EFFICIENCY OF USE OF ALTERNATIVE FOODS TO INDUCING MOLT

Sara Lorandi[1]; Juliana Cardoso Girardon[2]; João Carlos Maier[3]; Valdir Silveira Ávila[4]

[1] Graduanda em Medicina Veterinária - UFPel/Pelotas. Brasil.
[2] Engenheira Agrônoma. Mestre em Zootecnia – Pelotas. Brasil.
[3] D.Sc. Prof. Adjunto, Departamento de Zootecnia – UFPel/Pelotas. Brasil.
[4] Pesquisador Embrapa Suínos e Aves. Concórdia. Brasil.

ABSTRACT

The molting is a process that ocorruing naturally in the feathers of birds, but for a long time. Economically the extension of this stage is poor, so that other methods are used to make the process more efficient. As objective we sought to evaluate the performance and viability of the animals subjected to alternative food diets induce changes. The hens were subjected to four methods of forced molting for 28 days. Proposed treatments were designated as T1 (control, with food restricted to 10 days, followed by eight days of ground corn and 10 days of pre-laying diet), T2 (14 days of soybean hulls and vitamin premix, followed by four day of ground corn and 10 days of feed pre-posture), T3 (14 days of wheat bran and vitamin premix, followed by four days of ground corn and 10 days of feed pre-posture) and T4 (14 days sorghum high tannin and vitamin premix, followed by four days of ground corn and 10 days of feed pre-posture). The hens weight and weight loss were evaluated every five days. Since feed intake, egg production and mortality were recorded daily. Birds belonging to treatment showed a greater weight loss (526.87 g), and poor viability (88.39%). Results obtained allow us to infer that the application of fasting as a way to make the changes forced on the parameters results in worsening productive, but in contrast, the use of alternative methods provide improved comfort and well-being for the birds demonstrated the best performance and viability.

KEY WORDS: hens, sorghum, soybean hulls, wheat bran.

INTRODUCTION

During his life, the birds go through a process called change of feathers. In wild birds occurs about once a year and has a great relationship with their reproductive cycle. But this process is not just a simple exchange of penalties, but also has consequences ranging from loss of fat, osteoporosis, even the suppression of the immune system. (Araujo *et. al.,* 2007).

According to Garcia (2004), this process changes takes approximately four months, and can be accelerated using forced induction, lasting about 6-8 weeks (from the beginning of change until the return of egg production).

The molt has proven focus of research currently under justification is that it provides an improvement in the commercial production of eggs. This process in birds, leads to improvement in performance, extending around 25-30 weeks the productive life of the animals, as well as improving egg quality, compared with the quality given in the first end of the production cycle. (Franzo *et. al.,* 2006).

According Giampauli *et.al.,* (2005), with advancing age of the hens, they produce eggs that have higher weight, but the shell thickness and hence its resistance decay. The main objective of the implementation of changes is forced to resume the quality of the shell, making the eggs again resistant and extending the life of the hen.

The methodology generally used dietary restriction, which makes use of the fast. This method is also known as a method for California molt induction.

Use of this method is very disputed not only by organizations that advocate animal welfare, but also for consumers who demand a creation that somehow propricie greater welfare of animals. (MOLINO, 2010).

Based on this problem, the aim of this work was to evaluate the effects of different foods in the process of molting in laying hens on the performance and viability of poultry.

MATERIAL AND METHODS

The experiment was conducted at the Poultry special unit belonging to the Southern Rio Grande Federal Institute (IF-SUL), during the month of August 2009, totaling 28 experimental days, that period being equivalent to the change of feathers. A total of 448 hens strain Hisex Brow, with 100 weeks of age, were housed in a dark shed-type house and distributed in 64 cages containing seven birds / cage, which represented the experimental unit. The design was a randomized complete block by initial body weight of laying hens, with 16 replicates / treatment.

The treatments consisted of four alternative protocols induced changes, with and without food restriction and water ad libitum throughout the experimental period, and are thus identified: T1 (control with feed restriction of 10 days, followed by eight days of ground corn and 10 days of feed pre-posture), T2 (14 days ration with 97% soybean hulls and vitamin premix, followed by four days of ground corn and 10 days of feed pre-posture), T3 (14 days ration with 85% wheat bran, vitamin premix, followed by four days of ground corn and 10 days pre-feed position) and T4 (14 days of diet with 85% sorghum tannin vitamin premix, followed by four days of maize ground and 10 days of feed pre-posture).

The variables analyzed to verify the effectiveness of alternative methods during the changes were: initial weight (g), weight loss (g), feed intake (g), egg production (%) and viability of the lot (% .) The weight of the birds was monitored, and evaluated every five days and the other variables were measured daily. For the changes were considered effective was adopted as the maximum 15% of egg production at the end of the period.

The results were subjected to analysis of variance (ANOVA) and Tukey test for comparison of means, with 5% significance level, using the GLM procedure of SAS statistical software.

RESULTS AND DISCUSSION

Table 1 presents the results of the different foods used as alternative methods of forced molting on the performance and viability.

Table 1 Effects of methods of inducing changes on the performance of laying hens.

Treatments	*Psv(g)*	*PPs(g)*	*Cr(g)*	*Pdov(%)*	*Viabl(%)*
T1	1854[a]	526,87[a]	4187,56[c]	4,31[c]	88,39[c]
T2	1847[a]	399,37[b]	8432,81[b]	4,68[c]	91,96[b]
T3	1851[a]	140,13[c]	11678,62[a]	12,00[b]	94,64[b]
T4	1861[a]	123,37[c]	11317,50[a]	19,38[a]	98,21[a]
P =	0,9961	<0,0001	<0,0001	<0,0001	<0,0001
CV,% =	9,04	-25,98	52,53	9,64	11,15
Standard error =	167,53	19,32	5,29	241,78	2,60

Psv = weight; PPs = weight loss; Cr = feed intake, egg production Pdov =, = Viabl viability.

When the birds were subjected to the control treatment, ie with the use of fasting, one can see that lower intake, greater weight loss, reflecting a result of the very low value for viability (88.39%). This result is in agreement with Koelkebeck and

Anderson (2007) who demonstrated that during fasting, birds deflect body nutrients to maintain the organism and not for the production of eggs, which is left in the background.

Stands out as the main goal of inducing changes, quick stop in egg production and also recovery of the female reproductive tract. To fulfill this goal, it was observed that a treatment (fasting) and two (soybean hulls) were more effective. This fact is based on the abrupt stop of energy consumption, as when fasting, the birds do not get power to consume and when it comes to soybean hulls, the difficulty that exists in your digestion, as food is extremely fibrous, also drastically reduces the energy level available to the animal.

Also with respect to the use of soybean hulls, this treatment showed greater viability for lot compared to the use of fasting. Garcia *et al.,* (1994) showed similar results when used diets with low energy levels and maintained high levels of viability of the lot.

The three treatments (wheat bran) and 4 (high tannin sorghum), showed similar results. The use of high tannin sorghum showed better egg production in the period and higher rates for use in birds.

CONCLUSION

Soybean hulls showed higher efficiency in reducing egg production during the molting feathers. The use of alternative food sources are shown as a viable replacement for conventional switches using the fast, enabling the batch.

REFERENCES

ARAÚJO, C. S. S.; ARTONI, S. M. B.; ARAÚJO, L. F.; JUNQUEIRA O. M.; BARBOSA, L. C. G. S.; LIMA, C. G. **Morfometria do oviduto de poedeiras comerciais semipesadas submetidas a diferentes métodos de muda forçada.** Ciência Rural, v.37, n.1, p.241-246, jan./fev., 2007.

FRANZO, V. S.; ARTONI, S. M. B.; STEFANINI, M.; VULCANI, V. A. S.; AMOROSO, L.; ARAUJO, C. S.; OLIVEIRA, D. **Peso das porções intestinais de galinhas poedeiras submetidas a diferentes métodos de muda forçada.** Revista de Ciências Veterinárias, v.4, n.4, p.37-42, 2006.

GARCIA, E.A. **Avaliação dos parâmetros físicos e produtivos de poedeiras semi-pesadas submetidas a muda forçada e alimentadas com ração de baixa densidade por diferentes períodos.** 1994. 59f. Tese (Doutorado em Zootecnia) - Faculdade de Medicina Veterinária e Zootecnia da Universidade Estadual Paulista, 1994

GARCIA, E. A. **Muda forçada para poedeiras comerciais e codornas.** In: CONFERÊNCIA APINCO DE CIÊNCIA E TECNOLOGIA AVÍCOLAS, 22., 2004, Santos, SP, Brasil. **Anais...** FACTA, 2004, p. 45-62.

GIAMPAULI, J.; PEDROSO, A. A.; MORAES, V. M. B. **Desempenho e qualidade de ovos de poedeiras após a muda forçada suplementadas com probiótico em diferentes fases de criação**. Ciência Animal Brasileira v. 6, n. 3, p. 179-186, jul./set. 2005.

KOELKEBECK, K.W.; ANDERSON, K.E. Molting Layers - Alternative Methods and Their Effectiveness. **Poultry Scienci**, v. 86, p.1260-1264, 2007.

MOLINO, A. B. **Restrição alimentar e utilização de calcário de granulometria grosseira como métodos alternativos de muda forçada.** Dissertação (Mestrado em Zootecnia) - Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista, Botucatu, SP, 2010.