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なにより「安全で安心な国産農畜産物」を提供し続けること。
私たちはこの使命を果たしていくために、
生産から販売まであらゆるプロセスで、多角的な事業活動を展開しています。
Asian-Australasian Association of Animal Production Societies

- **Scope of AAAP**: AAAP is established to devote for the efficient animal production in the Asian-Australasian region through national, regional, international cooperation and academic conferences.

- **Brief History of AAAP**: AAAP was founded in 1980 with 8 charter members representing 8 countries—those are Australia, Indonesia, Japan, Korea, Malaysia, New Zealand, Philippines and Thailand. Then, the society representing Taiwan joined AAAP in 1982 followed by Bangladesh in 1987, Papua New Guinea in 1990, India and Vietnam in 1992, Mongolia, Nepal and Pakistan in 1994, Iran in 2002, Sri Lanka and China in 2006, thereafter currently 19 members.

- **Major Activities of AAAP**: Biennial AAAP Animal Science Congress, Publications of the Asian-Australasian Journal of Animal Sciences and proceedings of the AAAP congress and symposia and Acknowledgement awards for the contribution of AAAP scientists.

- **Organization of AAAP**:
  - President: Recommended by the national society hosting the next biennial AAAP Animal Science Congress and approved by Council meeting and serve 2 years.
  - Two Vice Presidents: One represents the present host society and the other represents next host society of the very next AAAP Animal Science Congress.
  - Secretary General: All managerial works for AAAP with 6 years term by approval by the council
  - Council Members: AAAP president, vice presidents, secretary general and each presidents or representative of each member society are members of the council. The council decides congress venue and many important agenda of AAAP

- **Office of AAAP**: Decided by the council to have the permanent office of AAAP in Korea. Currently # 909 Korea Sci &Tech Center Seoul 135-703, Korea


- **Current 19 Member Societies of AAAP**: ASAP(Australia), BAHABangladesh, CAAV(China), IAAP(India), ISAS(Indonesia), IAAS(Iran), JSAS(Japan), KSAST(Korea), MSAP(Malaysia), MLSBA(Mongolia), NASA(Nepal), NZSAP(New Zealand), PAHA(Pakistan), PNGSA(Papua New Guinea), PSAS(Philippines), SLAAP(Sri Lanka), CSAS(Taiwan), AHAT(Thailand), AHAV(Vietnam).

- **Previous Venues of AAAP Animal Science Congress and AAAP Presidents**

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Welcome Message

The 17th Animal Science Congress of AAAP will be held at Kyushu Sangyo University, Fukuoka, Kyusyu Area in Japan, from 22 to 25 August 2016. The aim of this congress is to provide a forum for the exchange of new information on animal sciences and technology, with a focus on successful strategies for the sustainable promotion of livestock considering the environment and welfare of livestock and human beings. At the same time, the congress will provide a venue for people from both inside and outside of the Asian Australasian region to make new contacts and renew friendships. Japanese Society of Animal Science is organizing the 17th AAAP Congress and is pleased to welcome everyone in this congress who is interested in animal science and production.

The venue of the congress, Fukuoka City, where tradition meets modernity, with delicious dishes and an excellent geographic location close to the Asian countries.

Prof. Mitsuhiro FURUSE
President of 17th AAAP
Committee Members

Mitsuhiro FURUSE
Seiichi KOIZUMI
Kei HANZAWA
Naomi KASHIWAZAKI
Masahiro SATOH
Koichi ANDO
Keitaro YAMANOUCHI

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Outline of the congress

Congress Name
The 17th Asian-Australasian Association of Animal Production Societies Animal Science Congress

Theme
Strive toward Progress on Sustainable Animal Production Contribute to Environment and Welfare for Human and Livestock

President
Mitsuhiro FURUSE (Professor, Animal & Marine Bioresource Sciences, Kyushu University)

Date
22-25 August, 2016

Venue
Kyushu Sangyo University
hotel nikko fukuoka

Official Website
http://www.aap2016.jp/

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201, Nagatani Corporas, Ikenohata 2-9-4, Taito-ku, Tokyo 110-0008, Japan
FAX: +81-(0)3-3828-7649 / E-mail: support@jsas-org.jp

Secretariat for AAAP2016

c/o Convention Linkage, Inc.
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TEL: +81-(0)3-3263-8695 / E-mail: aap2016@c-linkage.co.jp
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Hokushinetsu Society of Animal Science
Japan Embryo Transfer Society
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The Japanese Society of Animal Breeding and Genetics
Japanese Society for Applied Animal Behaviour
Japanese Society of livestock management
The Japanese Society of Swine Science
The Japanese Society of Veterinary Science
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The Society for Reproduction and Development
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Tadaaki TOKUNAGA
Yasuhiro TSUZUKI

University of the Ryukyus
Yoshimi IMURA

alphabetical order / titles omitted
O-10-4 EFFECTS OF FEED SUPPLEMENT ON THE ARTIFICIAL INSEMINATION EFFICIENCY OF BEEF COWS UNDER SMALL FARMS CONDITION IN INDONESIA
A. Latief Toleng¹, Muhammad Yusuf², Surya Darma²
¹ Hasanuddin University, Indonesia, ² Department of Livestock Services, Indonesia

O-10-5 SPERM FERTILITY DIFFERENCES ONGOLE CROSSBRED CATTLE IN EGG YOLK TRIS AMINOMETHAN AND EG YOLK CAUDA EPIDIDIMIS DILUTERS DURING COOLING PROCESS
Trinil Susilawati, Nolasco Dacosta, Nurul Isnaini, M Nur Ihsan, Priyo Sugeng Winarto,
Aulia Puspita Anugra Yeki
Animal Husbandry Faculty of Brawijaya University Indonesia

O-10-6 Potential of Evaporative System Improving Pregnancy Rate in Recipient Heifers after Embryo Transfers in Thailand
Umnaporn Rungroekrit, Jatuporn Kajaysri
Clinic for Obstetrics Gynecology Andrology and Artificial Insemination of Domestic Animals, Faculty of Veterinary Medicine, Mahanakorn University of Technology, Thailand

O-10-7 Factor affecting sperm uptake into the sperm storage tubules in Japanese quail (Coturnix japonica)
Tomohiro Sasanami¹,², Mei Matsuzaki¹,², Shusei Mizushima³
¹ Shizuoka University, ² Gifu University, ³ University of Toyama

O-10-8 Effect of Mangosteen (Garcinia mangostana) Pericarp Filtrate in Skim Milk Diluter on Bali Bull Diluted Semen Quality at room temperature
Nurul Isnaini, Trinil Susilawati, Aulia Puspita Anugra Yeki
Animal Husbandry Faculty of Brawijaya University Indonesia

O-10-9 The Quality of Chilled Semen Ongole Crossbred Cattle with the Replacement of Source Albumin in Cauda Epididymal Plasma-2 Diluter
Aulia Puspita Anugra Yeki¹, Enike Dwi Kusumawati², Nisaus Sholikah¹, Muchamad Luthfi¹,
Lukman Affandhy², Dicky Pamungkas³, Kuswati Kuswati¹, Aswha Ridhowi¹, Herni Sudarwati¹,
Nurul Isnaini¹, Trinil Susilawati¹
¹ Animal Husbandry Faculty of Brawijaya University, Indonesia,
² Animal Husbandry Faculty of Kanjuruhan University, Indonesia, ³ Beef Cattle Research Station, Pasuruan Indonesia

O-10-10 Association between number of follicles at the onset of Shortsynch and fertility in Japanese Black cows
Takeshi Osawa¹, Masashi Tanaka¹, Yuji Tsubakishita¹, Takashi Eka¹, Koichiro Hemmi², Ikuo Kobayashi³,
Mizuho Uematsu¹, Go Kitahara¹
¹ Laboratory of Theriogenology, University of Miyazaki, ² Sumiyoshi Livestock Science Station, University of Miyazaki,
³ Department of Production Medicine, NOSAI Miyazaki

Oral Session 11: Animal Nutrition (Ruminants) (1)
Tuesday, 23 August 14:30-16:30 Room N302

**Chair: Indah Prihartini** Faculty of Agriculture and Animal Science, University of Muhammadiyah Malang

O-11-1 Effect of Kaempferia galanga L. on in vitro nutrients digestibility, ruminal fermentation and methane production
Asih Kurniawati¹,², Widodo¹, Wayan T Artama², Lies Mira Yusiati³
¹ Faculty of Animal Science Universitas Gadjah Mada, ² Faculty of Veterinary, Universitas Gadjah Mada
0-11-2 EVALUATION ON INNOCULUM OF CYTOPHAGA Sp AS PROBIOTIC IN RUMINANT BY GAS PRODUCTION APPROACH
Indah Prihartini
Faculty of Agriculture and Animal Husbandry, University of Muhammadiyah Malang

0-11-3 The Effect of Rejected Soybean Supplementation with Different Treatments on Crossbreed Cattle Feed
Bambang Suhartanto1, Ristianto Utomo1, Satria Budi Kusuma1, Dian Astuti2
1Faculty of Animal Science, Gadjah Mada University, 2Center of Agrotechnology Innovation, Gadjah Mada University

0-11-4 Effects of nitrate, extracted chitosan or shrimp shell meal on degradability and In Vitro production
Thao Nguyen The1, Metha Wanapat2
1Department of Animal Science and Veterinary Medicine, Faculty of Agriculture and Natural Resources, 2University of Agriculture, Khon Kaen University, Thailand

0-11-5 Existing Feed Balance in Mixed Farming Systems in an Agricultural City of Probolinggo, East Java of Indonesia
Ifar Subagiyo1,2, Veronica Margareta Ani Nurgiartiningsih1, Suprih Bambang Siswijnono1, Mashudi Masudi1
1University of Brawijaya

0-11-6 METAGENOMIC ANALYSES OF RUMEN FIBROLYTIC BACTERIA SWAMP BUFFALO
Anjas Asrama Samsudin1,2, Maisara Amin1, Teck Chwen Loh1,2
1Department of Animal Science, Faculty of Agriculture, Universiti Putra Malaysia, Malaysia,
2Institute of Tropical Agriculture, Universiti Putra Malaysia, Malaysia

0-11-7 The Characteristic of Microencapsulation of Sesame Oil with Different Coating Mat and its effect on in vitro rumen fermentation
Sri Suharti, Farisa Diftairani, Raden Noviani, Asep Sudarman, Suryahadi Suryahadi
Department of Nutrition and Feed Technology, Faculty of Animal Science, Bogor Agriculture University

0-11-8 Bacterial communities of milk and cow shed samples in relation to changes of the somer cell count
Haoming Wu1, Yusuke Sugimoto2, Yuji Tanabe2, Takeshi Turuda1, Naoki Nishino1
1Okayama University, 2Okayama Livestock Research Institute

0-11-9 THE EFFECT OF HARVESTING INTERVAL ON NUTRITIVE VALUE OF DWARF ELEPHANT (Pennisetum purpureum CV Mott)
Artharini Irsyammawati
Animal Husbandry Faculty Brawijaya University

0-11-10 Somatic embryogenesis and regeneration of Brachiaria decumbens from immature inflorescences
Nilo Suseno1, Fitria Gemma Tyasari1, Rani Agustina2, Bambang Suwignyo1, Bambang Suhartanto1
1Dept. of Animal Nutrition Faculty of Animal Science Gadjah Mada University Indonesia,
2Dept. of Agronomy Faculty of Agriculture Gadjah Mada University Indonesia
0-15-8 Effects of pine bark extract (flavangenol®) on heat shock protein expression in chicks
Hui Yang1, Vishwajit S Chowdhury2, Mohammad A Bahry1, Phuong V Tran1, Phong H Do1, Guofeng Han1, Rong Zhang1, Hideki Tagashira1, Masahito Tsubata1, Mitsuhiro Furuse1
1 Laboratory of Regulation in Metabolism and Behavior, Graduate School of Bioresource and Bioenvironmental Science, Kyushu University, Japan,
2 Division for Experimental Natural Science, Faculty of Arts and Science, Kyushu University, Japan,
3 Division of Endocrinology, Department of Medicine, Boston Children’s Hospital, Harvard Medical School, USA,
4 Research and Development Division, Toyo Shinyaku Co., Ltd., Japan

0-15-9 COMPARATIVE STUDY OF NUTRITIONAL CONTENT AND PROTEIN PROFILE OF MALAYSIA EDIBLE BIRD NEST
STALIN JOEFREY1, AIMI IDERIS1,2, INTAN SAFINAR ISMAIL3, FARIDAH ABAS3, JALILA ABU1,3,
NORASFALIZA RAHMAD3, MOHKIRISH AJAT1,2, ROZAINAH MANSOR1,4
1 Centre of Excellence on Swiftlets, Faculty of Veterinary Medicine, Universiti Putra Malaysia,
2 Department of Veterinary Preclinical Sciences, Faculty of Veterinary Medicine, Universiti Putra Malaysia,
3 Department of Veterinary Clinical Studies, Faculty of Veterinary Medicine, Universiti Putra Malaysia,
4 Department of Medicine and Surgery of Farm and Exotic Animal, Faculty of Veterinary Medicine, Universiti Putra Malaysia,
5 Laboratory of Natural Products, Institute of Bioscience, Universiti Putra Malaysia,
6 Agro-Biotechnology Institute Malaysia, National Institutes of Biotechnology Malaysia, c/o MARDI Headquarters, Malaysia

0-15-10 The Effects of Red Onion Extract in the Pulmonary Histopathological Lesions of Layer Chickens At 47 Days Old
Riskha Natari
Gadjah Mada University

Oral Session 16: Animal Reproduction (2)

Chair: Junya Ito Azabu University

0-16-1 The Effect of Sexed Semen Methods Toward Motility and Ratio of X and Y Sperm Filial Ongole Cattle
Enike Dwi Kusumawati1, Nurul Isnaini2, Aulia Puspita Anugra Yekt3, Nisaus Sholikah4, Muchamad Luthfi4, Lukman Affandhy5, Dicky Pamungkas6, Kuswati7, Aswah Ridhowi7, Herni Sudarwati7, Triniil Susilawati7
1 Animal Husbandry Faculty, Kanjuruhan University, Indonesia,
2 Animal Husbandry Faculty, Brawijaya University, Indonesia,
3 Student of Animal Husbandry Faculty, Brawijaya University, Indonesia,
4 Beef Cattle Research Station, Indonesia

0-16-2 Effect of Post-Mortem Storage of Testicles on the Quality and Fertilizing Ability of Water Buffalo Epididymal Sperm
LERMA OCAMPO1,2, EDENIEL JEROME VALETE3, EVARISTO ABEILLA2, MARLON OCAMPO1
1 Reproductive Biotechnology Unit, Philippine Carabao Center, National Headquarters and Gene Pool,
2 Department of Biological Sciences, College of Arts and Sciences, Central Luzon State University

0-16-3 Calf Birth Weight and Post Partum Estrus Bali Cow Fed Complete Feed From Palm Oil Plantation in Central Borneo Indonesia
Mudhita Ida Ketut1, Baliarti Endang2, Priyono Sasmito Budhi Subur2, Umami Nafiatul2, Noviandi Cuk Tri3, Kustono3, Suparta Budisatria I Gede3, Wattimena Jeffrie3
1 Antakusuma University Faculty of Agriculture, 2 Gadjah Mada University Faculty of Animal Science,
3 Pattimura University Faculty of Agriculture
O-23-7 Expression profile of mood-related genes in the prefrontal cortex of Rev-erb α deficient mice
Tsuylshi Otsuka, Akira Kohsaka, Hue Le Thi, Tomorni Nakao, Masanobu Maeda
Wakayama Medical University School of Medicine

O-23-8 Action of insulin-like factor 3 (INSL3) as a germ cell survival factor in boars
Tetsuya Kohsaka1,2, Itaru Minagawa1,2, Dai Sagata1, Ali Mohammed Pitia1,2, Kei Terada1,2, Masatoshi Shibata1, Yoshihisa Hasegawa4, Hiroshi Sasada4
1 Laboratory of Animal Reproduction and Physiology, Faculty of Agriculture, Shizuoka University, Japan,
2 Division of Animal Resource Production, The United Graduate School of Agricultural Science, Gifu University, Japan,
3 Laboratory of Animal Reproduction, School of Veterinary Medicine, Kitasato University, Japan

O-23-9 Muscle fiber type visualization using four anti-myosin heavy chain antibodies
Shoko Sawano1, Yusuke Komiya2, Riho Ichitsubo2, Mako Nakamura2, Ryuichi Tatsumi2, Yoshihide Ikeuchi2, Wataru Mizunoya3
1 Fukuoka Women’s Junior College, 2 Kyushu University

O-23-10 Impact of oral L-citrulline administration on thermoregulation and heat-tolerance in chicks
Vishwajit S Chowdhury1, Phuong V Tran2, Mohammad A Bahry2, Phong H Do2, Hui Yang3, Guofeng Han2, Mitsuhiro Furuse2
1 Division for Experimental Natural Science, Faculty of Arts and Science, Kyushu University, Japan,
2 Laboratory of Regulation in Metabolism and Behavior, Graduate School of Bioresource and Bioenvironmental Science, Kyushu University, Japan

Oral Session 24: Feeds & Feeding (Ruminants) (2)
Thursday, 25 August 8:30-10:30 Room N301

Chair: Metha Wanapat Khon Kaen

O-24-1 PRODUCTIVITY AND NUTRIENTS QUALITY OF TWO VARIETIES Brachiaria sp ON DIFFERENT LEVEL OF FERTILIZER IN YOGYAKARTA INDONESIA
Nafiatiul Umami, Bambang Suhartanto, Meita Puspa Dewi
Faculty of Animal Science Universitas Gadjah Mada

O-24-2 EFFECTS OF FEEDING DAIRY COW WITH INOCULATED CORN SILAGE ON MILK QUALITY
Li-Chen Kao1, Jin-Seng Lin1, Hung-Hsi Hu2, San-Land Young1, Shi-Yong Li1
1 SynbioTech Inc., Taiwan; 2 Department of Food Science, National Penghu University, Taiwan

O-24-3 Performance of tropical dairy cows fed on cassava top silage in rice straw based diet
Metha Wanapat1, Kampanat Phetsatcha1, Bounnaxay Viennasay1, Sungchhhang Kang2
1 Tropical Feed Resources Research and Development Center (TROFREC), Department of Animal Science, Faculty of Agriculture, Khon Kaen University, Thailand,
2 Agricultural Unit, Department of Education, National Institute of Education, Cambodia

O-24-4 Fatty Acid Composition in M. longissimus dorsi muscle of Thai Swamp Buffalo Feeding by Soybean Oil Supplement within Concentration Rations
Pattarphon Patthararangsarin1, Sutit Boonprong2
1 King Mongkut’s Institute of Technology Ladrkrabang, 2 Ministry of Agriculture and Cooperative

O-24-5 Potential of Mixed Feed Palm Kernel Meal and Oil Palm Decanter Cake was Fermented by Rhizopus oligosporus for Bali Cattle
ROFIQ MUHAMAD NASIR1, Wina Elizabeth2, Angga I Wayan1, Gopar Ruslan Abdul1
1 Centre for the Agricultural Production Technology, BPPT, Indonesia,
2 Indonesia Research of Animal Production, Agricultural Ministry
0-40-2  Effect of Fungal Treated Oil Palm Fronds in the Diet of Goats  
Pin Chanjula¹, Vasun Petcharath², Puwadon Hamchara³, Anusong Cherddhong³  
Princ of Songkla University

0-40-3  Nutritional Status of Kangac Goats Fed Ruminally Undegradable Protein to Improve their Productivity  
A Kustantinah¹, Edwin Indarto¹, Rusman¹, I Gede Suparta Budisatria¹, Retno Adiwinarti²  
¹ Universitas Gadjah Mada, Indonesia; ² Faculty of Animal Agriculture, Universitas Diponegoro, Indonesia

0-40-4  Effects of replacing concentrate with wet soya milk residue on intake, digestibility and growth performance of goats  
Pattaraporn Tatsapong  
Naesuan University, Faculty of Agriculture, Natural Resources and Environment

0-40-5  The Sodium nitrate addition in total mixture fermentation of tofu waste as ration on methane production of the rumen fluid  
Zaenal Bachruddin, Sifa Latiefah  
Gadjah Mada University

0-40-6  Digestibility and Nitrogen Balance of Male Bligon and Kejobong Goat Fed Peanuts Straw  
Lies Mira Yusiat, Chusnul Hanim, Dianestu Putra  
Faculty of Animal Science, Universitas Gadjah Mada

0-40-7  The comparison of nutrient digestibility of Bligon and Kejobong goats fed king grass and peanuts straw  
Chusnul Hanim, Lies Mira Yusiat, I Gede Suparta Budisatria, Fandi Widyia Rachman  
Faculty of Animal Science, Universitas Gadjah Mada

0-40-8  STUDY FOR DOMINANCE AND NUTRITION OF WEEDS AS FEED IN VARIOUS CROP LAND IN YOGYAKARTA  
Bambang Suwignyo, Nafiatul Umami, Nilo Suseno, Wahyudin Wahyudin, Bambang Suhartanto  
Faculty of Animal Science, Gadjah Mada University

0-40-9  Effect of whole Krabok seed, krabok oil or krabok residue on in vitro methane production.  
Paiwan Panyakaew¹2, Thomas Schonewille³, Chalermpoon Youklang⁴, Wouter Hendriks¹³  
¹ Department of Animal Sciences, Wageningen University, The Netherlands,  
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³ Animal Nutrition division, Department of Farm Animal Health, Faculty of Veterinary Medicine, Utrecht University, The Netherlands,  
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0-40-10  Determination of energy and protein requirements of sheep in Indonesia using a meta-analytical approach  
Anuraga Jayanegara, Muhammad Ridla, Erika B. Laconi, Nahrowi Nahrowi  
Department of Nutrition and Feed Technology, Faculty of Animal Science, Bogor Agricultural University, Indonesia
PRODUCTIVITY OF TWO VARIETIES Brachiaria sp ON DIFFERENT LEVEL OF FERTILIZER IN YOGYAKARTA INDONESIA

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INTRODUCTION

Cattle production in Yogyakarta Indonesia has been increasing rapidly over the last decade. Therefore, the increase should be balanced by the increase productivity especially the availability of forage feed that is an important factor in supporting the productivity of ruminants. Brachiaria decumbens cv Basilisk and Brachiaria ruziziensis cv Kennedy grass is a source of forage that grows well in Indonesia throughout the year. Lascano and Euclides (2009) stated, some plant varieties Brachiaria such as Brachiaria decumbens cv Basilisk and Brachiaria ruziziensis cv Kennedy had a different response to fertilizer absorption. Marassing (2013) stated, the large amount of fertilizer applied depending on the response of several varieties of grass plants Brachiaria sp. The more complete and appropriate a given nutrient amounts, the better and the maximum result obtained. Miles et al (1996) suggested that Brachiaria decumbens cv Basilisk responds strongly to fertilizer N and P, while Brachiaria ruziziensis cv Kennedy respond well to N fertilizer.

Brachiaria grass production would be better if it is conducted with proper and appropriate fertilization dose. Therefore we need to conduct a study on the influence of NPK fertilizer on the growth, production and quality of Brachiaria sp in Yogyakarta, Indonesia.

MATERIAL AND METHODS

This research was conducted over one year at the Forage and Pasture Science Laboratory, Faculty of Animal Science, Universitas Gadjah Mada, Indonesia. The soil in this location is classified as regosol soil. Based on the soil test taken in June 2014, the result showed that it was netral (pH 7.12), with organic matter of 3.23%, N (0.2%) and P (0.22%) and K (0.1%).

Fertilization was conducted in accordance with the level of the corresponding dosage of NPK fertilizer, (P1 =0 kg, P2=150 kg, P3= 300 kg) sprinkled around the plant then covered by the soil. Planting was arranged with 1 x 1 m spacing. Furthermore, the plant development were observed and recorded.

The variables measured were growth (plant height, leaf numbers, plants length) productivity (dry matter production, organic matter production) and chemical composition. Observations on number of leaves was conducted by calculating the amount of green leaves on each plants. The rate of the number of leaves per week was calculated by the number of leaves day 60 was reduced with the number of leaves day 0 divided by time (weeks). The length was observed after the plant was moved to the land until day 60. The measurement started from the ground up to the longest length. The rate of leaf plants per week was calculated by the length on day 60 was reduced with the length on day 0 divided by time (weeks). Plant weight (canopy) at harvest was converted in tons/ha, then was multiplied with the percentage of dry matter (DM). Dry matter production (tons/ha) was multiplied with percentage of organic matter (OM).

The data collected was analyzed and if interaction exists, it was analyzed by using Duncan Multiple Range Test (DMRT)

Results and Discussion

The length of plants (cm) and the length rate of plant per week (cm/week) of several varieties of Brachiaria sp until the age of 60 days with provision of NPK fertilizer at certain levels with doses of 0 kg/ha, 150 kg/ha and 300 kg/ha, are B. decumbens cv. Basilisk has long accretion average per week was 16.71 cm, while B. ruziziensis cv. Kennedy had a mean of length per week was 12.86 cm. B. decumbens cv. Basilisk had a length of 155.23 cm whereas plants B. ruziziensis cv. Kennedy has a length of 128.64 cm. Sulistya and Mariyono (2013) stated, the length of B. decumbens cv. Basilisk grass was 98 cm, while B. ruziziensis cv. Kennedy was 85.5 cm.

Plant height (cm) and the rate of increase per week (cm/week) of B. decumbens cv. Basilisk and B. ruziziensis cv. Kennedy grass until the age of 60 days with the provision of NPK fertilizer with a dose level of 0 kg/ha, 150 kg/ha and 300 kg/ha.
and 300 kg/ha, are had no significant effect towards plant height (cm) and plant growth (cm/week). *B. decumbens cv. Basilisk* plant has lower average height (cm) and growth (cm/week) compared to *B. ruziziensis cv. Kennedy* per week. *B. decumbens cv. Basilisk* had a mean of growth of 5.65 cm/week, while *B. ruziziensis cv. Kennedy* was 6.24 cm/week. *B. decumbens cv. Basilisk* was 63.20 cm height, while *B. ruziziensis cv. Kennedy* was 67.67 cm. This may be due to *B. decumbens cv. Basilisk* has a type of high creeping growth and plant height increment per week lower than the *B. ruziziensis cv. Kennedy*. *B. decumbens cv. Basilisk* has a characteristic of spread growth and comes from tropical Africa. Carrilho et al. (2012) stated that *B. decumbens cv. Basilisk* grown in direct sunlight was 58 cm height, whereas in 50% radiation, it was higher, that was 63 cm.

Plant with fertilization level of 150 kg/ha has the highest height (cm) and growth (cm/week) compared with fertilization level of 0 kg/ha and 300 kg/ha. At the level 300 kg/ha, plant height and growth decreased, but not significantly. Sulistya and Mariyono (2013) stated, the height of *Pennisetum purpureum cv. Mott* at NPK fertilization level of 100 kg/ha and 200 kg/ha were respectively 78.8 cm and 74.8 cm. *Pennisetum purpureum cv. Hawaii* had the highest growth at the NPK fertilization level of 200 kg/ha, it was 130.8 cm. Meanwhile, at the fertilization level of 100 kg/ha, it was only 118.0 cm height. Plant height was influenced by genetics of each grass variety and the environment.

The number and the rate of increase in the number of leaves per week for several varieties of *Brachiaria sp* until the age of 60 days with the provision of NPK fertilizer with a dose level of 0 kg/ha, 150 kg/ha and 300 kg/ha, are had no effect on the growing number of leaves per week. It was because the number ploidization only affected the leaf surface area only. This is consistent with the statement Anggraito (2004) which stated that polyploid is a state of an individual who had more than two sets of chromosomes. Polyploid plants generally have the physical characteristics of the increase in cell size, slower cell growth rate, thicker leaves, less and larger flowers, larger fruit and declining fertility at various levels compared with diploid plants.

Dry matter content of some *Brachiaria sp* varieties with the provision of NPK fertilizer with dose level of 0 kg/ha, 150 kg/ha and 300 kg/ha, are listed in Table 1.

<table>
<thead>
<tr>
<th>Fertilizer Level</th>
<th>Dry Matter Content (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 kg/ha</td>
<td>12.60%</td>
</tr>
<tr>
<td>150 kg/ha</td>
<td>14.80%</td>
</tr>
<tr>
<td>300 kg/ha</td>
<td>13.20%</td>
</tr>
</tbody>
</table>

The results showed that the different varieties of *Brachiaria sp* had a significant effect (P <0.05) towards dry matter content. *B. decumbens cv. Basilisk* had a higher dry matter content of 14.80% rather than *B. ruziziensis cv. Kennedy* of 12.60%. Carrilho et al. (2012) stated that *B. decumbens cv. Basilisk* grown under the sun had a higher dry matter content of 25%, whereas those with exposure to sunlight of 30% and 50% has a dry matter content of 22% and 23% respectively.

Table 1 shows that the levels of fertilization had a significant effect (P <0.05) towards dry matter content. *B. decumbens cv. Basilisk* and *B. ruziziensis cv. Kennedy* has the highest dry matter content at NPK fertilization level of 150 kg/ha. This shows that the fertilization level of 150 kg/ha responds best in increasing dry matter content compared with NPK fertilization level of 0 kg/ha and 300 kg/ha. Sesaray et al. (2013) stated that, elephant grass (*Pennisetum purpureum*) with the fertilization of 100 kg urea/ha 50 kg TSP/ha 50 kg KCl/ha had a dry matter content of 22.61%, while the fertilization of 200 kg urea/ha TSP 100 kg/ha 100 kg KCl/ha had a dry matter content of 24.56%, and those without fertilization had a dry matter content of 23.91%.

The content of organic matter of several *Brachiaria sp* varieties until the age of 60 days with NPK fertilizer doses of 0 kg/ha, 150 kg/ha and 300 kg/ha, are listed in Table 2 below.

Mean of organic matter content of *B. decumbens cv. Basilisk* was higher (P <0.5) compared to *B. ruziziensis cv. Kennedy*. This is because the dry level in *B. decumbens cv. Basilisk* was high and it was proportional to the concentration of organic matter in it.

Several varieties of dry matter production of *Brachiaria sp* with the provision of NPK fertilizer with a dose level of 0 kg/ha, 150 kg/ha and 300 kg/ha, are listed in Table 3.

<table>
<thead>
<tr>
<th>Fertilizer Level</th>
<th>Dry Matter Production (ton/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 kg/ha</td>
<td>0.97</td>
</tr>
<tr>
<td>150 kg/ha</td>
<td>1.16</td>
</tr>
<tr>
<td>300 kg/ha</td>
<td>1.11</td>
</tr>
</tbody>
</table>

Table 3 shows the different varieties of *Brachiaria sp* had no real influence on the production of dry matter. Dry matter production of *B. ruziziensis cv. Kennedy* was higher (1.28 tons/ha) compared with *B. decumbens cv. Basilisk* (0.97 tons/ha). Gobius et al. (2001) stated that the production of *B. decumbens cv. Basilisk* dry material was 9.57 tons/ha, while *B. ruziziensis cv Kennedy*, according to Tekletsadik (2004), was 18.44 tons/ha.

Novizan (2007) stated that the availability of phosphorus in the soil was determined by many factors, but the most important was pH of the soil. In the land with low pH (acidic), phosphorus reacts with ions of iron and aluminum. This reaction formed iron phosphate or aluminum phosphate which were not soluble in water and so it cannot be absorbed by plants. In the land with a high pH (acid), phosphorus reacts with calcium ions. This reaction formed calcium phosphate that were not soluble and cannot be used by plants. Thus, regardless to the soil pH, phosphorus fertilization will not take effect for plant to grow.
Conclusion

Based on the research results, the addition of NPK fertilizers of 150 and 300 kg/ha can increase dry matter content, crude protein and crude fat. Differences in Brachiaria sp varieties influenced the fresh production, dry matter and organic matter, *B. decumbens cv. Basilisk* had a dry matter content and organic matter higher rather than *B. ruziziensis cv. Kennedy*. The interaction between Brachiaria sp varieties and the best interaction of *B. decumbens cv. Basilisk* with fertilization level of 150 kg/ha.

KEYWORD: Brachiaria, Productivity, Fertilizer

**Table 1. Mean of dry matter level of two Brachiaria sp varieties with different level NPK fertilization**

<table>
<thead>
<tr>
<th>Varietas Brachiaria sp</th>
<th>Level of Fertilizer (kg/ha)</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>150</td>
</tr>
<tr>
<td><em>B. ruziziensis</em> cv. Kennedy</td>
<td>12.00±1.05</td>
<td>13.51±2.15</td>
</tr>
<tr>
<td>Average</td>
<td>13.56±2.46^ab</td>
<td>14.93±2.31^b</td>
</tr>
</tbody>
</table>

^a,b: Different superscripts on the same row show significant difference (P<0.05)

**Table 2. Mean of organic matter of two Brachiaria sp varieties with different levels of NPK fertilization**

<table>
<thead>
<tr>
<th>Brachiaria sp varieties</th>
<th>Fertilizer level (kg/ha)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>150</td>
</tr>
<tr>
<td><em>B. decumbens</em> cv. Basilisk</td>
<td>84.46±0.95</td>
<td>84.70±0.51</td>
</tr>
<tr>
<td><em>B. ruziziensis</em> cv. Kennedy</td>
<td>82.34±1.07</td>
<td>83.03±1.68</td>
</tr>
<tr>
<td>Mean^ns</td>
<td>83.40±1.47</td>
<td>83.87±1.47</td>
</tr>
</tbody>
</table>

^ns: non significant

**Table 3. Mean of dry matter production (tons/ha) of two varieties Brachiaria sp with different levels of NPK fertilization.**

<table>
<thead>
<tr>
<th>Brachiaria sp varieties</th>
<th>Fertilizer Level^ns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td><em>B. decumbens</em> cv. Basilisk</td>
<td>8.95±1.35</td>
</tr>
<tr>
<td><em>B. ruziziensis</em> cv. Kennedy</td>
<td>8.93±1.42</td>
</tr>
<tr>
<td>Mean^ns</td>
<td>8.94±1.38</td>
</tr>
</tbody>
</table>

^ns: non significant
REFERENCES
CERTIFICATE OF PRESENTATION

This is to certify that

Nafiatul Umami
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made an oral presentation on the following paper at

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(M-24-1)

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