



PROCEEDING

International Seminar And Workshop

BITING FLIES AS VECTORS OF TRYPANOSOMES AND THE ROLE OF ONE HEALTH IN ANIMAL HEALTH

Yogyakarta, May 19th-25th, 2014



Coordinated by:
Graduate Program - Faculty of Veterinary Medicine
Gadjah Mada University

**International Seminar and workshop on
Biting Flies as vectors of Trypanosomes and
the Role of One Health in Animal Health
Yogyakarta, Indonesia, May 19th - 25th, 2014**

ORGANIZATION

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 - : Dean of the Faculty of Veterinary Medicine,
Gadjah Mada University, Indonesia
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 - Dr. Aurielle Binoi Herder (CIRAD/GREASE-France)
 - Dr. Marc Desquesnes (CIRAD /IRD/KU- France)
 - Dr. Stephane Herder (CIRAD/IRD/KU-France)
 - Dr. Alan Dargantes (Central Mindanso University – Philippines)
 - Dr. Candrawathani Panchadcharam (VRI – Malaysia)
 - Dr. Jumnonjit Phasuk (Kasetsart University – Thailand)
 - Dr. Phung Quoc Chuong (NIVR – Vietnam)
 - Dr. Gilles Sain-Martin (CIRAD – France)
 - Prof. Dr. Wayan T. Artama (Gadjah Mada University – Indonesia)
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Seminar schedule
Day 1 : May 19th, 2014; Seminar at University Center UC
in Bulaksumur Room (Group A)

Time	Programme	Lecture/Speaker	duration	
International seminar on Biting Flies and Trypanosomes				
09.00 – 09.05	Opening remarks from the committee	Dr. Wisnu Nurcahyo (GMU)	5 min	T
09.05 – 09.15	Opening Speech from GMU	Prof. Dr. Suratman (Vice Rector Research GMU)	10 min	T
09.15 – 09.25	Opening Speech from coordinator of BioZoonoSEA	Prof. Sathaporn Jittapalpong (KU)	10 min	T
09.25 – 09.30	Opening Speech from NAHIA7 coordinator (CIRAD-IRD)	Dr. Marc Desquesnes (CIRAD / KU)	5 min	T
09.30 – 09.45	Coffee break		15 min	
Morning Session (Moderator Dr. Alan Dargantes)				
09.45 – 10.25	Lecture 1 : Concept of One Health / EcoHealth	Dr. A Binot	40 min	T
10.25 – 10.45	L 2 : Parasitic Zoonoses in Thailand	Pr. S Jittapalpong	20 min	T
10.45 – 11.05	L 3 : VRI and zoonoses in Malaysia	Dr C Panchadcharam	20 min	T
11.05 – 11.25	L 4 : Atypical Human Trypanosomoses in SEA	Dr S Herder	20 min	T
11.25 – 11.45	L 5 : Biting-Insects as mechanical vectors	Dr M Desquesnes	20 min	T
11.45 – 12.05	L 6 : Parasitic zoonoses in Indonesia	Dr. Wisnu Nurcahyo	20 min	T
12.05 – 12.50	Lunch Time (45 min)			
Afternoon Session 1 (Moderator Dr. Marc Desquesnes)				
12.50 – 13.00	L 7 : National regulation of Animal health in Indonesia	Dr. Pudjabnoko (Director of Animal Health, Minist. of Agric.)	15 min	T
13.00 – 13.10	L 8 : Surra in the Philippines	Dr. A. Dargantes	15 min	T
13.15 – 13.30	L 9 : Surra in Malaysia	Dr. C. Panchadcharam	15 min	T
13.30 – 13.45	L 10 : Surra in Thailand	Prof. S Jittapalpong	15 min	T
13.45 – 14.00	L 11 : Surra in Indonesia	Dr. April Wardana	15 min	T
14.00 – 14.15	L 12 : Molecular aspects of surra	Prof. Dr. Wayan Artama	15 min	T
14.15 – 14.30	L 13 : Economic impact of surra	Dr A Dargantes	15 min	T
Regional aspects of Surra in Indonesia (Moderator Dr. Wisnu Nurcahyo)				
14.30 – 14.40	L 14 : Surra in Banten	Balivet	10 min	T
14.40 – 14.50	L 15 : Surra in Bali	BB Vet Denpasar	10 min	T
14.50 – 15.00	L 16 : Surra in Java	BB Vet Wates	10 min	T
15.00 – 15.10	L 17 : Surra in Nusa Tenggara	Dispet Waingapu, NTT	10 min	T
15.10 – 15.20	L 18 : Surra in North Sumatra	BVet Medan	10 min	T
15.20 – 15.30	L 19 : Surra Kalimantan	BVet Banjarbaru	10 min	T
15.30 – 15.40	L 20 : Surra in Sulawesi	BBVet Maros	10 min	T
15.40 – 15.50	L 21 : Surra in West Sumatra	BVet Bukittinggi	10 min	T
15.50 – 16.00	L 22 : Effects of Methanolic Extract of Buah Makasar <i>Brucea javanica</i> (L) Merr. Leave's on The Parasitemic Level of <i>Trypanosoma Evansi</i> (Steel, 1885) in Mice	Rr. Upiok Ngesti Wibawaning Astuti	10 min	T
16.00 – 16.10	L23 : Wild Rats Trypanosomiasis In Surabaya: a Case Report	Lucia Tri Suwanti	10 min	T
16.10 – 16.30	Coffee break			
Open Discussion (Moderator Dr. C. Panchadcharam)				
16.30 – 16.40	L 22: GREASE network	Dr. A Binot	10 min	T
16.40 – 17.05	Open Discussion on One Health Concepts : Biting flies and Trypanosomes	Dr. A Binot Dr. Marc Desquesnes (CIRAD / GREASE)	25 min	T
17.05 – 17.15	Closing remarks	Dr. A Binot/ Dr. Marc Desquesnes	10 min	T
17.15 – 17.20	Announcement	Dr. Wisnu Nurcahyo	5 min	T

Day 1: Parallel session in Wanagama room (Group B)
The Role of One Health in Animal Health

Time	Title	Speakers	Duration	Moderator
09.45 – 09.55	Lecture 1: Effect of Chinaberry	Rr Uplek NWA	10 min	Dr. Yudha
09.55 – 10.05	Lecture 2: Study of Toxoplasmosis	Slamet Raharjo	10 min	
10.05 – 10.15	Lecture 3: Clasical Swine Fever	Widi Nugroho	10 min	
10.15 – 10.25	Lecture 4: Potensi of Precocious Lines of Eimeria	Yunus, M	10 min	
10.25 – 10.35	Lecture 5: The Role of Tamoxifen	Devita Anggraeni	10 min	Dr. Lucia TS
10.35 – 10.45	Lecture 6: Preliminary study on porcine	Fajar S.	10 min	
10.45 – 11.0	Lecture 7: Hair examination	Soedarmanto, I.	10 min	
11.00 – 11.10	Lecture 8: The Effect BCS	Agung B	10 min	
11.10 – 11.20	Discussion		10 min	
11.20 – 11.30	Lecture 9: Cloning of Gene encoding MRP gene 188 bp	Mitra Silpranata	10 min	Prof. Pujiastuti
11.30 – 11.40	Lecture 10: The Bed Bugs	Susi Soviana	10 min	
11.40 – 11.50	Lecture 11: Detection Of <i>Edwardsiella Tarda</i> From African Catfish	Miftahul Fikar	10 min	
11.50 – 12.00	Lecture 12: Effect of Kersen Fruit Extract	Vembriarto Jati Pramono	10 Min	
12.00 – 12.10	Discussion		10 min	
12.10 – 12.50	Lunch Time (40 min)			
12.50 – 13.00	Lecture 13: Hemolytic effect of venom	Slamet Raharjo	10 min	Prof. Aris J
13.00 – 13.10	Lecture 14: The efficacy of abamectin	Yuniadi	10 min	
13.10 – 13.20	Lecture 15: Red Ginger (<i>Zingiber Officinale Roscoe</i>) As Immunostimulant	Untari, T	10 min	
13.20 – 13.30	Discussion		10 min	
13.30 – 13.40	Lecture 16: Hematological Studies On Turi Ducks	Irkham Widiyono	10 min	Dr. Indar Y
13.40 – 13.50	Lecture 17: Mapping Of Zoonotic Diseases And Spatial Analysis	Wayan T. Artama	10 min	
13.50 – 14.00	Discussion		10 min	
14.10 – 14.20	Lecture 18: Morphology and pathological feature	Bambang Sutrisno	10 min	Prof. Isrina
14.20 – 14.30	Lecture 19: The Effect Of Bamboo Leaves Infusion	Widiarso, B. P.	10 min	
14.30 – 14.40	Lecture 20: Using GIS technology	M. Tauhid Nursalim	10 min	
14.40 – 14.50	Lecture 21: Biological Characterization Of Bovine Herpes Virus	Untari, T	10 Min	
14.50 – 15.00	Lecture 22: genetic diversity study of native	Trini Susmiati	10 Min	
15.00 – 15.10	Discussion		10 min	
15.10 – 15.20	Lecture 23: <i>Mediorhynchus Gallinarum</i> (Acanthocephala: Gigantorhynchidae)	Joko Prastowo	10 Min	Dr. Fajar
15.20 – 15.30	Lecture 24: Upgrading Community	Aris Purwantoro	10 Min	
15.30 – 15.40	Lecture 25: <i>Mediorhynchus gallinarum</i> of Layer Poultry	Ana Sahara	10 Min	
15.40 – 15.50	Lecture 26: The Effect of Doxycycline	Agustina Dwi Wijayanti	10 Min	
15.50 – 16.00	Lecture 27 Potency of Testosterone Hormone Therapy	Yuli P. Kristianingrum	10 Min	
16.00 – 16.15	Discussion		15 Min	
16.15 – 16.25	Lecture 28 : Specific Primers to Confirm Gene of <i>Bacillus anthracis</i>	Max Sanam	10 Min	Dr. Yudha F
16.25 – 16.35	Lecture 29 : Modification of Nucleoprotein	Sidna Artanto	10 Min	

16.35 – 16.45	Lecture 30 : Effect of transport on TPP	Sarmin	10 Min	
16.45 – 17.05	Discussion		15 Min	
17.05 – 17.15	Closing remarks	Dr. A Binot	10 min	T
17.15 – 17.20	Announcement	Dr. WisnuNurcahyo	5 min	T

**Meeting of Indonesian Society for Veterinary Parasitology
(Time 19.00 – 22.00) at Wanagama Room)**

Presidium : Dr. drh. Wisnu Nurcahyo
 Dr. drh. Fajar Satria
 Dr. drh. Yudha Fahrimal
 drh. Didik Tulus Subekti, MSi
 drh. Ketut Mastra

Participants : Universities, Diseases Investigation Center, Veterinary Research Institute, Veterinarian, Biologist etc.

Day 2 : Workshop/Training
Tuesday, May 20th, 2014:
Biting flies biology & trapping

Time	Programme	Lecture/Speaker	Place/Time	Remark
08.30 – 09.00 30 min	Lecture 1 : An overview on biting insects	Dr Marc Desquesnes		T
09.00 – 10.00 60 min	Lecture 2 : Biology of Tabanids	Dr Marc Desquesnes		T
10.00 – 10.45 45 min	Lecture 3 : Biology of Stomoxysine flies	DrJumnongjitPhasuk		T
10.45 – 11.00	Coffee break		15 min	
11.00 – 11.30 30 min	Lecture 4 : Seasonality of tabanids in Thailand	DrJumnongjitPhasuk		T
11.30 – 12.00 30 min	Lecture 5 : Seasonality of stomoxes in Thailand	DrJumnongjitPhasuk		T
12.00 – 13.00	Lunch Time		60 min	
13.00 – 14.15 75 min	Lecture 6 : Trapping technologies	Dr Marc Desquesnes		T
14.15 – 14.30	Coffee break		15 min	
14.30 – 17.30 3 hours	Field trip 1 : Setting up of insect traps in the Field (KP4 – GMU)	Dr Marc Desquesnes DrJumnongjitPhasuk DrWisnuNurcahyo Dr Alan Dargantes		P
17.30 – 18.00	Back to UC Hotel			

Day 3: Workshop/Training
Wednesday, May 21th, 2014:

Biting flestrapping & identification

Time	Programme	Lecture/Speaker	Place/Time	Remark
08.00 – 10.00 2 hours	Field trip 2 : Collect of cages from traps in the field KP4 – UGM	Dr Marc Desquesnes DrJumnongjitPhasuk DrWisnuNurcahyo Dr Alan Dargantes	KP4 GMU	P
10.00 – 10.15	Coffee break		15 min	
10.15 – 12.00 105 min	Lecture 7 : Identification of biting flies: generalities & Tabanids	Dr Marc Desquesnes	FVM GMU	P
12.00 – 13.00	Lunch Time		60 min FVM GMU	
13.00 – 14.45 105 min	Lecture 8 : Identification of <i>Stomoxys</i> , <i>Hematobia</i> and <i>Muscacrassirostris</i>	DrJumnongjitPhasuk	FVM GMU	T
14.45 – 15.00	Coffee break		15 min FVM GMU	
15.00 – 17.00 2 hours	PW1 : Identification of biting insects collected in the morning	Dr Marc Desquesnes DrJumnongjitPhasuk Dr Alan Dargantes	FVM GMU	P

Day 4: Workshop/Training
Thursday, May 22th, 2014:

*Biting fliestrapping, identification & control;
 Trypanosomes: biology & identification*

Time	Programme	Lecture/Speaker	Place/Time	Remarks
08.00 – 12.00	Field trip 3: Setting up of insect traps in the field of beef cattle, Bantul	Dr Marc Desquesnes Dr Jumnonjit Phasuk Dr Wisnu Nurcahyo Dr Alan Dargantes	Bantul	P
12.00 – 13.00	Lunch Time in the Beach		60 min	
13.00 – 14.00	Back to UGM		60 min	
14.00 – 14.15	Coffee break		15 min	
14.15 – 15.00	Lecture 9 : Biology, morphology and pathogeny of Trypanosomes	Dr Stéphane Herder	45 min	T
15.00 – 15.30	Lecture 10 : Parasitological diagnosis of Trypanosomes	Dr Marc Desquesnes	30 min	T
15.30 – 16.00	Lecture 11 : Serological diagnosis of Trypanosomes	Dr Marc Desquesnes	30 min	T
16.00	Coffee break			

Collect of cages and insects from the field in Bantul by staff

Day 5 : Workshop/Training
Friday, May 23rd, 2014:

Biting flestrapping & identification
Trypanosomes: Molecular diagnosis, characterization and control

Time	Programme	Lecture/Speaker	Place/Time	Remarks
08.00 – 10.00	PW2: Identification of biting flies collect from Bantul	Dr Marc Desquesnes DrJumnongjitPhasuk DrWisnuNurcahyo Dr Alan Dargantes	FVM GMU	P
10.00 – 10.15	Coffee break			
10.15 – 11.00	Lecture 12: Molecular diagnosis of Trypanosomes	Dr. WayanArtama	FVM GMU	
11.00 – 12.00	Lecture 13 : Molecular characterization of Tryps	Dr. Stéphane Herder	FVM GMU	
12.00 – 13.00	Lunch Time			
			60 min	FVM GMU
13.00 – 13.30	Lecture 14: Control of surra in Philippines	Dr. A Dargantes	FVM GMU	P
13.30 – 14.00	Lecture 15: Control of surra in Thailand	Dr. Marc Desquesnes	FVM GMU	P
14.00 – 16.00	PW3: Identification of biting flies from beef cattle Bantul by Dr. J. Phasuk in Lab. Parasitology (Parallel session with brain storming on Surra)	GREASE Brain storming Regional project on Surra Dr. W Nurcahyo, Prof. Wayan, Dr. Chandra, Artama, Prof. E. Asmar, P Q Chuong, D T TThuy, DrADargantes, Dr S Herder &Dr M Desquesnes, & others	Meeting Room Parasitology FVM GMU	P
16.00 – 16.15	Coffee break			
			15 min	FVM GMU
16.15 – 17.15	PW4: Practical work in the laboratory for parasitological diagnosis of trypanosomes	Dr. Marc Desquesnes DrStéphane Herder DrWayanArtama DrWisnuNurcahyo	60 min	T

Day 6 : Workshop/Training
Saturday, May 24th, 2014:

Biting flies identification
Trypanosome molecular diagnosis

Time	Programme	Lecture/Speaker	Place	Remarks
08.00 – 10.00	Collect of insect traps in field from dairy cattle Kaliurang, Sleman	Dr. Marc Desquesnes DrStéphane Herder DrWayanArtama DrWisnuNurcahyo	Kaliurang	P
10.00 – 12.00	Identification of biting flies from dairy cattle Kaliurang, Sleman	Dr. Marc Desquesnes DrStéphane Herder DrWayanArtama DrWisnuNurcahyo	FVM GMU	P
12.00 – 13.00	Lunch Time		60 min FVM GMU	
13.00 – 16.00	PW5: Practical work in the laboratory of Molecular biology for Trypanosomes	DrStéphane Herder and Prof. WayanArtama	FVM GMU	P
16.00 – 17.00	Conclusions and Closing ceremony	Dr. Marc Desquesnes Dr. JokoPrastowo	CIRAD/IRD Dean FVM GMU	

Day 7: City Tour
Sunday, May 25th, 2014

THE EFFECT OF BAMBOO LEAVES INFUSION ON MOTILITY OF BULLS SPERMATOZOA

B.P. Widiarso and J. Daryatmo

ABSTRACT

Research on the effect of bamboo leaves on motility of bulls spermatozoa aims to determine the content of active substances in the leaves of green bamboo (Bambusa vulgaris), knowing motility of spermatozoa of bull in bamboo leaf infusion as a result of the provision and analysis of sperm motility by comparing with the Indonesian National Standard (SNI) bull semen quality. The research material includes tools and materials used during the research tools used are: bovine artificial vagina, inner liner, pump, water bath, deck glass, glass objects, haemocitometer, microscopes, stopwatch, counter check, oven, erlenmeyer flask, electronic scales and pipette. The materials used are bamboo leaf infusion, bulls semen, Physiological NaCl 0.5 %, eosin-nigrosin staining for spermatozoa, filter paper and a plastic bag. Bovine semen samples taken using an artificial vagina at 4 stud cows with various strains and repeated 4 times repeat at intervals of one week. Samples that have been collected subsequently taken one drop of sperm motility and examined under a microscope to control. In the treatment of semen samples taken one drop, then sprinkled with a drop of bamboo leaf infusion each concentration of 1%, 5%, 10% and 20%, subsequently observed percentage motility of the spermatozoa. Observations are recorded and tabulated. The results showed that bamboo leaves can lower sperm motility due to lowered activity of the testes and epididymis, the addition of bamboo leaf infusion on spermatozoa cows were able to lower the sperm motility and the higher concentration of bamboo leaf infusion is added to the spermatozoa, the rate of decline in sperm motility will be higher.

Keywords : Bamboo leaves, semen, Beef cattle

INTRODUCTION

The main target of beef cattle breeders are getting the maximum benefit from doing farm activities. This advantage can be obtained from Beef cattle weight gain and quality of meat produced. Basically all nationalities and types of cattle can be fattened. However, to get maximum results breeder should be able to take into account the results already obtained (sale of livestock) with the cost (purchase of cows, feed, operating costs). In general, cows are profitable cows are indeed fast growth rate, good and high-quality meat. To get it is not easy, farmers are required to have the knowledge, experience and skills.

One of the criteria in the selection of superior cows are cows Nations and genetic properties. Each nation has a cow genetic properties different, both the flesh, or the ability to adapt to the environment such as climate adaptation and adjustment of feed . According to the theory, the superior cows as beef cattle is the type: Hereford, Aberdeen Angus, Beefmaster, Charolais, etc., which usually must be imported from abroad. The cows of this type can result in carcass percentage over 60%. While local species such as cattle Bali, Madura, Ongole, carcass percentage is always lower than the above types of cattle. However, in practice the kind of superior cows is not popular among the traditional farmers in Indonesia. Breeding cattle imports are often not able to meet the expected target. This opinion is true, but the main cause is sometimes not as bad seeds, but the discrepancy climate where the cows were bred, maintenance techniques and low quality feed.

Climatic differences between the regions of origin to the new environment makes imported cows have to fight extra hard to adapt to the stress and ultimately affect the severity of growth. Not to mention the problem of ignorance about the difference in

treatment between the breeder cattle imports with local cattle. Similarly, the feed, the quality is different from the daily feed consumed is imported cows. In the end, farmers will not be able to generate profits could even lose money.

Feeding by the breeder done by considering the existing feed stocks. Forage forage needs not only using elephant grass, grass field sometimes banana leaves, banana weevil, cassava leaves and bamboo leaves. Bamboo leaf feeding on cattle basically have a high palatability value, but still unknown is the effect of feed on sperm motility in male cattle.

Theoretical basis

Ethanollic extract of leaves of bamboo (*Bambusa arundinaceae*) led to decreased fertility in male rats. The number of spermatozoa and motility spermatozoa taken from the cauda epididymis decreased. Additionally Ethanollic extract of bamboo leaves can also lower the testes, epididymis, vas deferens and prostata gland (Vanithakumari et al., 1989).

Results of laboratory tests of bamboo leaf extract content (*Bambusa vulgaris*) include: alkaloids, tannins, phenols, glycosides, saponins, flavonoids and anthraquinon. Extract the bamboo leaves are abortive which when administered in rabbits at a dose of 250 mg/kg body weight showed 50% experienced abortion pregnant female rabbits, but when given at a dose of 500 mg/kg body weight of 100% pregnant female rabbits undergo abortion (Moses et al., 2009)

Research shows bamboo leaves contain many active substances, namely flavonoids, polysaccharides, chlorophyll, amino acids, vitamins, microelements, and so on, so it is good to lower blood fats and cholesterol. Also believed to reduce oxidation

or free radicals, as antiaging ingredients, and is able to maintain stamina and prevent cardiovascular disease (Purwo, 2010).

Test fractions hypoglycemic effect of ethanol extract of leaves and yellow bamboo shoots (*Bambusa vulgaris* Schard) on male white mice by Yozy Yaznil of Andalas University. The experimental results indicate that the polar fraction extract of leaves and yellow bamboo shoots have hypoglycemic effects. Hypoglycemic effect given by the polar fraction extract of bamboo shoots a dose of 300 mg / kg bw . not significantly different compared with kloropropamid dose of 32.5 mg / kg bw

Have investigated the chemical constituents of bamboo shoots (*Bambusa vulgaris* Schrad, ex. Wendl., Poaceae). Phytochemical screening showed the presence of flavonoids and steroids/triterpenoids in dried bamboo shoots. From ethanol-water extract of fresh bamboo shoots have been found flavonoids, phenolic acids and other phenolic compounds. Flavonoids are identified as 4, 3', 4'-trihydroxy Auron 6-glucoside. Phenolic acids consist of the free phenolic acids p- hydroxy benzoic acid and acid vanilat; the glycoside form phidroksi benzoic acid, acid and acid vanilat siringat; form of the acid esters of p-hydroxy benzoic acid and vanilat. Other phenolic compounds suspected as p-hidroksibenzaldehida . Of n- hexane extract of dried bamboo shoots isolated steroids/triterpenoids suspected as stigmasterol (RI Department of Health, 2000)

The content of *E. variegata* fitoldaun compounds derived compounds 3,7,11,15-tetramethyl-2-1-ol heksadeken showing antifertilitas activity against *R. norvegicus* spermatozoa in vitro at doses of $0.25 \times 10^{-3} \mu\text{g}/\mu\text{L}$. Isolated active compounds , may

decrease the motility and viability , as well as increase sperm abnormalities in mice (Herlina, 2006)

MATERIALS AND METHODS

Materials

The research material includes tools and materials used during the research tools used were: bovine artificial vagina, inner liner, pump, water bath, deck glass, glass objects, haemocytometer, microscopes, stopwatch, counter check, oven, erlenmeyer flask, scales elektrik and pipette. The materials used are bamboo leaf infusion, cement bulls, Physiological NaCl 0.5%, eosin-nigrosin staining for spermatozoa, filter paper, and plastic crackle.

Motility examination conducted research in the Laboratory of Reproductive STPP Magelang using 4 heads of cattle stud with strains limousine bamboo leaf sampling at the origin can be of three locations Rukun Tani farmer group Seketi Sawangan, farmer group Eko Waluyo Siangan Kebonagung Tegalrejo and in Japan village.

METHODS

Sampling methods

Bull semen sample taken using artificial vagina at 4 oxen, rams with various strains and repeated 4 times repeated with intervals of one week. Samples are collected further taken one drop of spermatozoa and examined under a microscope motilitasnya to control. The behavior of samples taken one drop of semen, then drop in with one drop of bamboo leaves infusa each concentration of 1%, 5%, 10% and 20%, further observed spermatozoanya percentage motility. The results are recorded and tabulated.

Data collection

The collection of primary data can be obtained with a laboratory test for the amount of leaf bamboo (*Bambusa vulgaris*) and bull semen collection to examine the motility of spermatozoa. Secondary data from the search results data can recording cattle and cattle data in clusters as a research partner.

Pembuatan Infusa daun Bambu

The crude dried bamboo leaves diserbuk with subtlety degree 5/8 then weighed dry powder of bamboo leaves 10 grams plus 100 ml aquades. Campur simplicia subtle degrees of matching in a saucepan with water to cover, heat on water for 15 minutes tangas calculated from temperature reaches 90°C while every once in a while in the mixture. Serkai flannel while warm through, add enough hot water through the grounds to obtained the desired volume infusa

Research Variables

The variables studied were the quality of sperm motility of spermatozoa cover (%), sperm concentration ($\times 10^5$ cells/ml) and spermatozoa viability (%) bulls.

Data Analysis

Motility data that has been collected analyzed descriptively by comparing the sperm quality standards. To distinguish the effect of bamboo leaf infusion between treatments were analyzed using analysis of variance (ANOVA).

RESULTS AND DISCUSSION

The purpose of this research is to know the content of active substances in the leaves of green bamboo (*Bambusa vulgaris*), knowing the quality of bull semen in granting infusa bamboo leaves covering the motility of spermatozoa, concentration and

percentage of live spermatozoa, and spermatozoa quality analysis by comparing with the Standard Nasional Indonesia (SNI) bull semen quality. From the results of the analysis and observations obtained findings as below.

Bamboo (*Bambusa vulgaris*) Leaves Composition

Bamboo leaves contains compounds phytol *E. variegata* leaf derived compound that is derived diterpen asiklik compound 3,7,11,15-tetramethyl-2-heksadeken-1-ol which showed activity against spermatozoa *R. norvegicus* fertility effect in vitro at doses of 0, 25 x 10⁻³ g / μ L. Active compounds have been isolated, can reduce the motility and viability, as well as increasing abnormality rat spermatozoa.

Table 1. Average motility spermatozoa cows after coupled with bamboo leaf infusion concentration within 0 minutes

Infusion concentration (%)	Sperm motility (%)	Sperm motility SNI/PTM (%)
0	86.67 \pm 2,89 ^a	80-85 ^b
1	58.33 \pm 7,64 ^a	80-85 ^a
5	60.00 \pm 8,67 ^a	80-85 ^a
10	53.33 \pm 5,78 ^a	80-85 ^a
20	53.33 \pm 5,78 ^a	80-85 ^a

^{a,b} Different superscripts indicate a significant effect (P<0,01)

From the above table it is known that the addition of bamboo leaf infusion has a significant effect (F count > F table, P < 0.01) against bull sperm motility. However, when compared with the data in accordance with SNI or Minimum Technical Requirements (PTM) with the addition of bamboo leaves far below the rate of sperm motility sperm motility by SNI or PTM

Tabel 2. Average motility spermatozoo cows after coupled with bamboo leaf infusion concentration within 0 minutes

Infusion Concentration (%)	Sperm Motility (%)
0	86.67 ^a ± 2,89
1	58.33 ^b ± 7.64
5	60.00 ^b ± 8.67
10	53.33 ^b ± 5,78
20	53.33 ^b ± 5,78

^{a,b} Different superscripts indicate a significant effect ($P < 0,01$)

From the above table it is known that the addition of bamboo leaf infusion has a significant effect ($F \text{ count} > F \text{ table}$, $P < 0.01$) against bull sperm motility. The data illustrates that the addition of a bamboo leaf infusion can lower sperm motility.

Tabel 3. Average motility spermatozoa cows with various concentrations of bamboo leaf infusion

Sperm motility after	0 minute	15 minute	30 minute	45 minute	60 minute
Control (0%)	86.67	86.67	80.00	80.00	71.67
1%	58.33	46.67	41.67	36.67	25.00
5%	60.00	45.00	30.00	20.00	11.67
10%	53.33	45.00	30.00	16.67	5.00
20%	53.33	46.67	30.00	13.33	3.33

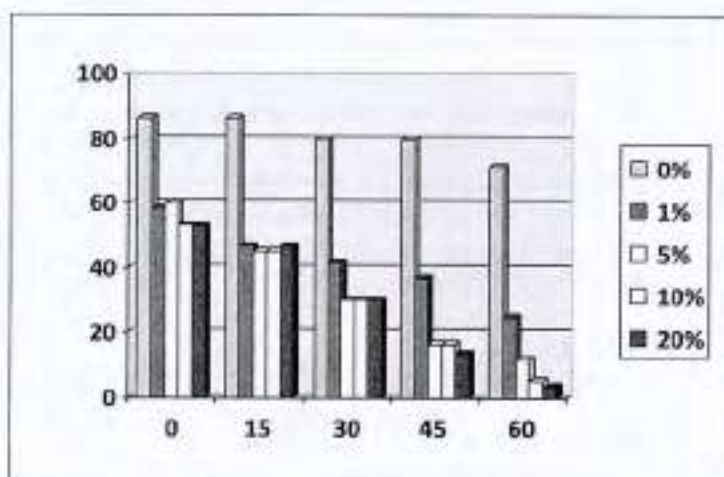


Figure 1. Average motility spermatozoa cows with various concentrations of bamboo leaf infusion

From the table above in mind that the overall increase infusa bamboo leaves have a significant influence ($F \text{ Calculate} > F \text{ table}$; $P < 0.01$) on the motility of bull spermatozoa. These data illustrate that the addition of bamboo leaves infusa able to

reduce the motility of spermatozoa . Inspection time difference motility of spermatozoa in sekeluruhan also have a significant ($P < 0.01$). In further experiments known about that every difference is a 15 minute inspection motility of spermatozoa have a significant difference between control and treatment. Each 15- minute additions will reduce the motility of spermatozoa was significantly ($P < 0.05$) . Concentration infusa bamboo leaves also have a significant influence on the motility of spermatozoa ($P < 0.05$). The higher the concentration infusa higher bamboo leaves will turn the declining motility of spermatozoa .

The decrease motility of spermatozoa by the addition of bamboo leaves infusa known fertility effect from the oxy compound 3,7,11,15-tetramethyl-2-heksadeken-1-ol. Concentration is also contained in the leaves dadap chicken (Herlina, 2006) . There is a decrease in motility of spermatozoa from bamboo leaves infusa illustrates that oxen given additional feed will reduce the libido of the bull , thus increasing the appetite is further able to increase daily weight cattle. Weight gain will affect the daily cattle ranchers because of the increased income earned total meat increased. Besides the ethanolic extract of bamboo leaves can also decrease the motility of spermatozoa due to lower activity of testes, epididymis, vas deferens and protata gland (Vanithakumari et al., 1989) .

CONCLUSION

1. Bamboo leaves contain compounds 3,7,11,15-tetramethyl-2-1-ol heksadeken-containing substances antifertilitas
2. Bamboo leaves containing Ethanolic extracts that can reduce sperm motility due to lowered activity of the testes and epididymis.
3. Additions bamboo leaf infusion on bovine sperm motility were able to derive

4. Higher concentration of bamboo leaf infusion is added to the spermatozoa will be higher the rate of decline in sperm motility.
5. Studies are re-infusion at a dose range of bamboo leaves with fewer numbers.
6. Efficacy studies are bamboo leaves on cows to determine the extent of the effects of substance antifertilitas in bamboo leaves against the reproductive cycle.

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