



Hak Cipta Dilindungi Undang-Undang

### 3<sup>rd</sup> AINI INTERNATIONAL SEMINAR

In conjunction to 50<sup>th</sup> Anniversary Faculty of Animal Science  
Andalas University

THE ROLE OF NUTRITION AND FEED IN SUPPORTING SELF SUFFICIENT  
IN ANIMAL PRODUCTS, FOOD SAFETY AND HUMAN WELFARE  
Padang, 24 – 25 September 2013

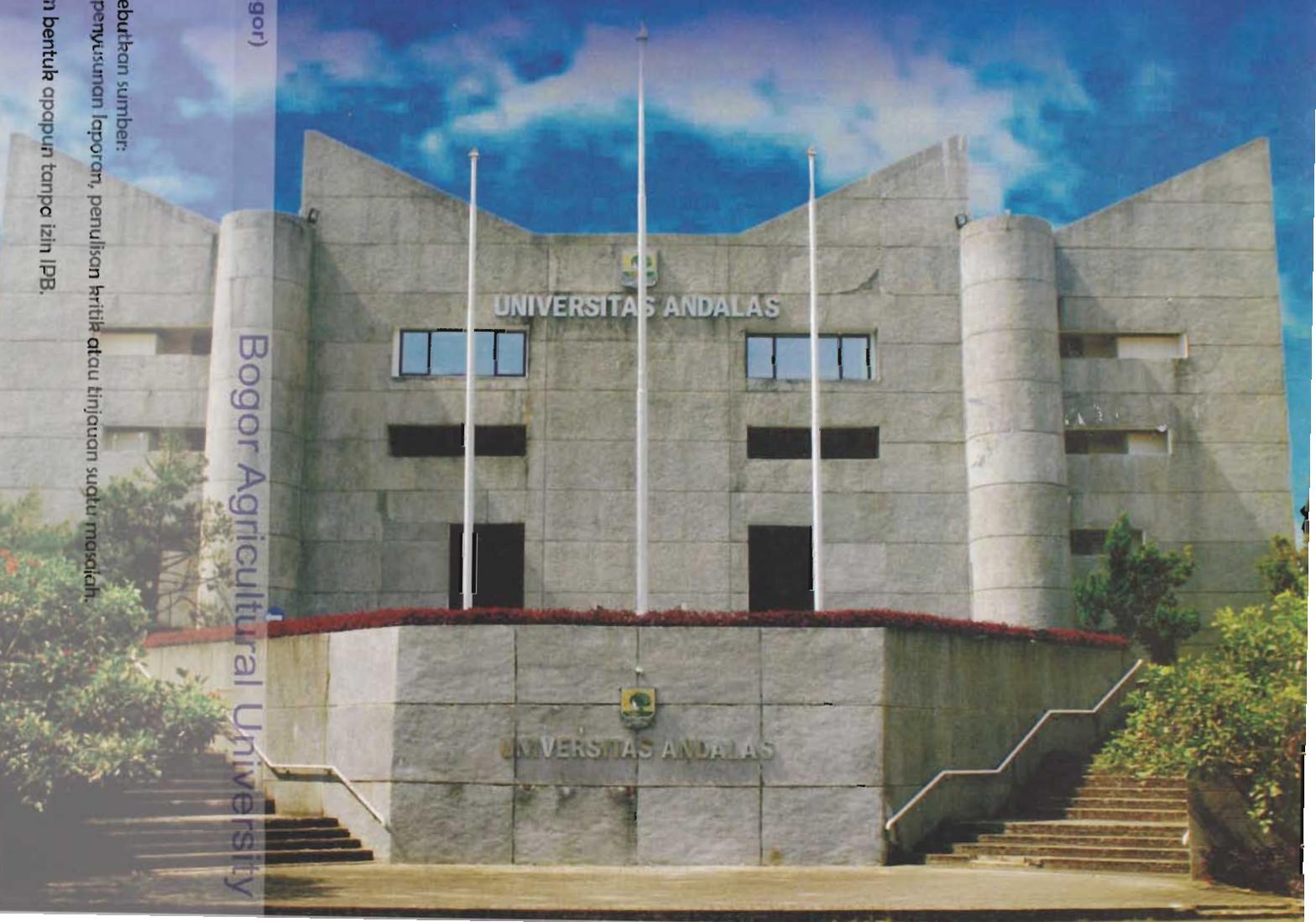


# PROCEEDING

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*"The Role of Nutrition and Feed in Supporting Self Sufficient in Animal Products, Food Safety and Human Welfare"*

**PROCEEDING**  
**3<sup>rd</sup> International Seminar and 9<sup>th</sup> Biennial Meeting of AINI**  
**"The Role of Nutrition and Feed in Supporting Self Sufficiency Animal**  
**Products, Food Safety and Human Welfare"**  
**in conjunction with**  
**the 50<sup>th</sup> Anniversary of the Faculty of Animal Science**  
**University of Andalas, Padang West Sumatera**  
**Grand Inna Muara Hotel, Padang 24-25 September 2013**

**THE COMMITTEE**

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Dr. Ir. Khasrad, M.Si  
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SCIENTIFIC PROGRAM	:	Indry Zelita Suci, S.Kom Dr. Ir. Irsan Ryanto H Dr. Ir. Ade Djulardi, MS Drh. Yuherman, M.S, Ph.D Ir. H. Fuad madarisa, M.Sc Ir. Harnentis, MS Lendrawati, S.Pt., M.Si
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## FOREWARD President AINI

*Assalamu 'alaikum Wr. Wb.,*  
The Honourable Rector of The University of Andalas,  
The Dean Faculty of Animal Science, University of Andalas  
Distinguish guests, participants, ladies and gentlemen,

First of all, on behalf of the Indonesian Animal Nutritionist and Feed Scientist Association (AINI), I would like to extend our warmest welcome, and indeed it is a great pleasure to see you all in this room, participating in the 3<sup>rd</sup> *International Seminar and 9<sup>th</sup> Biennial Meeting of AINI* in conjunction with the 50<sup>th</sup> anniversary of the Faculty of Animal Science University of Andalas, Padang West Sumatera. AINI that was firstly established in 1996 with the objective to gather all of the animal nutrition and feed scientists in Indonesia permitting to the exchange of knowledge and experiences under spirit of brotherhood, to stimulate the advancement of science and technology in nutrition and feed science, thus benefiting to the competitiveness of livestock agribusiness.

Since its establishment 1996, AINI has been conducting regularly the biennial scientific meeting. From 2007, the scientific meeting was upgraded to the International level and the first International seminar was conducted at Jenderal Sudirman University, Purwokerto Central Java and then the second International seminar was held in Padjajaran University, Bandung West Java, while this third event is conducting here with the theme **"THE ROLE OF NUTRITION AND FEED IN SUPPORTING SELF SUFFICIENCY IN ANIMAL PRODUCTS, FOOD SAFETY AND HUMAN WELFARE"**

Distinguish guests, participants, ladies and gentleman,

The role of feed and nutrition is primordial in the livestock agribusiness, not only due to the fact that more than 70% of production cost is coming from the feed cost, but also the feed safety that affect the food safety is becoming the great issues in recent years and become a great concern by many countries in the world. Animal products such as egg, meat and milk are subjected to the government policy to reach the self sufficiency. Indonesian government has payed attention and put high priority especially in meat self sufficiency for 2014. Unfortunately, effort made by the government ie. Ministry of Agriculture since many years has facing now the difficulty to succeed, due to some reasons such as the meat price volatility, and also the low exchange rate of rupiah to the US dollar at this time being. Indeed, the demands on the animal products will be increasingly in the future as the population and income per capita are growing. We should take a part and do our best to support the government policy in fulfilling the food of animal products, quantitative and qualitatively. In this regards, role of nutrition and also Nutritionist and Feed Scientist are very important.

I would like also to take this opportunity to share the idea with all you, that AINI as the organization of scientist, to have a international scientific journal is a must. The journal deals with all aspects of nutrition and feed issues in tropical conditions. The Management board of AINI has taken the decision for revitalizing the AINI Journal to become the Journal of Nutrition and Feed Science, internationally recognized, by involving the International committee of lecture as the reviewers. To this end, we need



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fully your support and encourage the scientists especially the young scientists to publish their work in English. The accomplishment of this task will bring the association be more respected in national and international level.

Distinguish guests, participants, ladies and gentleman,

For this opportunity, I should express my sincere thanks to the Dean of the Faculty of Animal Science, University of Andalas, the organizing committee, sponsors, and all party that cannot be listed since we are deeply in debt to all of your effort and sacrifice to the success of this seminar. Our sincere thanks must go to the Directorate General for Higher Education Department of National Education for the grant awarded. For our invited speakers, Prof. Tamo Fukamizo (Kinki University, Japan), Dr. Robert L. Payne (Evonik-US), Dr. Yuwares Ruangpanit (Thailand), Prof. Abdul Razak Alimon (UPM Malaysia), Prof. Yose Rizal (University of Andalas, Indonesia), Prof. Ali Agus (University of Gajah Mada, Indonesia), Prof. Suhubdy (Mataram University, NTB) we are indebt to your effort and your participation in this event. Your views will enlighten and inspire how to empower our local feed resources in sustaining the feed security for the future. Also, on behalf of the AINI, I must express my deepest gratitude to the Director General of Livestock Services Department of Agriculture for his willingness to give the key note speech to this seminar.

Distinguish guests, participants, ladies and gentleman,

I hope you will have the fruitful meeting and gaining many new ideas and perspectives to be developed in the future. I do hope also, we will see you again in the 4<sup>th</sup> International seminar and X<sup>th</sup> Biannual meeting 2015 that will be hosted by AINI member and colleagues from Sam Ratulangi University, Manado, North Sulawesi as the organizing committee.

Finally and surely, please enjoy your stay with west Sumatera culture and nature, tradition and hospitality, in addition to your scientific activities. Thank you,

*Wassalamu 'alaikum Wr. Wb.*

Padang, September 24<sup>th</sup>, 2013

President AINI

Prof. Ali Agus

Bogor Agricultural University

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## FOREWORD ORGANIZING COMMITTEE

*Assalamu'alaikum Wr. Wb.,*  
The Honourable Rector of The University of Andalas,  
The Dean Faculty of Animal Science, University of Andalas  
Distinguish Guests, Seminar Participants, Ladies And Gentlemen,

First of all, we are very grateful for Allah the Almighty, who has allowed us to get together in the prestigious 3<sup>rd</sup> AINI International Seminar which is held by the Faculty of Animal Science, University of Andalas in conjunction to celebrate the 50<sup>th</sup> Anniversary of the Faculty of Animal Science, collaborated with Indonesian Association of Nutritionist and Feed Scientist (AINI). We would like to welcome all participants who have come from different provinces in Indonesia, and especially to our distinguished guests and participant from overseas (USA, Japan, Thailand, Malaysia, Philippine and Australia).

The animal protein consumption of the people in Indonesia and other developing countries around the world as well is still low. The Indonesian Government has performed many efforts to increase this animal protein consumption. One of them is through the launching of a program called the self sufficient in beef (program swasembada daging sapi = PSDS), that has been targeted to be achieved in 2014. Besides, other attempts are also to develop poultry and other animal industries that have contributed to the fulfillment of animal protein requirement. However, based on the animal industry condition nowadays it would be rather complicated to achieve it, due to the low in farm animal productivity in Indonesia. Among the problems of low in animal productivity are the nutrition and feed they obtain during their life cycles. Besides, the price of feed for animal industries could reach 60 to 70% of the total cost of animal production. Indonesia has very limited range land for cattle grazing and limited feed sources for poultry feeding. The cattle feeding are very dependent on the utilization of agriculture waste/by-product as the source of feed. Most of these available feedstuffs are low in quality, so that they require further processing before feeding them to cattle. Meanwhile, the poultry and other farm animal feeding are depending on imported feeds. The other problem is the concern in utilization of in-organic feedstuffs or feed additives for growing farm animals.

The theme of this seminar is very relevance to the nowadays national as well as international issues of feeding safety feed for livestock and poultry, and conserving nutritious, safety and hygienic food for human health. This nutritious, safety, hygienic and healthy food of animal origin will be obtained from the high quality of feed that is fed to animals. The feed and food processing technology will support the high quality of feed and food. This 3<sup>rd</sup> AINI International Seminar on nutrition and feed is held to collect the information and to share the ideas from nutritionists, scientist and practitioners on the nutrition, feed processing technology and its utilization for producing high quality of feed and food which are available in other part of the world to contribute to the human welfare.

Prof. Dr. Novirman Jamarun  
Chairman of the Organizing Committee

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## WELCOME SPEECH

**Rector of Andalas University**

Bismillahirrahmaanirrahim,  
Assalamu'alaikum wrwb, Peace be with you!  
Your Excellency, Governor of West Sumatra Province.  
Your Excellency, Chairman of House of Representative of West Sumatera Province  
The Honorable, Dr. Mursyid Ma'sum, M.Agr, Director of Animal Feed, Direktorat General  
of Livestock and Animal Health, Ministry of Agriculture.  
The honorable, The Chairman of Indonesian Association of Nutritionist and Feed  
Scientist ( AINI ), Prof. Dr. Ali Agus DAA, DEA, from Gajah Mada University.  
Honorable guest, the Dean of The Faculty of Animal Science.  
The Honorable guests all keynote speaker.  
Seminar Committees, Participants, Ladies and Gentlemen,

**Good evening.**

First of all, let us say a merciful for Allah the Almighty who has given us a chance to meet each other at this 3<sup>rd</sup> AINI International Seminar which is held by the Faculty of Animal Science University of Andalas in conjunction to celebrate of 50<sup>th</sup> Anniversary Faculty of Animal Science, Andalas University.

On this occasion, I welcome all of the seminar participants who come from different places in the world, as well as participants from different uiversities and agencies in Indonesia.

On this opportunity, I would like to introduce to all of you about the University of Andalas. It was the oldest university in Indonesia, outside the Java Island that was founded in 1956. This university has 15 Faculties with 38 study programs for Sarjana degree, and 34 Graduate Study Programs for Master's and Doctor's degrees. The Faculty of Animal Science is one of the faculties at the University of Andalas which was established in 1963. I am very proud of this International seminar, which is conducted by the Faculty of Animal Science.

It indicates that the Faculty of Animal Science, University of Andalas, has the capability to create a link or a network with national as well as international level institutions, in which it is a kind of initiation toward the world class university.

**Ladies and Gentlemen,**

From this 3<sup>rd</sup> AINI International Seminar, I hope that it will result in the fruitful thoughts and brilliant ideas which could be implemented by the government and animal industrial community for the development of the Animal Feed industries in Indonesia as well as in West Sumatra. The Faculty of Animal Science University of Andalas plays a role in the development of feed industries in cooperation with the government, and livestock as well as animal nutritionist organizations.

Feed Industries contribute to the fulfillment of animal development in Indonesia because Feed is one most important factors to develop animal production and animal population and with cheap in price of feed will give high benefit could be reached by the



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farmer. The development of feed and animal industries needs science and technology, and through this seminar, it is hoped that the scientists from all over the world could contribute the information and technology in disciplines in feed sciences.

### **Ladies and Gentlemen,**

This seminar is in concomitant with the 57 year University of Andalas, and the 50 year Faculty of Animal Science Anniversaries. Considering the age of this institution, it is the appropriate time for this institution to play its role at the international level. The progress toward the world class university is a dream of every institution, including the University of Andalas. That is why I hope that this international seminar could be performed routinely, so that the development of science and technology in the field animal science could always be monitored and implemented by the animal community in Indonesia.

Finally, I would like to address my special thanks to the committees who have work very hard to prepare this seminar, congratulation and good luck for all of you.

**Wassalammualaikum wr.wb.**

Dr. Werry Darta Taifur, SE, MA  
Rector of Andalas University



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## **WELCOME SPEECH** **Governor of West Sumatera**

Assalamualaikum. ww

Your Excellency, Chairman of House of Representative of West Sumatera Province. Ir. Yulteknil, MM

The Honorable, Dr. Mursyid Ma'sum, M.Agr, Director of Animal Feed, Direktorat General of Livestock and Animal Health, Ministry of Agriculture.

The honorable, Prof. Dr. Ali Agus DAA, DEA, The Chairman of Indonesian Association of Nutritionist and Feed Scientist ( AINI ) from Gajah Mada University.

Honorable guest, the Rector of the University of Andalas.

The Honorable guests all keynote speaker.

Honorable guest, the Dean of The Faculty of Animal Science.

Seminar Committees, Participants, Ladies and Gentlemen,

**Seminar Committees, Participants, Ladies and Gentlemen,**

First of all we are very grateful for Allah the Almighty, who has allowed us to get together in the prestigious 3<sup>rd</sup> AINI International Seminar which is held by the Faculty of Animal Science University of Andalas in conjunction to celebrate of 50<sup>th</sup> Anniversary, Faculty of Animal Science, Andalas University.

I would like to say 'welcome' to all of participants who have come from different areas in Indonesia, and especially to the participants from several countries (USA, Malaysia, Thailand, USA and Japan ).

West Sumatra is one of 33 provinces in Indonesia which is also called "Ranah Minang" or Minang Area, because this area mostly inhabited by Minangkabau ethnic. This province is well known with its beautiful scenery and culture, because it possess Sianok canyon, marvelous beach in Mentawai Island with its high wave that is suitable for surfing, gorgeous Harau Valley, four beautiful lakes (Singkarak, Maninjau, Upper and Lower Lakes), and several other places for tourism. We have two international regular events, the first is Tour de Singkarak, and the second is Padang International Dragon Boat competition. Tour de Singkarak, a bike racing event every year followed by many bicyclers from all over the world, got its name from this lake's name 'Singkarak'.

The population of West Sumatra province is approximately 4 million people who mostly are moslems. Besides, Ranah Minang also well known with its specific hot and spicy foods. One of the menus is RENDANG, which is the most delicious food in the world. Rendang is made of varieties of meat (beef, chicken, or egg) which is mixed up with coconut milk, chili, and other ingredients. That is why, after this seminar I suggest you to spare your time visiting some of those beautiful and marvelous places while enjoying the specific menu I mentioned.

Furthermore, I would like to address that this 3<sup>rd</sup> AINI International Seminar is an important event for us, because it is a place where the experts from all over the world get together, informing their research findings to the others and sharing the ideas in order these findings and ideas to be useful for the development of science and technology in animal nutrition. The information from this seminar will be very useful for the development of animal industry in West Sumatra, Indonesia as well as in other countries around the world.



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**Ladies and Gentlemen,**

The target of the Indonesian Government nowadays is to achieve the self-sufficient in meat in 2014 in order to fulfill the demand for animal protein for the Indonesian people. For supporting the achievement of this target, the West Sumatra province is implementing a program called "Satu Petani Satu Sapi" or one farmer one cow which is funded by government and private. The purposes of this program are to motivate farmers to raise cattle, to accelerate the increase in the population of cattle, to accelerate the achievement of target in fulfilling the demand for animal protein, to vary the source of income for farmers, and to increase the farmers' income.

**Ladies and Gentlemen,**

Finally, I hope this seminar will produce the fruitful thoughts which could be implemented in the development of animal industry around the world as well as in Indonesia. Please enjoy this seminar, congratulation to the 50<sup>th</sup> Anniversary Faculty of Animal Science, University of Andalas, and I wish it will be continued with the other international seminars in different field.. Good luck for you all!!! And by saying:

**Bismillahirrahmaanirrahim, I officially open this seminar.**

**Wabillahitaufik walhidayah, Wassalamualaikum warahmatullahi wabarakaatuh.**

**Governor of West Sumatera Province**

**Prof. Dr. Irwan Prayitno, PSi, MSc**

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## SEMINAR PROGRAM

TIME	ACTIVITIES	PIC	LOCATION
	Participants arrive in Padang	Transportation and Accommodation	Airport and Hotels
19:00–22:00	<b>Opening Ceremony and Welcome Dinner</b> Welcome address by Chairman of the 3 <sup>rd</sup> AINI International Seminar (Prof. Dr. Novirman Jamarun) Welcome address by President of AINI (Prof. Dr. Ali Agus) Welcome address by Rector of Andalas University Welcome address by Governor of West Sumatera Province Inaugural of Regional Representative of AINI	MC Chairman  President of AINI Rector Unand Governor  AINI	Governor House, Jl. Sudirman, Padang

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**DAY-1 (WEDNESDAY, SEPTEMBER 25, 2013)**

TIME	ACTIVITIES	PIC	LOCATION
08:00 – 08:30	Re-registration	Secretariate	Assembly Hall
<b>08:30 – 12:30 KEYNOTE SPEAKERS</b>			
08:30 -9:00	<b>Dr. Ir. Mursyid Ma’sum, M.Agr (Director of Animal Feed, Directorate General of Livestock and Animal Health Services, Ministry of Agriculture - Indonesia)</b> Title: “Policy And National Program For Feed Development”	<b>Moderator : Dr. Maria Endo Mahata</b>	<b>OMBILIN HALL</b>
9:00 – 9:30	<b>Prof Dr. Tamo Fukamizo (Kinki University Japan).</b> Title: “The Mode of Action of Chitinolytic Enzymes: Production of Bioactive Oligosaccharides as Animal Nutrients”	<b>Dr. Maria Endo Mahata</b>	
9:30 – 10:00	<b>Dr. Yuwares Ruangpanit (Kasetsart University,Thailand)</b> Title: “Improving Egg Nutritional Value By Dietary Marine Sources – A Current Update”	<b>Dr. Maria Endo Mahata</b>	
10:00 – 10:30	<b>Prof. Dr. Yose Rizal (Unand, Indonesian)</b> Title: “The Utilization of Juice Waste Mixtures in Poultry Diets: A Review”	<b>Dr. Maria Endo Mahata</b>	
10:30 – 11:00	<b>Prof Dr Abdul Razak Alimon, Universiti Putra Malaysia, Malaysia)</b> Title: “Utilization Of Herbs As Growth Promoters In Animal Feed”	<b>Dr. Rusmana Ningrat</b>	
11:00 – 11:30	<b>Dr. Robert L. Payne, Ph D, PAS (Evonik – US)</b> Title: ‘ <b>The Role Of Amino Acids In Sustainable Poultry Production</b> ’	<b>Dr. Rusmana Ningrat</b>	
11:30 – 12:00	<b>Prof. Dr. Suhubdy Yasin( University of Mataram, Indonesia)</b> Title: “ Rangelands and Pastures of Indonesia for Ruminant Production: a Poor Attention and Neglected Resources “	<b>Dr. Rusmana Ningrat</b>	
12:00 – 12:30	<b>Prof. Dr. Ali Agus, DAA, DEA (University of Gajah Mada, Indonesia).</b> Title: “Food And Feed Safety Issues In Indonesia : Reducing Mycotoxins Toxicity And Its Carry Over From Feed Into Animal Products”	<b>Dr. Rusmana Ningrat</b>	
<b>12:30 –13:30</b>	<b>LUNCH BREAK</b>		

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**SESSION 1. RUMINANT NUTRITION (ROOM OMBILIN 2-3)**

**CHAIR: DR. IRSAN RYANTO H, UNAND, INDONESIA**

1	13:40– 13:50	Estimation of Rumen Microbial Nitrogen Supply Based on Purine Derivatives Excreted in the Urine of Kejobong and Bligon Goat Feed by King Grass and Peanut Straw, <i>Yusiati, L. M., and C. Hanim, UGM, Indonesia</i>
2	13:50 – 14:00	The Effect Of NDF Ratio in the Diet on the Performance of Philippine Native Goats ( <i>Caora hicus</i> Linn), <i>Nugroho, D., C.C. Sevilla, AA. Angeles, F. Setyawatie, Animal Science and Dairy Cluster, UPLB, Philippine</i>
3	14:00 – 14:10	Meat Physical Properties of Local Lamb Fed Urea-Impregnated Zeolite Ration, <i>Kardaya, D., E. Dihansih, D. Wahyuni, Djuanda University, Bogor, Indonesia</i>
4	14:10 – 14:20	In vitro study of <i>sardinella lemuru</i> oil based calcium-soap supplementation effects on the sheep’s rumen digestibility <b>Asep Sudarman</b>
5	14:20 – 14:30	Milk Composition Of Etawah Crossbred Goat Fed Forage And Leaves Pellet <i>Suryanindyah, Y. Y., N. Umami, Nurliyani, Y. S. Muthoharotin, Y. P. Oktaviani, UGM, Indonesia</i>
6	14:30 – 14:40	Rumen fermentability and digestibility of lingzhi ( <i>ganoderma lucidum</i> ) and organic chromium supplementation in high and low forage rations <b>Dwierra Evvyernie<sup>1</sup>, Toto Toharmat<sup>1</sup>, Sumiati<sup>1</sup> and Dian Astriana<sup>1</sup></b>
7	14:40 – 14:50	Ruminal Degradation Characteristics Of Maize ( <i>Zea Mays</i> ) Leaves, <i>Rusdi, Mustaring, M. Salman, Animal Husbandry Dept, Tadulako University, Palu Indonesia</i>
8	14:50 – 15:00	The Effect Of Concentrate Offered In Ratio Based On Rice Straw To The Performance Of Bali Cattle, <i>Trisnadewi, S., T. G. O. Susila, I W. Wtjana, Faculty of Animal Husbandry, Udayana University, Bali</i>
9	15:00 – 15:10	Enhancing Performance of Sheep by Feeding Corn Leaf Biscuit. <i>Yuli Retnani, Sobri, D. K. Putra, and T. Toharmat, IPB Bogor, Indonesia</i>
10	15:10 – 16:20	Effect of Black Tea ( <i>Camelia sinensis</i> ) Waste on Rumen Degradation of Feed Protein, <i>Kurniawati, A., B. Nugroho and C. Hanim, UGM Indonesia</i>
11	15:20 – 15:30	Supplementation of Solid Ex-Decanter Multi-Nutrient Block on Simbrah Breed Weaned Calves Performances as Integrated Farming System with Palm Fruit Agroindustry, <i>Fariani, A., A. Abrar, G. Muslim, E. D. Y. Astuti and L. Warly, Sriwijaya University, Palembang, Indonesia</i>
	16:50 – 17:00	CLOSING CEREMONY AT OMBILIN 2-3
		FAREWELL DINNER AT MAJOR HOUSE OF PADANG CITY

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“The Role of Nutrition and Feed in Supporting Self Sufficient in Animal Products, Food Safety and Human Welfare”

**SESSION 2. NON-RUMINANT NUTRITION (ROOM ANAI 1-2)**

**CHAIR: PROF. DR. KHALIL AND PROF. DR. YUSRIZAL, MSC, UNAND AND UNJA, INDONESIA**

1	13:30 – 13:40	Productivity Of Local Chicken In Growth Periods And Carcass Characteristics By Inclusion Of <i>Moringa Oleifera</i> Leaves Meals In The Diets <i>Hafsah, S. Sarjuni, T. Riske, I. Kumbok</i>
2	13:40 – 13:50	The Effect Of Palm Kernel Meal Contain Probiotic To Reduce The Fecal Ammonia Emmission In The Laying House, <i>Yusrizal, F. Manin, Yatno and Noverdiman, University of Jambi, Indonesia</i>
3	13:50 – 14:00	Contribution Of Lysin And Calcium Of Azolla Microphylla On Egg Shel Calcium Deposition In Arab Hen, <i>Wulandari, E., C., R.H. Prawitasari, N Suthama, W. Murningsih, V.D Yuniato, I. Estiningdriati and H.I. Wahyuni, Agriculture Diponegoro University, Semarang, Indonesia</i>
4	14:00 – 14:10	Japanese Quail Eggs Quality Fed Fermented <i>Jatropha Curcas</i> Meal, <i>Sumiarti, R. Mutia, and R. Khalim, IPB Bogor, Indonesia</i>
5	14:10 – 14:20	Evaluation in the presence of black tea waste extract on different level of energy-protein ratios in the performance and carcass parameters of broiler <i>Dilla marestia fassah<sup>1</sup>*, supadmo<sup>2</sup> and rusman<sup>3</sup></i>
6	14:20 – 14:30	Efforts for the meat quality of bali ducks through offering purple sweet potato ( <i>ipomoea batatas</i> l) fermented <i>aspergillus niger</i> in diets <i>Tjokorda gede belawa yadnya, ida bagus sudana, i gede mahardika and i m. Mastika</i>
7	14:30 – 14:40	Effect of avocado seed meal and fermented of banana peel meal to laying quail <i>Hera dwi triani, ade djulardi, ahadiyah yuniza</i>
8	14:40 – 14:50	Layer Ducks Performances Fed Katuk Leaf Meal, <i>Hermana, W., M. Septiana and Sumiarti, IPB Bogor, Indonesia</i>
9	14:50 – 15:00	The Profile Of Corn-Cob Nutrient As Prospective Poultry Feed In Upper And Lower Land Area In West Sumatra <i>Maria Endo Mahata, Ahadiyah Yuniza, Nuraini I and Yose Rizal</i>
10	15:00 – 15:10	Performance of Broiler Chicks Fed Waste Canned Oil Fish in Ration. <i>Jola J.M.R. Londok, John E.G. Rompis dan Youdhie H.S. Kowel. Fakultas Peternakan Unsrat Manado</i>
11	15:10 – 16:20	The dynamics of indigenous lactic acid bacteria probiotics on carcass yield, abdominal fat And intestinal morphology of broilers <i>Sri Harimurti, Miftahul Huda, and Anisa Dwi Kistiani</i>
12	15:20 – 15:30	The effects of xylanase supplementation on meat quality, carcass recovery and blood cholesterol in broilers fed on wheat-based diets <i>Chusnul hanim, lies mira yusiati, ali wibowo, and muhamad nur cahyanto</i>
13	15:30 – 15:40	Digestive organ's growth of local duck fed high dietary fiber during post-hatch: effect on allometric measurement <i>Hanny Indrat Wahyuni, Istna Mangisah, Nyoman Sutham and Maulana Hamonangan Nasution</i>
	17:30 – 18:00	CLOSING CEREMONY AT OMBILIN 2-3
	19:00 – 22:00	FAREWELL DINNER AT MAJOR HOUSE OF PADANG CITY

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“The Role of Nutrition and Feed in Supporting Self Sufficient in Animal Products, Food Safety and Human Welfare”

**SESSION 3. FEED SCIENCE AND TECHNOLOGY, PASTURE AND RANGE LAND, NUTRITION AND REPRODUCTION, SOCIO-ECONOMIS OF FEED AND FOOD (ROOM OMBILIN 1)**

**CHAIR: PROF. DR. MARDIATI ZAIN, MS, UNAND, INDONESIA**

1	13:30 – 13:40	Effect of Somatotropin Hormone on Macroscopic and Microscopic Semen Quality of Simbrah Breed Bulls <i>Gatot Muslim, A. Fariani, A. Abrar, E. D. Y. Astuti and L. Warly</i>
2	13:40– 13:50	Effect of vegetable and animal-derived ingredients on the physical pellet properties of extruded feed <i>Suluh nusantoro, erfani kustiawan, and nurkholis</i>
3	13:50 – 14:00	Isolation and identification of lactic acid bacteria from feces of young calves as a potential Candidate of probiotic <i>Ismail Jasin, Z. Bacrudin H. Hartadi</i>
4	14:00 – 14:10	Effect Of Shade On Growth And Productivity Of Torbangun, <i>Karti, IPB, Bogor, Indonesia</i>
5	14:10 – 14:20	Evaluation Of Availabiliy And Quality Of Forage At Limau Manis Campus Of Andalas University, Padang, West Sumatra, <i>Khalil, Unand, Indonesia</i>
6	14:20 – 14:30	Feed Intake And Efficiency In Mice ( <i>Mus Musculus</i> ) Given Treated – <i>Jatropha Curcas</i> L. Seed Meal, <i>Tjakradidjaja, Anita S., P. H. Siagian And Hadriyanah IPB, Bogor, Indonesia</i>
7	14:30 – 14:40	Effect Of The Extracted Cinnamin Stick And Ground Cinnamon Stick On The Rancidity Of Palm Oil Decanter Meal, <i>M. Afdal, A. Kasim, Ar. Alisman and N. Abdullah, University of Jambi, Indonesia</i>
8	14:40 – 14:50	Feed Intake, Nutrient Digestibility and Blood Glucose of Sheep Supplemented with Organic Chromium From Fungi <i>Ganoderma lucidum</i> . <i>Agustina, F., D.Evyvernie, D.Taniwiryono, S.Tarigan , T.Toharmat</i>
9	14:50 – 15:00	Analisis Performances Of Egg Poultry Industries In 50 Kota Regency As A Based Sector Of West Sumatra <i>Rahmi, E. W. Sartika. Unand, West-Sumatra</i>
10	15:00 – 15:10	Comparison Of Corn Stover Nutrient Content In Lower And Upper Land Areas In West Sumatra <i>Rusmana W. S. Ningrat1, Irsan Ryanto1, Montesqrit1and Giovani M. Turchini2</i>
11	15:10 – 16:20	Nutrients intake and their relation to milk production and qualities under traditional and Small scale indonesian dairy farms enterprises <i>Despal*, A. Lestari, Y. Destianingsih, Z. Malyadi, H. Hartono, L. Abdullah</i>
12	15:20 – 15:30	Utilization Onggok Enriched With Egg Powder To Making Nutritious Instant Food <i>Sukma, A. K. Sayuti, Novelina. UNAND West- Sumatra</i>
13	15:30 – 15:40	Study On In Vitro Digestibility Of Soaked Oil Palm Fiber By Filtrated Oil Palm Fruit Bunch Ash <i>Ari L. Darmawan, Asep Irawan, Tidi Dhalika, Ana R. Tarmidi, Mansyur, Atun Budiman, Kurnia A. Kamil and Iman Hernaman</i>
14	15:40 – 15:50	Productivity Of Bali Cattle Based On Scrotum Size, Body Weight And Feed Quality <i>Abyadul Fitriyah1, Nurul Hilmia2, Lalu Muhammad Kasip3, Sukmawat1, Totok.B.Julianto2</i>
15	15:50 – 16:00	Quality of rennet from rabbit stomach during cold and frozen storage <i>Nurliyani<sup>1</sup>, Indratiningsih<sup>2</sup>, Mufti Tri Matra</i>
16	16:00 – 16:10	<i>IN VITRO</i> CULTURE FOR THE SUPPLY OF MATERIAL GENETIC TRANSFORMATION ON DWARF NAPIERGRASS ( <i>Pennisetum purpureum</i> cv. Schumach) <i>Nafiatul Umami</i>
17	16:10 – 16:20	Eggs rendang characteristic by addition of gambier catechin antioixidan <i>Deni novia, Afriani Sandra Indri Juliyarsi Anwar Kasim and Azhari Nuridinar</i>
17:30 – 18:00		CLOSING CEREMONY AT OMBILIN 2-3
19:00 – 22:00		FAREWELL DINNER AT MAJOR HOUSE OF PADANG CITY

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"The Role of Nutrition and Feed in Supporting Self Sufficient in Animal Products, Food Safety and Human Welfare"

**POSTER SESSION (OMBILIN ASSEMBLY HALL)**

**CHAIR: PROF. DR. IR. NURAINI, MS AND PROF. DR. IR. YETTY MARLIDA, MS, UNAND, INDONESIA**

**12:00 – 14:00**

P-01	The effect of concentrate ratio based on palm kernel cake on pH on, VFA and NH3 In-Vitro Rumen. <i>Arief, N. Jamarun, Elihasridas, F. Achmad</i>
P-02	Integrated Farming System With Empowerment Of Cattle Farmers Group In Village Kinomaligan. <i>F.H. Elly, A.Makalew, F.N.S. Oroh dan D. Polakitan</i>
P-03	The Effect Bioprocess of Banana Peels With The Different of incubation lenght and the source of Local microorganisms (MOL) on Crude Protein, Crude fiber and lignin content. <i>Tri Astuti and S. Amir</i>
P-04	The content of phytochemical and antibacterial activity of cinnamon leaf ( <i>Cinnamomum burmanii</i> ) and Noni Fruit and Leaf ( <i>Morinda citrifolia L</i> ) mixture extract to Replace Antibiotic. <i>Yuniza, A and Yuherman</i>
P-05	The Effect of Supplementation Lamtoro ( <i>Leucaena Leucocephala</i> ) Based on Rice Straw Amoniation Ratio on In-Vitro Rumen Characteristics. <i>Herawati, R., N. Jamarun, M. Zein, Arnim</i>
P-06	Dry Matter And Organic Matter Digestibility Of Java Wood ( <i>Lannea Coramandelic</i> ) Leaves By Use In Sacco. <i>Fatmawati</i>
P-07	Improving Quality Soybean Waste by Fermentation as Poultry Ration. <i>Mirnawati, Ade Djulardi and Helmi Muis</i>
P-08	Effect of total time marketing on microorganisms in cattle Meat Marketed In Padang Great Market, West Sumatera. <i>Yuherman, Eva Umar, and John Farlis</i>
P-9	The Application Of Science And Technology For Cattle Farmers Group For Improving Integrated Farming System In Village Ongkaw. <i>A.H.S. Salendu., F.H. Elly., M.A.V. Manese dan D. Polakitan</i>
P-10	Performances And Hematological Profile Of Broiler Under Heat Stress Fed Diet Containing Carica Papaya L. Leaf Meal And Curcoma Domestica Val. <i>Dwi Margi Suci, Dewi Apri Astuti, F.Kumala. Dewi and D. Kuncoro Sakti</i>
P-11	Mix Of Lingzhi ( <i>Ganoderma Lucidum</i> ), Organic Chromium And Roasted Soybean Evaluated As Feed Supplement For Laying Hen. <i>Tania Perdana Putri, Dwierra Evvyernie, Dwi Margi Suci And Muhammad Lukmannulhakim</i>
P-12	Fermentability And Degradation Of Concentrate Contents Dry Carboxylate Salt Or Methyl Ester In Rumen Liquid. <i>A.M. Tasse, E.B. Laconi, D. Agustina</i>
P-13	Comparative Analysis Of Nutrient Composition Of Different Sorghum Varieties After Ensilage Processes. <i>Awistaros Angger Sakti, A. Sofyan and H. Julendra</i>
P-14	Viability Of Lactic Acid Bacteria Isolated From Rumen Liquor On Molasses Mixture Medium. <i>Emad Damayanti, N. A. Hermawati, A. Pangastuti and A. Sofyan</i>
P-15	Effect Of Formic Acids In Silage Processing From Shrimp Head Waste As Animal Feed. <i>Mirzah, Montesqrit and Suslina A Latif</i>
P-16	Effects Of Saga Leaves And Yellow Leaves On Rumen Microbes And In Vitro Digestibility. <i>Dwierra Evvyernie, H. Ahmad Sukria, E. Harlina, E. Rachmi, A. Winarni And U. Nurjannah</i>
P-17	Flushing With Different Sources Of Energy Quality Ration On Reproductive Performance Local Sheep, <i>Khotijah, L., K.G. Wiryawan, K.B.Satoto, D. Diapari, N.B.Sitepu and N.E.K.Santi, IPB, Bogor, Indonesia</i>
P-18	<b>The use of <i>trichoderma harzianum</i> in the fermentation of tofu waste product</b> <i>Burhanudin Malik; Anggraeni; Sawarni Hasibuan; Rudiana<sup>1</sup></i>
P-19	Indigofera Zollingeriana Adaptation To Drought Stress And Mycorrhiza Inoculation <i>S. Sowmena), L. Abdullah), P.D.M.H. Kartib), D. Soepandic</i>
P-20	Effect Of Cocoa Pod And Cocoa Leaf On In Vitro Fermentation And Nutrient Digestibility <i>J. Rahman, M. Zain, and Erpomen</i>

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P-21	Effect Of Vitamin E Supplementation In The Extender On Frozen – Thawed Semen Preservation Of Pesisir Cattle <i>Zaituni Udin; Ferdinal Rhim; Jaswandi and Ayu Fadillah</i>
P-22	Green livestock development: the role of lactic bacteria for improvement and utilisastion Of total mixture forage <i>Zaenal Bachruddin<sup>1</sup>, Supadmo<sup>1</sup>, Lies Mira Yusiati<sup>1</sup>, Chusnul Hanim<sup>1</sup>, Asih Kurniawati<sup>1</sup>, Dimas Hand Vidya Paradhipta<sup>2</sup> and Mayansari<sup>2</sup></i>
P-23	The effects of roasted coriander seeds in the diet on carcass trait and cholesterol content of broiler <i>R.Mutia, R.G. Paminda, and N.Ramli</i>
17:30 - 18:00	CLOSING CEREMONY AT OMBILIN 2-3
19:00 - 22:00	FAREWELL DINNER AT MAJOR HOUSE OF PADANG CITY

**INVITED SPEAKERS**  
**Invited Speakers at 3<sup>rd</sup> AINI International Seminar,  
Padang, West Sumatera, Indonesia**



**Dr. Mursyid Ma'sum, M.Agr**

Director of Animal Feed, Directorate General of Livestock and Animal, Health Services.

**Prof Dr. Tamo Fukamizo (Kinki University Japan)**

graduated his Bachelor and Master course of Agricultural Chemistry of Kyushu University, Japan, in 1977 and 1980, respectively. He completed his Ph.D. in Kyushu University in 1983. Currently, he is a full professor of Enzyme Chemistry at Department of Advanced Bioscience, Kinki University, Japan. His research of interest is,

1. Crystal structure analysis of the chitinase-oligosaccharide complex
2. NMR analysis of the interaction of chitin-binding proteins
3. Calorimetric analysis of the interaction of chitin-binding proteins
4. Conversion of chitinase into a glycosynthase by protein engineering technique

5. Biomass conversion from fungal cell wall by enzymatic digestion  
Recently, in collaboration with Dr. Maria Mahata, University of Andalas, he successfully produced partially N-acetylated chitooligosaccharides, which might be used as animal food ingredients, directly from fungal cell wall. In today's his lecture, mechanism of oligosaccharide production from chitin and chitosan biomass will be presented, and the utilization of the products will be discussed.



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*"The Role of Nutrition and Feed in Supporting Self Sufficient in Animal Products, Food Safety and Human Welfare"*



**Dr. Robert L. Payne, Ph D, PAS (Evonik - US)**

Regional Director of Nutrition and Technical Services for Evonik Health & Nutrition. Rob joined Evonik-Degussa in 2004, and since that time, he has served Evonik's Health and Nutrition group as Animal Nutrition Services Manager, Technical Services Manager for US and Canada, and Director of Nutrition and Technical Services for North America. In 2011, Rob moved to Singapore to become Director of Nutrition and Technical Services for the Asia South region. As technical director, Rob is responsible for guiding Evonik's value-added technical services team, which provide tools and consulting for nutritional, analytical, and feed production issues. Rob has authored numerous peer-reviewed, popular press articles, and invited talks, and currently serves on the editorial boards for the Journal of Animal Science and Poultry Science.



**Prof. Dr. Ali Agus, DAA, DEA (University of Gajah Mada, Indonesia)**

Graduated from the Faculty of Animal Science, University of Gajah Mada in 1989, and completed his DAA, DEA (1993) and Doctorate (1996) from Ecole Nationale Supérieure Agronomique de Rennes (ENSA), Rennes, France in Nutrition and Physiology of Dairy Cattle He is also a member of National Feed Commission, Department of Agriculture, Republic of Indonesia. He published several books and articles in peer reviewed international journals, presented papers in international meeting and published in Proceedings. His research interest are in animal nutrition, feed toxicology, mycotoxins and community developments.



**Dr. Yuwares Ruangpanit (Thailand)**

graduated her Bachelor and Master in Animal Science from Kasetsart University, Thailand in 1992 and 1995, respectively. She completed her Ph.D. in Nutrition from North Carolina State University in 2004. Currently, she is a lecture of Mono-gastric animal nutrition at Department of Animal Science, Kasetsart University, Thailand. Her research of interest is nutritional evaluation and application of alternative energy and protein source for poultry, especially, a high fiber by-product from Agro-industry. Her responsible research also involves in the application of feed additive in mono-gastric animal under tropical conditions



**Prof. Dr. Abdul Razak Alimon (Malaysia)**

obtained his Bachelor of Science and Masters of Science in Agriculture from the Faculty of Rural Science, University of New England, NSW, Australia in 1971 and 1980, respectively, and completed his Ph.D degree in 1989 at University of Reading, United Kingdom. He is currently a Professor of Animal Nutrition at the Department of Animal Science, Faculty of Agriculture, Universiti Putra Malaysia. His current interest is in the utilization of herbs as growth promotants in poultry and also agricultural byproducts as animal feed.

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*"The Role of Nutrition and Feed in Supporting Self Sufficient in Animal Products, Food Safety and Human Welfare"*



**Prof. Dr. Yose Rizal (Indonesia)**

graduated from the Faculty of Animal Science, University of Andalas, Padang, West Sumatra, Indonesia with a Sarjana degree in 1981, and completed his Master and Ph.D degrees in Animal Nutrition, at the Department of Animal Science, University of Illinois, USA in 1987 and 1989. He is currently a Professor at the Faculty of Animal Science, University of Andalas, Padang, West Sumatra, Indonesia. Now, he is also responsible for the Quality Assurance at the University of Andalas. His area of interest is in the utilization of agriculture wastes/by- products for poultry feeds.



**Prof. Dr. Suhubdy Yasin (Indonesia)**

Is highly distinguish profesor in ruminant nutrition science, awarded as Ph.D. From the University of Queensland, Australia 2002. He was a fullbright visiting profesor at Utah State University, USA 2008/2009. He is Director a Research Center Of Tropical Rangelands and Grazing Animal Production Systems, Indonesia.

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## P-9. THE APPLICATION OF SCIENCE AND TECHNOLOGY FOR CATTLE FARMERS GROUP FOR IMPROVING INTEGRATED FARMING SYSTEM IN VILLAGE ONGKAW

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### Abstract

Development of agriculture and livestock mutual support and benefit, so that the integrated farming system provide great benefits for both. The problem cattle farmer groups of Maesa and LM Bahtera in the Village of Ongkaw not have the understanding and knowledge of cattle development in an integrated farming system between crops and coconut. Under these conditions, have made the empowerment of members of the group through the application of science and technology extention and training methods. Cattle business success is determined by three interrelated elements, namely breeding, feeding and management. Cattle farmer groups of Maesa and LM3 Bahtera has done cattle production process is integrated with corn and coconut. The success of these efforts depends on the characteristics of the cattle groups member of Maesa and LM3 Bahtera. The characteristics of the group mebers see their age and level of education. Land use under a coconut to forage also serves as acover crop. Group member of Maesa and LM3 Bahtera has responded well activities through the applications of science and technology extention and training. This is evident from the availability of grass in the fields have each member of the group and a land area of 0,3 Ha of coconut plantations. Other product have been produced in the form of silage and amoniasi and compost. The applications of science and technology through IbM can proceed if there is facilitation from the universities.

Key Word : Science and technology, cattle, integration, group

### INTRODUCTION

South Minahasa Regency has an area of 2120.80 km<sup>2</sup> which is divided into 20 districts and 200 villages, with a population of 289 476 inhabitants. The topography of the district is mostly a hilly area. Based on the geography of most of the villages are on the coast. This indicates that as one of the supporting South Minahasa regency many residents are categorized as poor. The number of poor people in this area amounted to 8.69% of the total poor population in North Sulawesi. Poverty in South Minahasa as a result of the high rate of population growth is not matched by availability of jobs. Unavailability of employment for cause reproductive age as a result of high unemployment and poverty is increasing.

The agricultural sector in South Minahasa sub sectors include food crops, plantations, livestock, fisheries and horticulture. Agricultural crops are dominated by rice, corn, peanuts, soybeans, cassava and sweet potatoes. Coconut plantations are also very dominant in this area. Land under coconut trees widely used by farmers planted maize, paddy fields and banana. Integrated farming systems showed good growth (BAPPEDA South Minahasa, 2006).

Agriculture for South Minahasa Regency has a very important position in the provision of food and a variety of other industrial raw materials. Livestock is

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one important part of South Minahasa people's lives, in addition to agriculture. Agricultural products such as maize, cassava, grasses, agricultural waste can be used as animal feed so that there is value added. In this case, it can be said indirectly that needs feed (forage and concentrate) for livestock can be met. In addition, livestock manure as waste organic indispensable as a source for plants. Useful organic fertilizers for soil fertility. Utilization of organic fertilizer from animal waste can increase agricultural productivity. Thus, livestock population increases, automatic meat production increased. Increased meat production is that farmers are directly perceived increase in income and welfare. Agriculture in this area is dominated by coconut plantations, while still dominated by farm livestock. Land under coconut trees used for food crops and forage. Crop waste is a source of cattle feed, cattle manure instead be used to increase soil fertility.

Sinonsayang districts is one of the districts in the South Minahasa are agropolitan. Commodity area is coconut with the highest cattle population (BAPPEDA South Minahasa Regency, 2006). In this district there are several farmer groups including cattle farmer group.

The groups that have been formed in the district are Sinonsayang crop farmer groups, pig farmer and cattle farmers groups. Ongkaw village is one of the villages in the district Sinonsayang, have formed farmer groups: the group of cattle farmers Maesa and LM3 Bahtera. LM3 Bahtera group formed in 2007 with the group's main program is seeding rice and corn farming. Maesa Group was formed in 2010 with the group program is composting. The second group was originally formed from the group The Bahtera Church Fathers. Maesa cattle farmer groups have been formed for the development of compost. The group has received financial from the central government for composting and in February 2011 has been building for composting.

LM3 Bahtera cattle farmer groups is a group who had received financial from the government to farm field activities undertaken are fattening and breeding. Cattle population in 2007 amounted to 25 heads have been increased to 44 head in 2011. Cattle farmer groups LM3 Bahtera started to form in 2007 with meetings every week on sunday, gathering and cattle operations. Farmer group Maesa started to form in 2010 and has received aid in the form of cattle some 30 tails.

The problem from LM3 Bahtera and Maesa cattle farmer groups in the village Ongkaw not have an understanding and knowledge of cattle development an integrated between farm crops and coconut. System integration is very profitable cattle farmer group members of LM3 Bahtera and Maesa. Straw and waste can be utilized by members of the group as a nutrient-rich feed. Straw and waste are very useful as a feed stock in the dry season. The problem straw / agriculture waste has not been used by members of the group. So in the dry season the group members have to find grass in the distant farmland. That group members do not have knowledge of handling waste and surplus when the harvest.

Based on the ideas and issues that have defined the priority issues that need to be handled by a members of LM3 Bahtera and Maesa cattle farmer group, as follows: (1) lack of knowledge of the group members on the provision of feed (forage) is continuous and quality, (2) lack of group members' knowledge about the use of hay and forage preservation, (3) lack of knowledge of the group members use the manure as fertilizer.

## MATERIALS AND METHODS

The application of science and technology has done for LM3 Bahtera and Maesa cattle farmer groups from July to October 2012. The application of science and technology activities have been carried out based on priority issues LM3 Bahtera and Maesa cattle farmer groups. The application of science and technology have been made through the empowerment of the group by using two methods:

### 1. Extension

In order to develop beef cattle farms in particular, extension has a very important role for the group. According to Abdullah (2008) extension particularly instrumental in strengthening farmer groups and an increase in the adoption of farm technology to farmers. Extension made to the cattle farmers in the village Ongkaw (group of LM3 Bahtera and Maesa) with the aim of changing the behavior of livestock farmers towards a better (Pambudy, 1999). Some of the philosophy of extension is: (1) extension program relying on farmers' needs, (2) extension is basically the process of education for adults who are non-formal. The goal is to teach farmers, improve their lives by his own efforts, as well as teaching farmers to use natural resources wisely, and (3) extension in collaboration with other organizations to develop individuals, groups and nations. Extension materials about forage management, maize and legume integration, preparation of rations, biogas production, business analysis, institutional strengthening and making recordings. While the media used are brochures and LCD.

### 2. Training

Having conducted extension to members of the group, further training for members of farmer group LM3 Bahtera and Maesa. Training is a practical application of the technology is in the form of introduction of grass dwarf, composting, silage making and ammoniation. Planting grass is integrated with coconut plantations.

## RESULTS AND DISCUSSION

Development of agriculture and animal husbandry in South Minahasa mutually supportive and beneficial, so that integrated farming systems provide great benefits for both. Development of sustainable farming can be done by developing a model of integration of coconut-cattle (Salendu and Elly, 2011). Further high integration of crops and livestock is often considered as a step forward (Rota and Sperandini, 2010). Integrated farming systems by Ahmed et al (2011) is the best farm system in terms of resources, efficiency, productivity, production and supply of food.

Livestock and crops are the main source of rural households. A nutrient-poor soils, high rainfall and lack of irrigation water, the region has a comparative advantage for the production of livestock. Cattle business is one of the reliable business cattle farmer groups LM3 Bahtera and Maesa in Ongkaw village. Cattle productivity can be improved by involving members of the group and the government. In connection with the above ideas have empowered the group members by providing extension and training. Extension materials on the integration of livestock and crops as well as matters relating to the management of cattle business. Educational events responded well by members of the group.

LM3 Bahtera and Maesa cattle farmer groups cattle production process is integrated with crops of corn and coconut. Some research indicates that the

application of farming systems CLS (Crop-Livestock System) increase production profits higher than the non-CLS. According Channabasavanna et al (2009) that the integrated farming system is very productive and profitable. This indicates that the integration of cattle with crop can benefit for the animals and plants. Elly (2008) and Salendu et al (2012) suggested that the income of the business is greater than the integrated the cattle-coconut businesses that are not integrated.

Cattle business success is determined by three elements are interrelated, ie seed, feed and management. The success of these efforts depends on the characteristics of the group members the cattle LM3 Bahtera and Maesa. Characteristics of the group members see their age and level of education.

Cattle business success is determined by the age of the group members. Age group members ranged from 30-69 years. The average age of the group members Maesa was 44.43 years. While the average age of the group members LM3 Bahtera was 45.10 years. This condition indicates that the age of members of the two groups is still considered productive. They have a strong enough physical ability to carry out farming activities. According Kiswanto et al (2004), the adoption of technology is closely related to business productivity. Further stated that age is a factor that can affect the productivity of beef cattle fattening.

The level of education ranged from primary school to high school level. Average education level Maesa group members are as much as 21.43% elementary school, junior high school level as much as 42.86% and 35.71% as much as the high school level. The average level of education for members of the group LM3 Bahtera are elementary level as much as 20%, 40% junior high and high school levels as much as 30%. This condition shows that the education level of the group members still considered low. It can be seen from the support home composting since being founded in 2010 by members of the group have not responded. Prior to any application of science and technology by the universities, members of the group have not produced compost. It means that the level of education influence the adoption of technology by the group members. According Kiswanto et al (2004), the higher the level of education that allows to change attitudes and behavior to act more rationally. This action provides an opportunity to be more successful in managing the farm.

Cattle owned by members of the group Maesa numbered 40 tail, while the members of the group belong to as many as 32 head LM3 Noah. Problems in the development of the cattle that forage is not available. Cattle consume grass field and agricultural waste to meet the forage needs. Alternatively, the cattle grazing in coconut plantations or other dry land and allowed to consume grass that grows wild. According to Muslim and Nurasa (2011) introduction of superior forage has actually been carried out by the government. In this condition the group members do not take advantage of the enclosure has been built with the help of the government (Ministry of Agriculture). Their reasons for the unavailability of forage fodder.

Standards / norms forage needs of livestock feed per cattle per day by Animal Unit under the Ministry of Agriculture (2010) are : adult cattle (1 AU) require as much as 35 kg of forage, heifers (0.50 AU) of 15-17.5 kg and calf (0.25 AU) of 7.5-9 kg / head / day. To meet the needs of the group members had to prepare the land for cattle forages.

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Application of science and technology that has been done is the introduction of quality forage in the lands that belong to each member of the group and the group owned land covering an area of 0.3 ha. A land area of 0.3 hectares of land is under a coconut tree planted dwarf grass (*Pennisetum purpureum cv mott*). Planting grass is very response by members of the group. It is evident from the grass that has been planted in an area of 0.3 ha and in the land of each member of the group.

If the land is under a coconut tree that used to grow quality grass then the income will be higher (Salendu, 2012 and Salendu et al, 2012). Land under coconut for forage also serves as a cover crop. Cover crops is an act of conservation at the time instead of the growing season (Rahim, 2006).

Group members have also been trained to weed preservation, namely silage. This is done to anticipate when there is excess production and can be used in the dry season. The existence of silage, cattle feed requirements can be met. Method for production of silage is: dwarf grass harvesting fresh cut 2-5 cm by group members using the cooper. The grass then put in an airtight plastic bag. Every 15 cm of fresh grass sprinkled with rice bran, and so forth until plastic bags filled and solid. Once the grass is filled solid, tightly closed plastic bag (a plastic bag tied). Making process for 21 days and after it opened to smell fragrant and slightly sour. Silage making this very response by members of the group.

Agricultural residues can also be used as a source of forage such as rice straw, leaves and cobs of corn, and others. Rice straw has a high fiber content and low energy levels so that its low digestibility values. This requires a treatment that is easily digested by the fermentation process (Kardiyanto, 2009). Method of making rice straw ammoniation is dry (water content of about 60%) was cut into pieces 2-5 cm. Straw that has been cut into pieces stacked in a plastic bag, and then trampled to solid. Then the straw is stacked in a plastic bag sprinkled with probiotics (SB) and urea in the ratio of each 6 kg for every ton of rice straw. To grow the probiotic then sprinkled water to 60% the moisture, which is indicated by the hand-wringing straw, then seen that the water in the palm of the hand as if he was about to drip means the water is enough. Stage was repeated again with a pile of 15 cm to a plastic bag full. After a closed plastic bag and tied then left for 21 days in a place protected from rain and direct sunlight. After 21 days of fermentation ready to be given to the cattle.

Maesa Group has obtained support house for composting. Cattle manure can be used as fertilizer for paddy fields. According to Kelvin (2005), the use of manure inputs by 10%, assuming *ceteris paribus* can increase production by 1.25%. Further stated that the manure can improve and maintain the diversity of living organisms and soil. The indication that the manure is needed to improve soil fertility. According Kariyasa and Pasandaran (2004), the use of anorganic fertilizers continuously and tend to cause a lot of excess agricultural land in Indonesia is not fertile conditions. Under this condition, the manure as organic fertilizer started to be used to substitute anorganic fertilizers. Manure of cattle by Menegristek (2000), is a source of nutrients that can improve soil structure so that it becomes more loose and fertile. Prasetyo and Suriadikarta (2006) states that the provision of organic matter from manure and crop residues to improve soil physical properties.

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Members of the group have been trained to make compost by using cattle feces that is the stable. Composting process has been carried out in the house compost. Composting method is as follows: at first made of beams and bamboo container measuring 2 x 1 x 1 m. Then dried rice straw stacked in the container 15 cm then put the dried cattle feces while being trampled so solid. EM4 then sown that has been mixed with water and sugar. Stages are repeated until the container is full and solid. Once the container is full, open beams and bamboo, then covered with a tarp and tied. A week later screened compost and this is done for 4 weeks.

After 4 weeks of composting has been opened and aerated. Good compost is already quite experienced weathering. It is characterized by a different color is the color of its constituent materials, odorless, low water levels and corresponding room temperature. Group members are preparing the ground for planting corn by utilizing compost. According to Elly et al (2008), cattle serve as a source of meat, as well as producers of fertilizer or compost to increase crop production. However, the weather does not currently support the planting of corn. In addition to corn crops, compost can be used as a source of income for the group members.

### CONCLUSION

Members of both groups (LM3 Bahtera and Maesa) have responded well to the activities applying science and technology through extension and training. This is evident from the availability of grass in the fields each member of the group and the land in the coconut plantation area of 0.3 ha. Another product that is produced, the silage and ammoniation and compost. The application of science and technology can be continued if there is guidance from college.

Suggestion given is that the concept of integrated farming system can be implemented to the maximum, then the members of the group were trained to make biogas not only in the form of extension. In developing compost needed intervention from the government, relating to the care and preparation of printing and packing machines.

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