Egg Production of Ducks Raised with Feed Formulantion Models Based on Ikan Sapu-Sapu (*Hypostomus Luteus*)

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ABSTRACT

Feeding 'ikan sapu-sapu, 'ISS' (*Hypostomus luteus*) to egg producing ducks is a common practice among duck farmers in Mataram. However their diet formulation model varied. The objectives of the study was to evaluate the effect of models of feed formulation based on ISS on egg production in semi intensive ducks farming in Mataram. Fourteen farmers raising 40 – 50 ducks based on feeding ISS in a semi intensive 4 X 5 m^2house were surveyed. Types and amount of feed ingredient given to the ducks and their corresponding egg production were noted for 3 months. Most farmers (78.6%) gave only 186,8 g ISS and 201 g rice bran per day (model 3); 7.1% of them gave 154.5, 122.4, 3.8, and 38,5 g ISS, rice bran, concentrate, and dried rice respectively (model 2); and 14.3% fed 155.1, 158.6, and 3.9 g ISS, rice bran and concentrate respectively (model 1). Protein (%) and energy (kkal/g) content of the diets for model 1, 2, and 3 were 17.76 and 1576.9; 18.24 and 1326.9, and 18.27 and 1301.6 respectively. Egg production of ducks raised with model 2 diet produced up to 81%, but only 61.56% for model 3 and 70.44% for model 1. This indicate that model 2 diet provide sufficient nutrients for egg production.

Key Words: *Hypostomus luteus,* Ducks, Egg Production

INTRODUCTION

The productivity of egg producing local duckin Indonesia under traditional farming system is low. Setioko(1990) reported that the productivity oflaying ducks about 26.9 to 41.3% for ducks raised in traditional sistem while the rate of egg production of caged ducks can reach 55.6% and even Ketaren and Prasad(2000) reported that the duck egg production during the year was as much as 69.4%. The low egg production is usually as sociated with insufficient feed consumption especially for source of protein. Various efforts and innovations have been made to obtain alternative sources of dietary protein in order to increase production and quality of duck eggs. Indarsih and Tamsil et al. (2012) stated that feeding duck weed did not increase egg production but improved the color of egg yolk. Asnawi (2010) reported that duck farmers in Mataram fed 'ikan sapu sapu' (*Hypostomus luteus*) collected in rivers and water canal around Mataram as source of dietary protein in combination with rice bran, dry rice and concentrates. The proportion of each feed material in duck diet varied greatly among farmers resulted in variation on egg production. The aim of this study was to identify appropriate diet formulation models applied by farmers and its effect on egg production, which can be applied laying ducks.

MATERIALS AND METHODS

The study was conducted in a group of duck farmers in Mataram. The group has 14 members raising 40 – 50 ducks each. The ducks were about 12 – 15 month old kept in a semi intensive 4 X 5 m^2 house equipped with buckets for feed and drinking water. A small pond near the cage was built to keep the ISS stock.Types and daily amount of feed ingredient given to the ducks and their corresponding egg production were notedfor 3 months. The data obtained were tabulated and analyzed descriptively.

RESULTS AND DISCUSSION

All members of the group fed ISS as the main source of protein. A live ISS was taken from a small pond located in front side of the cages,choppedusingchoopermachine, collected in abucketand then weighed. Allfarmers fed their ducks twice a day; in the morningand afternoon. ISS is feed sources that do not compete with humans contain33.32-41.75% crude protein; 29.58-38.81% ash; 13:29-22.97% crude fat; and 0.80-3:39% crude fiber on dry matter basis, and gross energy5290.40-5881.68Kcal/kg (Purnamasari, et al., 2011).

Table 1. Dietary ingredients, nutrient intake and egg production for three formulation models

Variable	Dietary Formulation Model		
	1	2	3
Dietary ingredient (g/head/d)			
1. ISS	155.1	154.5	186.8
2. Rice bran	158.6	122.4	200.9
3. Concentrate	3.9	3.8	-
4. Dry rice	-	38.5	-
Total consumption(g/head/d)	317.6	319.2	387.8
Nutrient intake			
1. DM(g/head/d)	83,29	82,74	83,40
2. Ash (g/head/d)	24,97	24,96	24,61
3. Fat (g/head/d)	8,14	8,32	8,09
4. Crude Fiber (g/head/d)	2,20	2,21	2,22
5. Crude Protein (g/head/d)	18,27	18,24	17,76
6. GE(Kcal)	1301.64	1326.93	1576.89
Egg production (%)	70.44±3.41	81.35±2.10	61.56±2.68

There were 3 diet formulation models based on types of feed ingredient fed to ducks. Model 1 for whose diet consisted of ISS+ ricebran+concentrate; Model 2 with ISS + rice bran+concentrate+ dry rice, andModel 3 with ISS + rice bran. The percentage of farmers using model 1 =14.29% or200ducks, model 2 =7.14% or 100ducksand model3=78.57% or550ducks. The number of farmers applying model 3 much higher than model 1and 2. Farmers said that the model was easy to do and because the cost of concentrate was expensive. The dry rice (dried left over rice which does not consumed by the family, known as 'nasi aking'), was a cheap feed, but not always available.

The amount of feed ingredients for three models and nutrients intake and egg production is shownin Table1. The average amount of feed given to ducks for all models was 317.6 – 387.8g/head/d was much higher than the standard requirement (IPPTP, 2000) which is only 150 g/.head/d. This practices was not economically beneficial and may turned the ducks to become too fatty leading to reduced egg production. Egg production for those applying model 2 was 81.35%, much better than model 1 and model 3. This might be due to using more variable feed ingredients. Based on the ingredient usually used by farmers to formulate diet we recommend the following formula (Table 2).

Table 2. Recommended diet formulation

Ingredient	Level (%)	DM (%)	Ash (%)	Fat (%)	CF (%)	CP (%)	GE (Kkal/gr)
ISS	28	20,60	8,78	4,00	0,44	9,33	764.12
Dried rice	15	14,13	6,12	0,42	0,36	4,67	498.05
Corn	25	21,90	0,53	1,16	0,76	1,99	598.00
Rice bran	30	27,76	5,89	1,05	0,81	1,88	995.10
Algae	1	-	-	-	-	-	-
Mineral	1	-	-	-	-	-	-
Total	100	84,39	21,31	6,64	2,37	17,86	2852,17

IMPLICATION

Most farmers feed higher amount than the recommended requirement composed only with ISS and rice bran resulted in less egg production. The amount of feed allowance may be reduced but should use more variable ingredients.

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