BIBLIOGRAPHY

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ABSTRACT

The study was conducted to determine the feeding value of local feedstuffs; the nutrient content of the local feedstuffs, the preference of rabbits based on palatability of these feedstuffs and the gain in weight of rabbits. Twenty four mature rabbits (New Zealand and Chinchilla) were distributed using the Completely Randomized Design to the following treatments: T_0- *Galinsoga parviflora*,(galinsoga), T_1- *Talinum triangulare* (talinum), T_2- *Ipomoea aquatica* (kangkong) and T_3- *Moringa oleifera* (malunggay). The experimental period lasted for two weeks.

Forage samples were analyzed for dry matter, crude protein, crude fiber, ash and gross energy. Results showed that moringa has the highest dry matter with 12.45% and gross energy with 4249kcal/kg. *Ipomoea aquatica* was determined the highest in crude protein with 29.93%. Also, talinum with 29.50%. has the highest ash content. Furthermore, galinsoga has the highest in crude fiber with 22.33%. Palatability of the different forages showed high in *Ipomoea aquatica* and *Galinsoga parviflora.* Gain in weight of experimental rabbits were highest in kangkong and galinsoga compared to talinum and malunggay. Among the four feedstuffs, kangkong and galinsoga are recommended as forage for rabbits.

INTRODUCTION

Rabbits are herbivorous animals that belongs to the family *Leporidae* and can be found in several parts of the world. Raising of the said species may be described according to whether rabbit is bred for a profit or as hobby. In fact, rabbit production is identified for the following advantages: high quality skins are for garments and trimmings, manure can be used as fertilizer for crops and include its use in medical and cosmetic research. Moreover, rearing of rabbits in developing countries has been widely seen as a means of poverty alleviation for supplying high quality animal protein.

However, inadequate and high cost of feed ingredients brought about by stiff competition between people and monogastric animals caused the high cost of concentrates. Feeds became the problem for most rabbit producers and farmers. Using concentrate feeds as practiced by rabbit raisers produce very expensive rabbits that consumers are not willing to purchase. Given low price of selling rabbits, the high cost of feeds has become a constraint to production. Generally, feeds accounts for 70% of the total cost of raising farm animals.

The constant increase in the cost of concentrates makes research aimed to identify potential feed sources that have little or no demand by humans. Such feed sources should be cheap and available for compounding livestock rations.

Fortunately, rabbits being a monogastric animal, have an enlarged cecum and colon with high bacterial population (Abou-Ashour *et al*., 2003) as cited by Gaafar *et al*., (2010). Feedstuffs are digested through the action of microorganism inhabiting the cecum of rabbits. Thus, rabbits being unique from other species have the ability to

consume many kinds of natural grasses, vegetables, leaves from trees, fruits and by products from kitchens or markets.

The feeding and nutrition of rabbits however, require potential feeds sources need to supply adequate quantity and quality for optimal growth. Forages must have a high nutritive value to be useful in livestock feeding, with high nutritive value can be a function of feed intake and efficiency of feeding of extraction of nutrients from the feed during digestion (Norton, 2003) as cited by Samkol *et al*., (2006).

Only limited data are available about the feeding value of tropical forages for rabbits. Therefore, it is important to study alternative feed sources that are high in nutrient content. This may help solve the problem of most rabbit producers including farmers regarding the cost of high concentrates. Furthermore, the research finding may develop a great attention among rural folks to engage in rabbit raising because of its minimal cost.

The study is proposed to provide the necessary information regarding the utilization of kangkong, malunggay, talinum, and galinsoga, leaves by rabbits. In addition, this will serve a data in the specific feeding properties of rabbits, including palatability and of the different leaves.

The general objective of this study is to determine the feeding value of local feedstuffs. Specifically, the aim of the study is to: determine the nutrient content of each feedstuffs , determine the preference of rabbits based on palatability of the feedstuffs and determine the gain in weight of rabbits.

The study was conducted at the Animal Genetic Resources (TANGERE) Project at Bektey, Puguis, La Trinidad, Benguet from November 2011 to December 2011.

REVIEW OF LITERATURE

Fresh green forage can replace approximately one-half of the concentrate mixture normally fed to animals and have been found out to be economical (Milsalvas, 2002) as cited by Dobo (2007). Forages do not only provide protein source but also give some essential vitamins such as vitamin A and C, minerals and oxycarotenoids (Duke, 1998) cited by Nuhu (2010).

Utilization of Malunggay Leaves

Recently, there has been an interest in the utilization of *Moringa oleifera* as a protein source for livestock. Studies show that moringa leaves have quality attributes that make a potential replacement for soyabean or fishmeal in non-ruminants also they reported that the twigs of these plants are very palatable to ruminants and have appreciable crude protein level (Sarwatt *et al*., 2002) as cited by Murro and Sarwatt (2004).

According to Fahey (2001) as cited by Murro and Sarwatt (2004), *Moringa oleifera* is widely cultivated and has become naturalized in many parts of the locations in the tropics. Young leaves are used in India as cattle fodder to improve milk yields and in Zimbabwe as animal feed (Clark, 2001) as cited by Murro and Sarwatt (2004). In the developing countries, moringa is a highly prized fodder, the leaves are used to feed cattle, sheep, camels, poultry, and donkeys (Kew, 2002) as cited by Nuhu (2010). Sarwatt *et al*., (2002) as cited by Murro and Sarwatt (2004) mentioned that in Tanzania both large and small scale farmers grow moringa for extraction of seed oil, so there is potential to used the foliage for feeding livestock.

Moringa foliages are inexpensive protein source for livestock feeding. The advantages of using moringa for protein resource for are numerous including the fact that can be harvested easily in several times in one growing season and has the potential to reduced feed cost (Murro and Sarwatt 2004).

Utilization of Kangkong Leaves

Kangkong (*Ipomoea aquatica*), a semi–aquatic tropical plant grown as leaf vegetable. It is known in English as water spinach, swamp cabbage and chinese spinach.

Ipomoea aquatica is a valuable feed resource for rabbits apparently providing adequate protein energy and other essential nutrients for growth (Phimmasan and Preston 2004). It also provides sufficient water (Samkol *et al.,* 2006). However, increasing the proportion of stem to leaf of water spinach diet will improve live weight gain and feed conversion of rabbits (Samkol *et al.,* 2006).

Preston (2001) as cited by Samkol *et al.,* (2006) states that water spinach have high in vitro N digestibility (68.8%) and high concentration of water extractable N (52%). In the preliminary trial conducted by Phimmasan and Preston (2004), using the indirect 'insoluble ash' method, it was found that water spinach had high digestibility indices of dry matter, ash, organic matter and crude protein (84.7, 76.7, 88.4 and 79.6% respectively) for growing rabbits. Moreover, the leaves and stems of water spinach contain more than 20% crude protein in dry matter basis (Sopea *et al*., 2001) cited by Samkol *et al.,* (2006).

Recently, Phallo *et al*. (2004) as cited by Samkol *et al*., (2006) explored the feasibility of using water spinach in combination with broken rice as readily digestible feed for growing rabbits. Furthermore, Prak-kea (2003) as cited by Samkol *et al*., (2006)

reported that linear increase in growth rate in pigs fed with water spinach, palm oil and broken rice when up to 6% of fishmeal replaced equivalent amounts of water spinach, which is attributed to improved amino acid balanced, especially in terms of the sulphur-rich amino acids. In addition, water spinach has used successfully to replace part of the protein in a diet of sugar cane juice for breeding sows (Thi Men *et al*., 2000) as cited by Phimmasan and Preston (2004). Preston and Rodrigues (2002) reported that water spinach was more palatable and higher digestibility than the cassava leaves.

Utilization of Talinum Leaves

Waterleaf (*Talinum triangulare*) is a herbaceous perennial caulescent and glabrous plant widely grown in tropical regions as leaf vegetables (Ezekwe and Igbokwe 2001). Talinum triangulare is edible and has some nutritive value (Folarin et al., 2001) as cited by Ekpo and Edoho (2007) .In addition, talinum leaves has some medicinal values in humans and acts as green forage for rabbits (Enete and Okun, 2010). Moreover, water leaf has some inherent characteristics which makes attractive to small farmers the leaves are used as fed for pigs, rabbits, cattle and goat (Schippers, 2000) as cited by Enete and Okun (2010).

Preliminary phytochemical studies on *Talinum triangulare* found the presence of omega-3 fatty acid high levels of nutritional important vitamin such as (C, E and Betacarotene), minerals such as (Ca, Mg, and K) and soluble fibers (pectin), all of which contributes to its highly elevated antioxidant values (Ezekwe *et al*., 2004) as cited by Aja *et al.*, (2010).

Utilization of Galinsoga Leaves

Galinsoga is an annual herb found in most temperate and tropical regions of the world as weed of many crops and waste land (Kagima, 2000). Ferhen (2008) as cited by Tariq *et al.*, (2008) has demonstrated the antioxidants and phenolic compounds present in this plant species. Moreover, the roots and juice of the whole plant is applied to treat wounds (Tariq *et al*., 2008).

The young stems and leaves of quickweed can be cooked and eaten as greens. The weed is none poisoning (Stubbendieck et al. 1995) as cited by Kagima (2000). In Java, the leaves are eaten by humans (Batra, 1979) as cited by Kagima (2000).

Recently, Abad (2002) stated that galinsoga, sweetpotato vine, cabbage and pigweed can be used as feed for rabbits. However, based on chemical composition and nutrient intake *Galinsoga parfivlora* and sweet potato vine had a higher nutritive value than the whole cabbage and pigweed.

METHODOLOGY

Materials

Mature rabbits of the New Zealand White and Chinchilla breed were used in this experiment. Other materials included individual cages constructed from wood and iron net, weighing scale, drinking troughs, record book, and polyethylene bags for storing samples.

The experiment used the following feedstuffs for rabbits: *Ipomoea aquatica* (kangkong), *Moringa oliefera* (malunggay), *Talinum triangulare* (talinum), *Galinsoga parviflora* (galinsoga) (Figures 1-4). The foliage was collected daily in Tayug, Pangasinan to be brought to the experimental area. The feedstuffs were collected daily from several resources: herbs from Tayug, Pangasinan and tree leaves from Tuba, Benguet. Galinsoga was harvested from La Trinidad, Benguet.

Figure 1. *Galinsoga parviflora*

Figure 2. *Talinum triangulare*

Figure 3. *Ipomoea aquatica*

Figure 4. *Moringa oleifera*

Methods

The study involved a palatability trial in which fresh foliage from the four feedstuffs were evaluated for preference by rabbit. Each feedstuff was offered with stalk, leaves and petiole. The palatability trial lasted for 14 days.

A total of 24 rabbits was randomly distributed into four treatments with six replications. The experiment was laid out following the Completely Randomized Design (CRD). The three feedstuffs including galinsoga as control was served as dietary treatments. The treatments were as follows:

T_0=Galinzoga(*Galinsoga parviflora*)

T_1= Kangkong(*Ipomoea aquatica*)

T_2= Talinum (*Talinum triangulare*)

T_3= Malunggay (*Moringa oleifera*)

As much as possible, the feedstuffs were obtained from the same source to minimize variation. Talinum and kangkong leaves were air dried for one day to minimize the high moisture content. About 300g of each feedstuff per day was offered initially in the feed rack (Figure 5). The feeding time start at 7:30 am and 4:30 pm.. Body weight was taken at the start and end of trial. The palatability trial lasted for 14 days. Free access to drinking water was provided daily. Forage samples were collected, chopped (Figure 6), oven dried (Figure 7) and subjected to grinding, passing through a 2mm sieve. A 50g sample was taken per dietary treatment and sealed in an airtight plastic bag (Figure 8).

Samples of each feedstuff were brought to the Animal Science and Dairy Sciences Cluster, Animal Nutrition Division, University of the Philippines Los Baňos, Laguna for chemical analysis.

Figure 5. Feedstuffs were offered in the feed rack.

Figure 6. Chopping of forage sample for oven drying.

Figure 7. Forage sample after oven drying

Figure 8. Forage sample for analysis

The following data were gathered:

1. Chemical composition of feedstuffs. The proximate composition of the test feedstuffs was analyzed using the methods of AOAC (1990).

   a. Gross energy. This was obtained by total energy of feed as measured by direct calorimetry.

   b. Crude protein. This was obtained by multiplying %N of sample to 6.25.

   c. Crude fiber. This was obtained by extracting the sample with boiling water ether, distilling off the ether and then weighing the residue.

   d. Ash. This was obtained by burning the samples at 450°C in temperature for at least two hours.

2. Body weight of animals. The weight of the experimental rabbits was measured at the start and at the end of the study using a livestock scale.

3. Amount of forage offered. This refers to the amount of forage given to the experimental animals.

4. Amount of forage left over. This was the amount of forage each experimental animal did not consume.

From the gathered data, the following were computed:

1. Feed intake. This was calculated as the difference between the total amount of feedstuff offered and total amount of feedstuff leftover. It was expressed as daily feed intake/duration of experiment.

2. Dry matter of intake. The dry matter intake was computed as feed intake multipliedby the %DM of the feedstuff.

3. Palatability or forage acceptance index. This was calculated as:

$$\text{Palatability index} = \frac{\text{Forage Consumed}}{\text{Forage Offered}} \times 100$$

Palatability index was classified as follows: 70-100% = High; 50-69% = Moderate; and 0-49% = Low palatability (Iyeghe-Erakpotobor and Muhammad, 2008).

4. Gain weight. This was computed on total and daily basis as:

a. Total Gain in Weight = Final Weight- Initial Weight

b. Average Daily Gain (ADG) = $\frac{\text{Total Gain in Weight}}{\text{Duration of Experiment}}$

Statistical Analysis

Analysis of variance was used to determine differences among treatments. Duncan's Multiple Range Test was used to compare treatment means.

RESULTS AND DISCUSSION

Chemical Composition of Feedstuffs

The results of the chemical analysis of feedstuff fed to experimental rabbits were shown in Table 1. The dry matter (DM) of the different green forages ranged from 92.71% to 94.68%. The crude protein of four forages were different from each other kangkong (T_2) with 22.93% have the highest crude protein (CP) content among the treatment which was different from the findings of Mhing (2003) as cited by Phimmasan and Preston (2004) that the CP content of water spinah can be as high as 32% CP in dry basis. Malunggay (T_3) with 22.84% CP was lower than the CP values of 29.25% and 27.51% reported by Booth and Wickens (1988) and Oduro *et al*., (2008) as cited by Nuhu (2010). Talinum (T_1) with 21.66% CP was higher than 22.1% revealed by Enete and Okon (2010). Galinsoga with 18.10%CP was different from 19.56% and 26.77% mentioned by Pil-o (2010) and Abad (2002) respectively.

The crude fiber of kangkong (T_2) with 15.71% was higher than Talinum with 15.61%. The previous study of Nguyen *et al*., (2006) states that kangkong has a higher CF with 17.67%. Talinum with 11.12% CF was mentioned by Enete and Okun (2010) these were smaller than the present study. Malunggay with 10.66%CF have the lowest crude fiber among the treatments. Among the treatments galinsoga with CP content of 18.76% was higher than 17.87% from the findings of Abad (2002) and smaller than 26.68% states by Pil-o (2010).

The ash content of Talinum with 29.50% was different from Enete and Okun (2010) that talinum contains 33.98% ash. Galinsoga with 18.76% was slightly similar with 18.34% ash mentioned by Pil-o (2010) and lower than 20.84% ash by Abad (2002).

Table 1. Nutrient content of feedstuffs

TREATMENT	FRESH %DM	%CF	%CP	%ASH	GE kcal/kg
Galinsoga	10.17	22.33	18.10	18.76	3669
Talinum	6.69	15.16	21.66	29.50	3337
Kangkong	11.18	15.71	22.93	14.96	3843
Malunggay	12.45	10.66	22.84	10.15	4249

Samples were analyzed at the Institute of Animal Science Nutrition Laboratory. UPLB College, Laguna

Gross energy (GE) was determined to be highest in malunggay with 4249kcal/kg.

The variations in the nutrients could be attributed to the age of cutting or harvesting, climatic conditions edaphic factors, agronomic practices as well as methods of processing and analysis (Fuglie 1999) cited by Neives and Teran (2004).

The experimental feedstuffs were those available in the locality during the test period. These local feeds included, waterleaf (*Talinum triangulare*), water spinach (*Ipomoea aquatica*), horse raddish (*Moriga Oleifera*) and potato vine weed (*Galinsoga oleifera*).All the feedstuffs consisted of the stalk or peduncle, the petiole and the leaves.

Palatability of Feedstuffs by Experimental Rabbits

Palatability of the different forages by rabbit is shown in Table 2. Kangkong or water spinach has the highest palatability of 97.59%. Samkol *et al*. (2006) reported that water spinach was high in palatability and digestibility. Galinsoga with 97.3513% was also similar with kangkong both these treatment were classified as high in palatability.

Talinum and malunggay with 56.206% and 52.9522% have a moderate palatability. Palatability index is classified as follows 70 to 100%= High 50 to 69% moderate and 0 to 49%= low in palatability. Iyeghe-Erakpotobor and Muhammad (2008). Palatability or high acceptance of a forage by an animal maybe affected by texture, aroma, succulence, hairness, leaf percentage, fertilization, sugar content. High palatability alone can be misleading indicator of forage quality (Nieves and Teran, 2004).

Malunggay leaves was found that to contain levels of anti-nutrients based from the Proximate Study, Mineral and Anti-nutrient Composition of *Moringa oleifera* Leaves from Lafia, Nasarawa State, Nigeria by Ogbe and Attiku (2011). Malunggay leaves contains tannins, saponins cyanide oxalates, and trypsin inhibitors but the levels of these anti-nutrients detected are low. Also, the Phytochemical Composition of *Talinum tringulare* (Water leaf) Leaves in Ebonyi State University, Nigeria by Aja *et al*., (2010) results of qualitative analysis that leaves from water leaf leaves in dry and wet sample showed the presence of alkaloids, saponins, flovonoids, tannins and absence of glycosides.

Talinum and malunggay contains both anti-nuritional factors which are chemical compounds in plants. These compounds may reduce palatability and digestibility in feed. In addition, this may decrease the nutritional value of plant food usually by making an essential nutrient unavailable or indigestible when consumed by human or animals. A

common strategy of plants is to produce foul-tasting compounds such as many bitter nitrogen containing alkaloids glucosinolates and cyanogenic glucorides.

Table 2. Palatability of the different forages

TREATMENT	MEAN
Galinsoga	97.3513[a]
Talinum	56.2062[b]
Kangkong	97.5925[a]
Malunggay	52.9522[b]

Means with the same superscript letter are not significantly different (P<0.05) by DMRT

Feed Intake of the Experimental Rabbits

Table 3 shows the amount of forage intake of the experimental rabbits. Kangkong with 11.735 kg total feed intake was higher compared to control (galinsoga) with 11.308kg this is because Kangkong was higher in palatability than the galinsoga. Another associated for the increased feed intake might be due to the crude fiber content of the diet. Feed intake was high with increasing level of crude fiber in the diets of rabbits Aduku *et al*., (1998) as cited by Nuhu (2010).

Talinum and malunggay have the lowest feed intake of 3.3162kg and 2.0148kg. The depressed feed intake of experimental rabbits in these two treatments was affected by the anti-nutrients content of the leaves. Reduction in feed intake has been ascribed to the bitter taste of saponins (Ogbe and Affiku 2011). High levels of saponins in feed affect feed intake and growth rate (Dei *et al*., 2007 as cited by Ogbe and Attiku 2011). Tannin also

depressed feed intake because of their-binding properties tannins are known to be strongly astringent. This astringency appears to be the major cause of reduce feed intake.

(Allduedge, 1994 as cited by Nuhu 2010). Furthermore, Forbes (1995) cited by Ogbe and Affiku (2011) found that low feed intake of rabbits maybe related to variation in the amino acid profiles of the feeds. If the amino acid content in the feed differed widely from the animal's requirement for amino acid, feed intake would be depressed.

Statistical analysis shows highly significant differences among treatment means. Further analysis with Duncans Multiple Range Test (DMRT) shows that galinsoga was significantly different to kangkong and talinum was significantly different malunggay.

Table 3 also, shows the dry matter intake of the experimental rabbits. Analysis of variance shows that highly significant difference exist between treatment means. Rabbits fed under malunggay with average dry matter (ADM) intake of 0.017% and rabbits fed under talinum with 0.06% DMI have the lowest DM intake compared to kangkong with 0.56% and 0.58% DM intake respectively. Analysis with Duncan's Multiple Range Test (DMRT) shows that galinsoga and kangkong not significantly differ from each but significantly differ talinum and malunggay..

Table 3. Feed intake of the experimental rabbits

TREATMENT	FEED INTAKE (kg) TOTAL	FEED INTAKE (kg) MEAN DAILY	DM INTAKE(kg) TOTAL	DM INTAKE(kg) MEAN DAILY
Galinsoga	11.7308[a]	0.8380[a]	8.25[a]	0.58[a]
Talinum	3.3162[b]	0.2370[b]	0.65[b]	0.06[b]
Kangkong	11.7355[a]	0.8385[a]	8.26[a]	0.56[a]
Malunggay	2.0148[c]	0.1438[c]	0.24[c]	0.017[c]

Means with the same superscript letter are not significantly different (P<0.05) by DMRT

Body Weight of the Experimental Rabbits

Table 4 shows the average initial weight of the rabbits in the different treatments during the start of the study. The average initial body weight of the experimental rabbits were not statistically shows no significant different among the treatments means. Galinsoga and kangkong was observed to have increase in weight from the initial weight while rabbits fed with talinum and malunggay decrease in mean weight. However, statistical analysis shows no significant differences among the treatment means. Experimental animals fed with with kangkong have the highest mean in weight and animal fed with galinsoga was quite similar to kangkong. Rabbits under these two treatments increase in weight because of high palatability and feed intake. Experimental animals fed with talinum and kangkong were continue in decreasing in weight every week. This was due to the fact that palatability and feed intake of rabbits were very low. Statistically, significant differences among the treatments were then revealed during the second (final) week of the experiment.

Table 4. Body weight of the experimental rabbits

TREATMENT	INITIAL WEIGHT (kg)	WEEK 1 (kg)	WEEK 2 (kg)
Galinsoga	1.8000[a]	1.8250[a]	1.9000[a]
Talinum	1.8000[a]	1.7050[a]	1.6100[ab]
Kangkong	1.7917[a]	1.8750[a]	1.9667[a]
Malunggay	1.8000[a]	1.6417[a]	1.6000[a]

Means with the same superscript letter are not significantly different (P<0.05) by DMRT

Gain in Weight of the Experimental Rabbits

The average gain in weight of experimental rabbits is shown in Table 5. Rabbits fed with kangkong (T_2) have the average daily gain of 12.5g/day. The present study was lower with the study of Phimmasan and Preston (2004) rabbit fed only on water spinach gained 18.1g/day or 0.0181kg/day. The study of Samkol *et al*. (2006) states that water spinach as source of feed for growing rabbits appears to support acceptable growth rates of close to 20g/day or 0.021kg.day.

Galinsoga with ADG of 7.14g/day was second highest to kangkong. High weight gain of animals normally results for increased feed intake and palatability of feedstuffs. This situation was observed in the present experiment. Rabbits fed with talinum and malunggay have a negative average daily gain in weight of -13.57/day and 14.28g/day. The poorer average daily gain of the animals under these two treatments talinum and malunggay could be explained by the fact that the rabbits did not consumed a lot of the forage to ensure higher growth. Probably, because diet may be poor in quality and found that these forage contains anti-nutrients. It might be also be possible that subclinical infections may have adversely affected their growth rate.

Another possible reason may be linked to poor genetic constitution of the rabbits used (Nuhu 2010). A highly significant difference among the treatment means. DMRT shows that Galinsoga and kangkong were not significantly different likewise talinum and malunggay.

Table 5. Gain in weight of the experimental rabbits

TREATMENT	TOTAL GAIN (kg)	AVERAGE DAILY GAIN (g)
Galinsoga	0.09167[a]	7.14[a]
Talinum	-0.1900[b]	-13.57[b]
Kangkong	0.1750[a]	12.50[a]
Malunggay	-0.2000[b]	-14.28[b]

Means with the same superscript letter are not significantly different (P<0.05) by DMRT

SUMMARY, CONCLUSIONS AND RECOMMENDATION

Summary

The study on palatability and voluntary intake of local feedstuffs by rabbits was conducted at the Animal Genetic Resources (TANGERE) Project at Bektey, Puguis, La Trinidad, Benguet on November to December 2011. This aimed to determine the nutrient content of the four feedstuffs; determine the preference of rabbit based on palatability andrate and the gain in weight of rabbits. Twenty four New Zealand White and Chinchilla rabbits were used in the experiment. The experimental period lasted for two weeks.

There were four treatments and six replications laid-out following the Completely Randomized Design as follows: T_0-Galinsoga, T_1- Talinum, T_2-Kangkong, T_4-Malunggay.

The experiment lasted for two weeks. Forage leftovers were collected daily during the experimental period. Forage samples were analyzed for dry matter, crude protein, crude fiber, ash, and gross energy. Results showed that malunggay has the highest in dry matter with 12.45% and gross energy with 4249 kcal/kg. . Kangkong has the highest in crude protein with 29.93%. Talinum has the highest ash content with 29.50% . Galinsoga was determined to be the highest in crude fiber with 22.93%.

Palatability of the different forages showed highly significant differences among the four forages. Kangkong and Galinsoga were the most consumed by the rabbits. Body weight of experimental rabbits showed highly significant difference at the final week of the experiment. Gain in weight of rabbits were highest in Kangkong and Galinsoga compared to talinum and malunggay.

Conclusion

Kangkong (*Ipomoea aquatica*) and galinsoga (*Galinsoga parviflora*) appears to have the highest palatability while Talinum and malunggay have a moderate palatability to rabbits. Similarly, Kangkong and galinsoga resulted in high feed intake and gain in weight. Both of these two treatments have high nutritive value as forage.

Recommendation

Kangkong and galinsoga are recommended as main forage for rabbits because of their high palatability.

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