no evident impact on the stream conversion. This conversion rate is higher than the standard of The conversion rate of CP 707 broiler chicken rations aged 6 weeks under optimal conditions can reach 1,75.

Conclusions

Here on premise of the findings of this study, it can be determined that providing flour produced using papaya leaves (*Carica papaya* L) can still be used in rations up to the level of 6% to Broiler chicken productivity was not significantly affected. Not have a significant effect on the performance of broiler chickens.

Reference

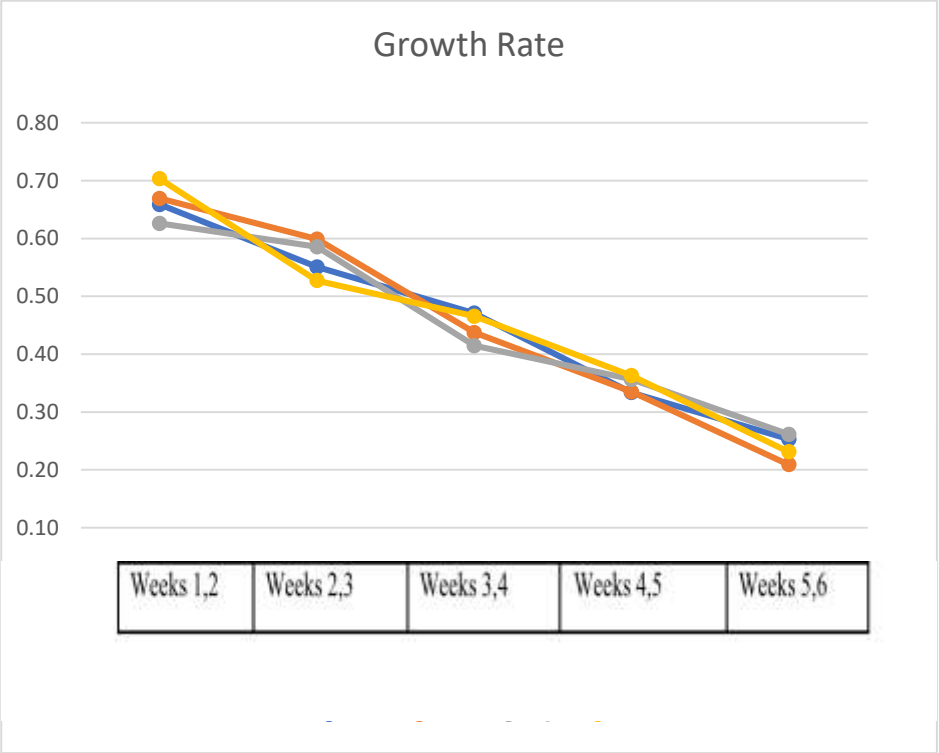


Figure 1. Graphic Growth rate on the research

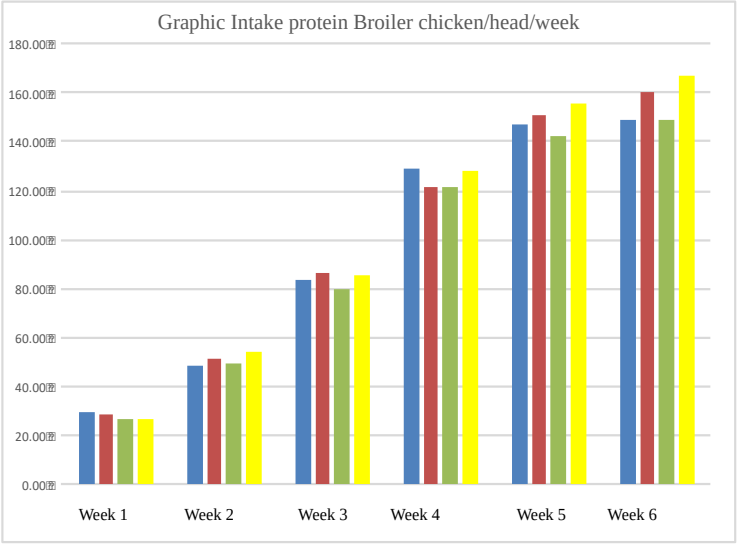
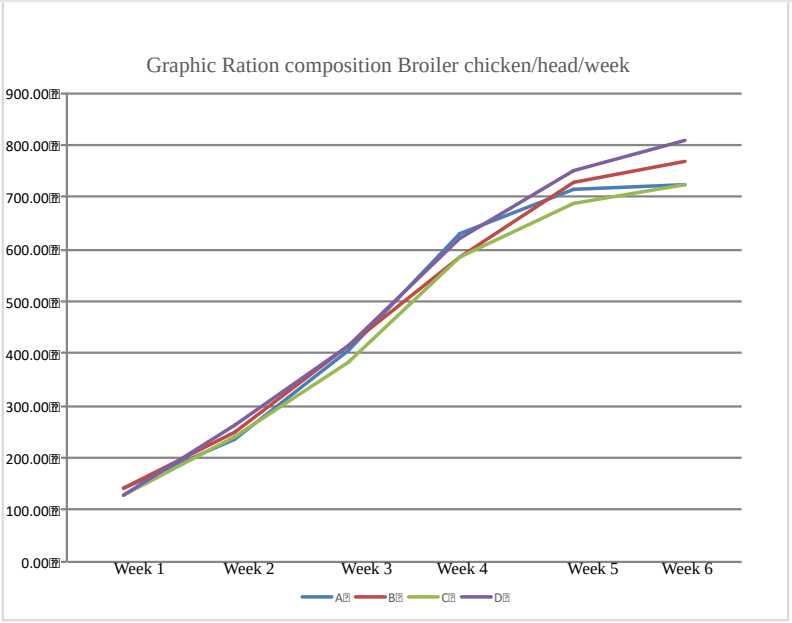


Figure 2. Graphic Protein intake on the research



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