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SURAT KETERANGAN

Nomor : 1883/UN3.1.6/KP/2023

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Telah melaksanakan penelitian dengan judul sebagai berikut :

No	Judul Karya Ilmiah	Tahun Pelaksanaan Penelitian
1	Immunomodulatory Activity of Black Jinten Oil (Nigella sativa) as Macrophage Activator for Salmonella typimurium Infected Rat	2020
2	Screening the Reproductive Tract of Dairy Cattle for Pathogenic Micros	2019
3	Human Chorionic Gonadotropin (hCG) from Urine of Pregnant Women to Manipulate in vivo Ovulation and Pregnancy of Madura Cows	2019
4	Anti Early Embryonic Protein (EEP) for Pregnancy Test by Microtiter Strip in Dairy Cows	2019
5	The Effect of Feeding High Level of Protein on Reproductive Performance of Bali Starling.	2019
6	Antisperm Antibody in Repeat Breeder Friesian Holstein Cows at KPSP Setia Kawan Nongkojajar, Tutur District, Pasuruan, Indonesia.	2019
7	Diagnosis of Single and Twin Pregnancy, and Early Embryo Mortality Through Progesterone Level Test on Local Does.	2019
8	Improvement of Pregnancy Rate in Bali Cows with the Combination of Equine Chorionic Gonadotropine (eCG) from Local Pregnant Mare with PGF2α.	2019
9	Progesterone Profile of Dairy Cows which Experienced the Failure of Pregnancy to Artifical Insemination (AI).	2019
10	Effect of Heat Shock Protein (HSP) in Post Thaw Baluran Bull Semen	2018
11	Potency of Mycotoxin Binders on MDA Level, Expressions of Caspase 9 and Caspase 3 in The Uterus of Mice Exposed to Zearalenone	2017

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12	Polymorphism of Growth Hormone Gene in The Artificial Insemination Result of Madura Cattle with Limousin Semen as a Reference for Genetic Selection	2018
13	Implementation of fotogrametry techniques as body mass estimation of indo-pacific bottle nose dolphin (Tursiops aduncus) in bali dolphin lodge	2020
14	Uji Sensitivitas Kebuntingan Sapi Perah Menggunakan Pregnancy Specific Protein B (PSPB) Microtiter Strip dan Progesteron sebagai Gold Standard	2007
15	Estimation of Equine Chorionic Gonadotropin (eCG) concentrate in the Blood Sera of Pregnant Mare	2014
16	Efek Pemberian L-Arginin Terhadap Gambaran Histologi Jumlah Spermatosit Primer pada Mencit (Mus musculus) Setelah Terpapar Suhu Panas	2019
17	Anti Prolactine Overcomes Heat Stress on Laying Hen.	2008
18	Unnatural Forced Moulting in The Laying Hen as Cause of Zoonosis from Salmonella Enteritidis	2009
19	Case Study: Dystocia on Beef Cattle in Kunir Regency of Lumajang District, East Java, Indonesia in 2015 and 2016	2017
20	Teratogenic Effect of Congenital Toxoplasmosis in Chicken Embryo	2017

Adapun penelitian tersebut layak dilakukan, meskipun belum ada ***Ethical Clearence*** karena menggunakan hewan coba yang minimal dan menghasilkan output yang sangat baik.

Demikian surat keterangan ini kami buat untuk dapat dipergunakan sebagai persyaratan pengususlan Jabatan Fungsional **Guru Besar**

Surabaya, 3 April 2023
Wakil Dekan III,

Prof. Dr. Mustofa Helmi Effendi, drh., DTAPH
NIP 196201151988031002

E 12

Collaboration between
FACULTY OF VETERINARY MEDICINE AIRLANGGA UNIVERSITY
AND
FACULTY OF VETERINARY MEDICINE UNIVERSITI PUTRA MALAYSIA

CERTIFICATE

this is to certify that

Erma Safitri, M.Si., Drh.

has participated in

International Seminar
Management Strategies on Animal Health
and Production Control
in The Anticipation of Global Warming
for The Achievement of Millennium Development Goals

As

speaker

3th – 4th June, 2008, Surabaya - Indonesia

Prof. Hj. Romziah Sidik, drh., Ph.D.
Dean of Faculty Veterinary Medicine
Airlangga University

Prof. Dr. Bashir Ahmad Fateh Mohamed
Dean of Faculty Veterinary Medicine
Universiti Putra Malaysia

ISBN 978-979-17677-1-2

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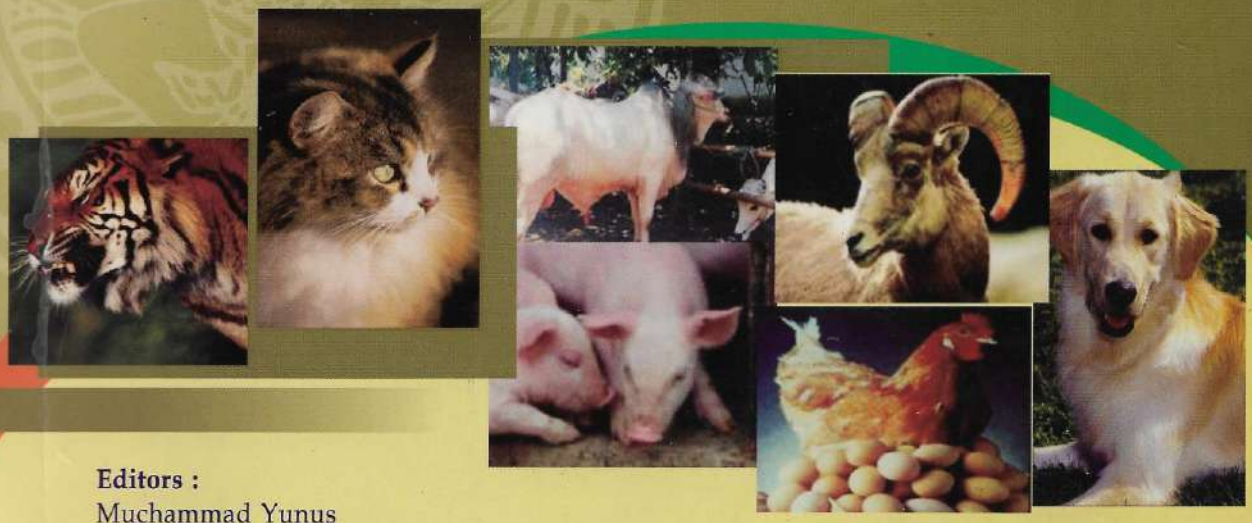

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Faculty of Veterinary Medicine
Airlangga University
and
Faculty of Veterinary Medicine
Universiti Putra Malaysia
2008

PENERBIT DANI ABADI
Surabaya

Cetakan pertama 2008

REPORT OF ORGANIZING COMMITTEE

Global warming is creating a threat of disaster in animal husbandry sector in the form of decreasing livestock productivity. From the aspect of animal health global warming has the opportunity to change the character of the existing diseases agent. It is possible that a mutation occurs and causes microorganisms those are normally non-infectious becomes infectious. On the other hand global warming has indirect impact on livestock feed industry. Further impact of global warming causes the availability of animal derived food products decrease and eventually affect human life due to the lack of animal derived food material supply qualitatively and quantitatively. One of the efforts solves the problem is with the performed International Seminar entitled "The Management Strategies of Animal Health and Production Control in the Anticipation of Global Warming for the Achievement of Millennium Development Goals" at 3-4 June 2008 in ELMI Hotel Surabaya. Ideas on the process and steps need to be taken to overcome the impact and to anticipate global warming presented in the International Seminar were compiled into this proceeding. It is expected that this proceeding could help in solving and anticipating global warming to achieve millennium development goals. Thank you is directed to all who participated in the International Seminar, especially the oral as well as the poster presenters.

Surabaya, 20 June 2008

Chairman of the committee
Dr. Koesnoto Supranianondo MS., Drh.

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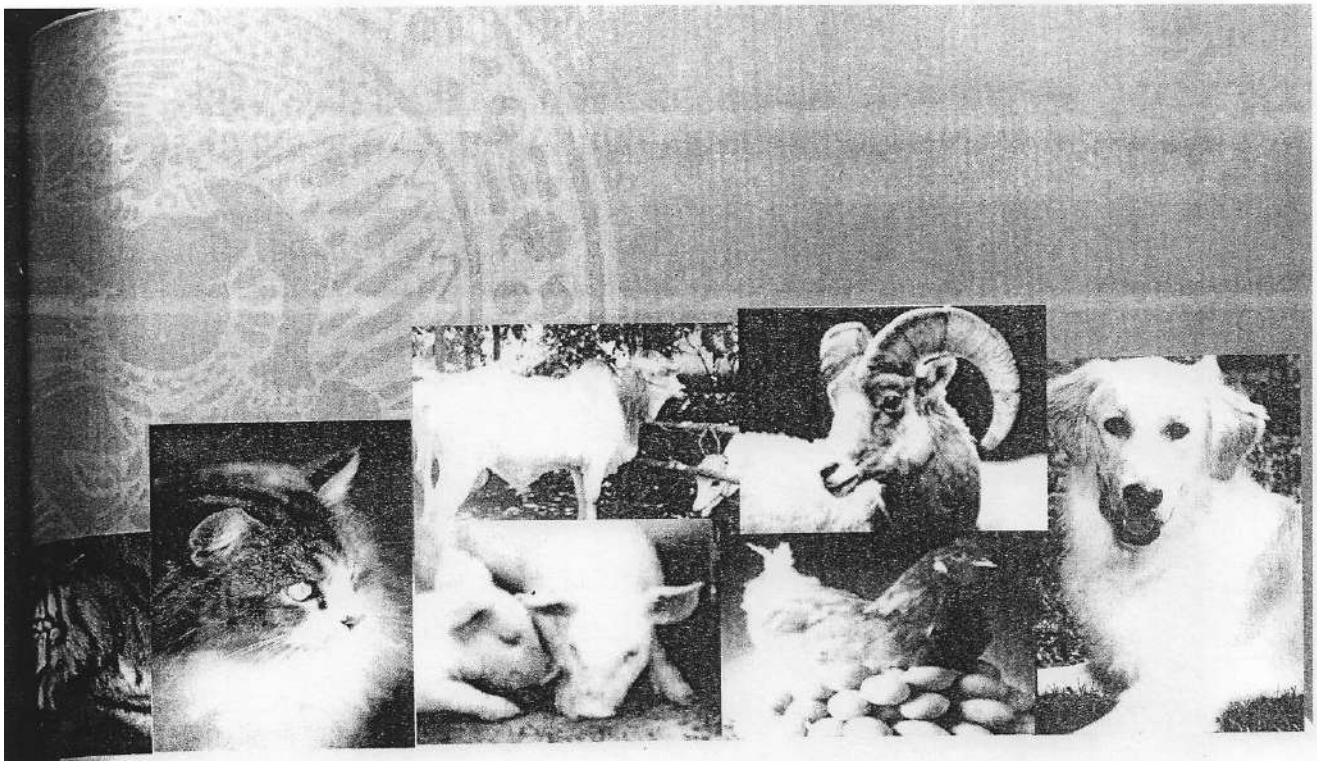
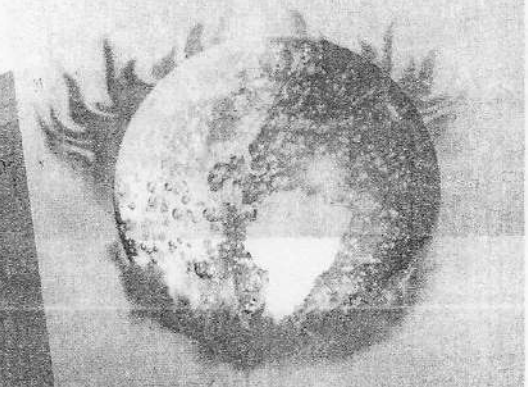


ANIMAL AND ENVIRONMENT



ANTI PROLACTINE OVERCOMES HEAT STRESS ON LAYING HEN

Erma Safitri[1], dan Wiwik Misaco[2]

1. Department Reproduction, Faculty of Veterinary Medicine, Airlangga University
2. Department of Veterinary Clinic, Faculty of Veterinary Medicine, Airlangga University

ABSTRACT

Decreased of egg production on laying hens can provoked by environment heat stres. It caused by increased of blood prolactine concentration. The aim of this research was to study the effect of anti prolactine to avoid negative effect of heat stress on laying hen. Anti prolactine as exsternal antibody will be bound by prolactine as antigen like substance in the body. Neutralization of prolactine was achieved by the formation of anti prolactine – prolactine complex. The collected data were based on egg production using factorial design (6 x 4). Firstly, the observation time (1, 2, 3, 4, 5 and six weeks) done after treatment. Secondly, the dose of anti prolactine (0, 50, 100 and 200 µg) give intra muscular. The result showed that the utilisation of anti prolactine 100 – 200 μg increased egg production significantly ($P < 0.05$) since first week. There is an interaction between time and dose anti prolactine that influence the egg production ($P < 0.05$).

Keywords: Anti prolactine, heat stress, laying hen

INTRODUCTION

Decreasing of egg production on laying hen when top production time and several times before or after top production time caused economically problem. Additionally, if egg production can't be reach according to standard egg production. The fact, if egg production decrease the hen must be suppressed faster before the of production time (Trobos, 2006).

Decreasing egg production not only caused by infection agent. One of the causes of non infection agent is heat stress. In additional to decrease egg production heat stress increasing FCR, and degradation consume of the food, degradation of size measure and quality of egg shell, and also degradation of body weight and endurance of hen's body.

Heat stress at hen laying is often became by ranch in tropic area, otherwise is immediately handled by the stress will degrade the appearance produce from hen direct interconnected production. Appearance degradation with the behavior change (behavior), fisiology and biochemistry in hen's body. The change needs the energy which by dozens, so that in the end can degrade the performance reproduce from hen.

Some effort done during the time by breeder of laying hen so that optimal productivity goals can be reached by doing repair of management of conservancy management followed by the gift antibiotic and also vitamin with an eye to increase of stamina and body endurance. But the use of antibiotic is usually done by regardless of what in fact becoming the root cause the egg productivity degradation so that as a result just have the character of without effect. Additionally, the side effects which can be generated by synthetic chemical compound are drug residue. Using Antibiotic which less precisely in the end can cause the happening resistant, and surely when used antibiotic from same faction continually. Others the lack of breeder knowledge about way of use antibiotic real correctly and precisely, making breeder tend to use the antibiotic with the different trademark but obstetrically is same drug.

Today still be done by development of alternative method to overcome the direct egg productivity degradation its organ goals without effect and also do not generate the side effects and do not cause the resistant, relative quickly in productivity cure lay eggs, accurate, cheaper and easy to done in the field.

Development of therapy Method at hens laying with degradation produce the effect of hot stress can be done with the cordage of protein prolactine where the protein physiologically will mount when hen experience of the stress (Turner and Bagnara, 1989 and Hafez, 2000). Require to be strived by the alternative way that is by doing gift therapy of anti prolactine, the mechanism is the happening of trying among antigen (protein prolactine) high in hen blood when experiencing of stress with the antibody (Anti Prolactine) when inseminated. This are development therapy for imunologis.

MATERIALS AND METHODS

Substance and Research Appliance.

Research sample are 40 layer hens 19 month old with decreasing egg production because hot stress in cage (cage temperature between 24-35° C). Needed equipments: made battery cage from bamboo matting, spuite tuberculin. Substance used for the therapy is anti prolactine with the doses 50μg / ml, 100μg / ml, 200μg / ml, PBS 0.5ml (as control), cotton, alcohol. Forty laying hen in group and placed in battery cage at random become 4 treatments, with each treatment get 10 the following restating. P0 (Control): 10 laying hens with heat stress and without inoculation of anti prolactine, changed by PBS as much 0.5 ml. P1 : 10 laying hens with heat stress and inoculation of anti prolactine as much 50μg / ml. P2 : 10 laying hens with heat stress and inoculation of anti prolactine as much 100μg / ml. P3 :10 laying hens with heat stress and inoculation of anti prolactine asmuch 200μg / ml.

Evaluation of egg productivity after treatment was done every day, starting by the injection of anti prolactine until return normal productive. Comparison can be done between control and treatment. Attempt device used at this research is Complete Random Design (RAL). Then data was analyzed with ANOVA, further more if any differences was analyzed by Different test of Downright Reality (Beda Nyata Jujur/BNJ) 5% (Kusriningrum, 1989).

RESULTS AND DISCUSSION

Anti Prolactine Bring Back the Productivity laying hen to Egg normally. Observation the egg production done every day after the laying hens was inoculated by anti prolactine through intra muscular in the chest area that is at the time of chicken to experience of the degradation produce the egg show the existence of product increase of egg till return normally. Mean of egg each week produce at table 1.

Table 1. Mean produce the Egg (each week) Starting Counted From Degradation Produce the Egg of week until 6 week

Week	Σ Laying hens	Treatments			
		Control	P1 (50μg) Anti Prolactine	P2 (100μg) Anti Prolactine	P3 (200μg) Anti Prolactine
0	10	1.4 items	1.4 items	1.4 items	1.4 items
1	10	1.4 items	2.1 items	3.4 items	5.1 items
2	10	1.6 items	2.1 items	3.7 items	5.5 items
3	10	1.7 items	1.7 items	3.7 items	5.6 items
4	10	1.6 items	1.8 items	3.5 items	5.5 items
5	10	1.7 items	1.9 items	3.5 items	5.4 items
6	10	1.8 items	1.6 items	3.7 items	5.6 items
Span		1.4-1.8 items	1.4-2.1 items	1.4-3.7 items	1.4-5.6 items
Total		11.2 items	12.6 items	22.9 items	34.1 items
Mean		1.867±0.152753	2.1±0.258199	3.81±0.843409	5.683±1.540254

Then the data was analyzed by ANOVA (Analysis of Variant) Factorial Device Pattern. The result show there are difference and having a meaning of ($p<0.01$) among group control and all group of treatment of variation doses and time depth after gift (week), and also there are have interaction among treatment group having a meaning of ($p<0.01$). Thereby hormone inoculation of anti prolactine with the doses 50μg, 100μg and 200μg to treatment can influence to increase of egg productivity of laying hens after experiencing of hot stress.

Furthermore if any differences was analyzed by Different test of Downright Reality (BNJ) 5%. Pursuant to (BNJ) 5% obtained by result that most having an effect on dose to product increase of egg from chicken is third treatment group with the dose inoculation 200μg, followed by the second treatment with the dose 100μg, while treatment group with the dose inoculation 50μg is equal to group control, not show of increase egg production. Analysis pursuant to (BNJ) 5% test at table 2. The kind of different dose of anti prolactine was seen at figure 1.

Pursuant to (BNJ) 5% test obtained data that first week after treatment show the existence of product increase of egg followed at week hereinafter, that is second week until sixth week which produce its egg have returned normal according to number produce the hens laying. Analysis summary the (BNJ) 5% test at table 3 and graph of bar of product increase of egg at week after treatment by using anti prolactine 200μg/ml at Figure 2

Table 2. Mean And Standard Deviation of egg Production which Have Been injected by Anti prolactine with the Different Dose

Treatment (Dose)	N	Mean ± Standard Deviation
Control	70	$1.60^{a} \pm 4.351$
50μg (P1)	70	$1.80^{a} \pm 2.881$
100μg (P2)	70	$3.27^{b} \pm 3.548$
200μg (P3)	70	$4.87^{c} \pm 4.035$

Pursuant the BNJ test 5% showed that existence of interaction between treatment (week) with the other treatment (obtainable dose) result of that [at] week to 1 with the dose 100μg Anti Prolactine has earned to show the existence of product increase of chicken's egg equal to 50-70%, while dose 200μg at first week, chicken have regained productive of egg normally equal to 70-85%. Summary of treatment interaction (time and dose) by Different test of Downright Reality (BNJ) 5% was shown at table 4. Production increase Graph egg as a whole at figure 3.

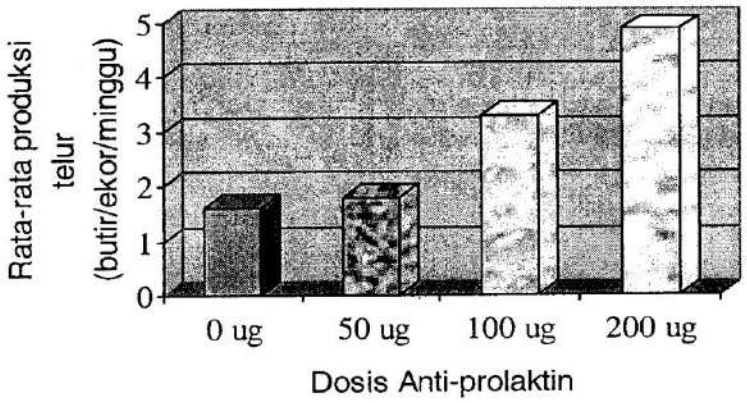


Figure 1: The egg production after inoculation by anti prolactine with the different dose at first week until sixth week.

Table 3. Mean And Standard Deviation Produce the Egg / week of During fourth week After Gift Anti Prolactine.

Treatment (minggu ke-n)	N	Mean ± Standard Deviation
Week 0 (Control)	40	$1.40^{a} \pm 0.496$
week I	40	$3.00^{b} \pm 1.519$
week II	40	$3.23^{b} \pm 1.625$
week III	40	$3.18^{b} \pm 1.378$
week IV	40	$3.10^{b} \pm 1.661$
week V	40	$3.13^{b} \pm 1.588$
Week VI	40	$3.18^{b} \pm 1.378$

Table 4. Mean and Standard Deviation of the Egg production with the Interaction of between different dose and time.

Treatment Combination	N	Mean ± Standard Deviation
Week 0-Control	10	$1.40^{a} \pm 0.516$
Week 0-50μg	10	$1.40^{a} \pm 0,516$
Week 0-100μg	10	$1.40^{a} \pm 0,516$
Week 0-200μg	10	$1.40^{a} \pm 0.516$
Week I-Control	10	$1.40^{a} \pm 0.516$
Week I-50μg	10	$2.10^{a} \pm 0.316$
Week I-100μg	10	$3.40^{b} \pm 0.516$
Week I-200μg	10	$5.10^{c} \pm 0.738$
Week II-Control	10	$1.60^{a} \pm 0.516$
Week II-50μg	10	$2.10^{a} \pm 0.316$
Week II-100μg	10	$3.70^{b} \pm 0.483$
Week II-200μg	10	$5.50^{c} \pm 0.707$
Week III-Control	10	$1.70^{a} \pm 0.823$
Week III-50μg	10	$1.70^{a} \pm 0.483$
Week III-100μg	10	$3.70^{b} \pm 0.483$
Week III-200μg	10	$5.60^{c} \pm 0.516$
Week IV-Kontrol	10	$1.60^{a} \pm 0.516$
Week IV-50μg	10	$1.80^{a} \pm 0.442$
Week IV-100μg	10	$3.50^{b} \pm 0.527$
Week IV-200μg	10	$5.50^{c} \pm 0.527$
Week V-Control	10	$1.70^{a} \pm 0.675$
Week V-50μg	10	$1.90^{a} \pm 0.316$
Week V-100μg	10	$3.50^{b} \pm 0.527$
Week V-200μg	10	$5.40^{c} \pm 0.516$
Week VI-Control	10	$1.80^{a} \pm 0.789$
Week VI-50μg	10	$1.60^{a} \pm 0.516$
Week VI-100μg	10	$3.70^{b} \pm 0.483$
Week VI-200μg	10	$5.60^{c} \pm 0.516$

Boldness: Different Superscript [at] same column show the difference having a meaning (of) ($P<0.05$)

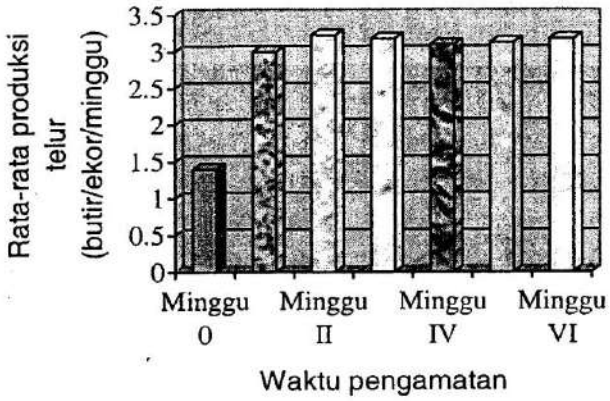


Figure 2. Graph of Bar of product increase of egg at n-week after treatment by using anti prolactine 200μg / ml.

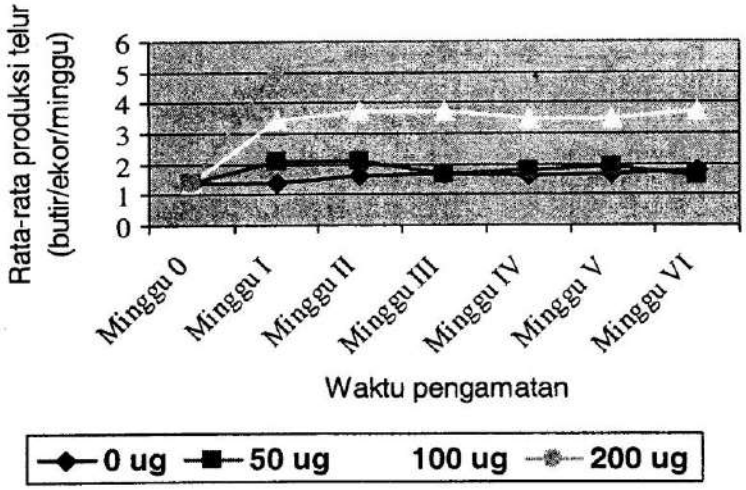


Figure 3. The egg production of the Laying Hens by effect of treatment combination of gift anti-prolactine with the different time and dose.

Hot Stress at chicken can cause the height of rate prolaktin in blood. height of Rate prolactine in blood will degrade the appearance produce. The mentioned as according to statement of Turner and Bagnara, 1988, expressing that hot stress will induce the hypothalamus to release the adenocorticotropic hormon-releasing hormone (ACTH-RH) and prolactine releasing hormone (PRH) to stimulate the hipofisa anterior to yield the ACTH and prolactine. Hormone ACTH which have been produced will stimulate the adrenal cortex to release the hormone corticosteroid of like cortisone, hydrocortisone, aldosteron, glukocorticoid and mineralocorticoid conducted through blood circulation to the ovary so that improve the response of ovary cell to prolactine causing the happening of ovary regression. Existence of regression ovary in the end will cause do not form of a egg. Here in after Havez, (2000) also strengthen the above statement, that prolactine physiologically will mount when chicken suffering

the hot stress. The fact strengthened by statement Ganong 1980, expressing that during heavy heat stress, sum up the ACTH which secreted by hypofisa anterior exceed the amount ACTH which is needed to generate the maximal expenditure of corticosteroid which in the end will improve the response ovary to prolactine so that will cause the happening of ovary regression.

According to Tachibana, *et al.* 2004, Freeman *et al.*, 2000; Jhon and Wentworth 1998, hormone prolactine can cause the happening effect of anti gonadal, is so that happened by the resistance produce the egg and degradation of temperature rectum which in the end produce the egg from hen laying will be down hill even desist, to that's needed by a therapy which can be used to degrade the rate prolactine in very the high blood.

Pursuant to research Safitri (2005) and Safitri *et al.*,(2006) that high rate prolactine in blood earn the neutralization with the gift of anti prolactine. Anti prolactine inseminated will fasten and neutralization work the existing prolactine in chicken blood so that as a result chicken will be able to produce the egg return normally.

Through knowable Factorial method SPSS is showed productivity increasing of natural hens laying of hot stress after inoculation by anti prolactine that is shown sum up the egg from first week after treatment until twelfth week, also can know which the dose can bring back the production of the egg as according to a period of its productivity

Generally the hen laying start to lay eggs after age 16-18 week and reach the top produce at 20-22 week by reaching egg production till 93-96% (Brownian Jesus, 1997; Hy-Line, 1998; Ingham, 1998; Lohmann, 1999). A period of laying eggs counted since chicken reach 5% hen-day till is lower the than 50% hen-day. Hen-Day is a size measure technical efficiency of egg comparing production that day with the chicken amount which live on the. a period of laying eggs in each type and strain chicken different each other. Some hens laying medium there is tired 50% hen day after old age more than 74 week, but there is new also old age 55 week have productive less 60% hen-day (Rasyaf, 1994). Result of research with the Factorial method SPSS show with the gift by anti prolactine with the dose 100 μ g can increase product the egg above 50% hen day that is about 50-70% hen day at first week after inoculation, while with the dose 200μg egg production can reach between 70-85% hen day at first week after inoculation.

CONCLUSION

Pursuant to research which have been done, can be pulled a conclusion and as follows: Anti prolactine serve the purpose of therapy to overcome the degradation produce the egg of hens laying at natural of hot stress.

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