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**National Cheng Kung University Hospital - TAIWAN**  
Bandung, 16<sup>th</sup> – 17<sup>th</sup> July, 2018

**Conference Book**  
**International Conference on Health Care**  
**and Management**

“Evidence to inform action on supporting and implementation of  
SDGs”

**Secretary Office :**

**STIKep PPNI Jawa Barat (Intitute of Nursing Science PPNI West Java)**

Jalan Ahmad IV No. 32 Cicendo, Bandung 40173

West Java – Indonesia

Phone: +62 22 6121914

*E-mail: [info@icon-stikeppni.org](mailto:info@icon-stikeppni.org)*

*Website: [www.icon-stikeppni.org](http://www.icon-stikeppni.org)*

**National Cheng Kung University Hospital**

No.138, Sheng Li Road, Tainan, Taiwan 704, R.O.C.

Tel : 886-6-2353535

E-mail : [hospital@mail.hosp.ncku.edu.tw](mailto:hospital@mail.hosp.ncku.edu.tw)



**Conference Book International Conference on Health Care and Management:**

**“Evidence to inform action on supporting and implementation of SDGs”  
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Phone.: +62 22 6121914

*E-mail: info@icon-stikeppni.org*

*Website: www.icon-stikeppni.org*

**National Cheng Kung University Hospital (NCKUH)**

No.138,Sheng Li Road,Tainan, Taiwan 704, R.O.C.

Tel : 886-6-2353535

E-mail : hospital@mail.hosp.ncku.edu.tw

**Chief Editor:**

Linlin Lindayani, Ph.D

**Member:**

Irma Darmawati, M.Kep.,Ns.Sp.Kep.Kom

Henri Purnama, MNS



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## Welcome Message



Assalamualaikum Warahmatullahi Wabarakatuh

Dear honorable guests,  
Sustainable Development Goals (SDGs) as an agreement of sustainable development objectives agreed by all countries at the 2015 UN sessions. Each country including Indonesia has an obligation to implement this joint development plan by applying universal, integration and inclusive principles by ensuring that no one missed or “No-one Left Behind” Indonesia has Nawa Cita or 9 priority agenda which should synergize with SDGs and can be used as health program application in Indonesia to also achieve SDGs.

On behalf of the organizing committee and the Nursing Society of Indonesia, I am glad to invite you to join ICHM 2018 (International Conference on Health Care and Management) in Bandung, Indonesia on July 16-17, 2018.

The conference is expected to reveal some solutions for evidence-based health care and scientific facts to be discussed by various viewpoints from diverse speakers from around the world with the title “Evidence to inform action on supporting and implementation of SDGs. Through the International Conference is expected to improve health services, especially in the field of nursing in Indonesia to improve the human development index.

We hope all participant could benefit from the exciting program and will surpass your expectation and that will be an inspiring event.

Warm regards,

A handwritten signature in black ink, appearing to read 'Dhika Dharmansyah'.

**Dhika Dharmansyah**  
Conference chair



Assalamu'alaykum Wr.Wrb  
Good morning and best wishes for all of us.

Ladies and gentlemen, in such a great and happy day, let's praise and thank to Allah Swt who has given us grace and mercy to all of us to gather in this International Conference on Health Care Management event today.

First of all, we would like to gratitude and appreciate highly to national Cheng Kung University Hospital has given the opportunity and confidence to our institution STIKep PPNI Jabar for the second time in collaboration to organize International Conference on Health Care Management with theme: "Evidence to inform action on supporting and implementation of SDGs". This event is one of follow up The memorandum of Understanding between NCKUH with STIKep PPNI Jabar.

STIKep PPNI Jabar is as a nursing education institution carry out the mandate to create professional nurse, we must implement all TRIDHARMA University activities in academic atmosphere that aims to broaden and improve nursing and existence of nurse profession capacity in nation developing continually.

As we know the university academic quality is determined by its researches and graduates result quality. The research work results may be either a right against managing intellectual wealth equity as well as scientific work which is able to be publicized through scientific journals and scientific gathering forums of the same scientist background both in national and international level.

Nevertheless, the publishing of journal researches is published by its university. Nowadays, it is irregular because there are both financial and scientific manuscript availability drawbacks. Scientific regular manuscripts are very limited because manuscript contributor is only from its university as well.

The high education Research and technology ministry data in 2017, it stated that there were an increase of research work publishing done by practitioners, academicians and researchers of Indonesian. The amount of Indonesian research publishing on international journal certifiable indexed Scopus tended to increase. The high education Research and technology ministry data on December 1<sup>st</sup> 2017 noted that Indonesia scientific research publishing reached 14.100 journals. Meanwhile, on October 1<sup>st</sup> 2017 there were as many as 12.098 journals.

However, internally nurse profession scientific research journals are still less of publishing. It is alleged to the low of quantity and quality publishing about nursing. One of the drawbacks is rarely the interaction between nursing scientists and experts in scientific conferences. Some efforts are carried out by STIKep PPNI to encourage and to accelerate sharing knowledge amongst the nursing experts. Accordance to the goals, National Cheng Kung University Hospital Taiwan and STIKep PPNI have made MoU and held as this International conferences organizer. Hopefully, it is able to bridge all stakeholders, practitioners, and academicians in supporting the quality of the human resources especially, nurses and health workers as well.

The honourable ladies and gentlemen,  
Nowadays, in the global era, the transformation runs rapidly and consequently it makes the knowledge based society. Information and communication technology development are very important in on its role in manifesting society development based on the knowledge. The higher education of society will be higher of health service quality demands specially nurse.

Accordance to the effort, this International conference aims to,

1. Facilitate the knowledge sharing between health experts and nurses to encourage the goal of health human resource quality.
2. Produce health scientific and nursing articles deserve to be published on international scopus indexed journal.
3. Make communication networking amongst Universities, research institution, nurse practitioners, and other stakeholders.

I truly believe that all participants through the 2 days in international conference, our goals above are able to be manifested well.

Finally, I would like to thank to all of participants diligently and with spirit of attending this international conference on health care management.

Wish the conference is able to be knowledge sharing event and delightful and successful as well, the conference will be enlightened and interchange will do great help for us after attending this conference, especially STIKep PPNI Jabar and generally for all profession nurses to provide health services to communities, aamiin ya robbal alamin.

Wassalamu'alaykum Wr.wb.

Kindest regards,



The Dean of STIKep PPNI Jabar



Excellencies, Distinguished Delegates, Ladies and Gentlemen,  
Selamat Siang,

I'm ChyunYu Yang, the superintendent of National Cheng Kung University Hospital in Tainan, Taiwan.

On behalf of our hospital, it is my pleasure and privilege to welcome all of you to participate in the international conference on health care and management 2018.

To our eminent speakers and delegates who have come from UK, Netherland, Korea, Japan, Thailand, Singapore, Taiwan, and Indonesia, I bid you a very warm welcome to Bandung. We are indeed honoured to have you here with us. We have about 1.000 participants from different place in Indonesia and countries gathered here today, making our conference a truly meaningful one.

This is our second time collaborate with STIKEP PPNI Jawa Barat to hold an international conference. Last year, we have very successful conference with the theme focus on infection control and disaster management. And this year, our conference theme is "evidence to inform action on supporting and implementation of SDGs".

The Sustainable Development Goals (SDGs) known as the global goals, are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. Goal 3 addresses all major health priorities and calls for improving reproductive, maternal and child health; ending communicable diseases; reducing non-communicable diseases and other health hazards; and ensuring universal access to safe, effective, quality and affordable medicines and vaccines as well as health coverage.

However, the world seems still far from ending maternal mortality, with more than 303,000 deaths in pregnancy or childbirth occurring annually. NCDs are also a growing problem, causing 40 million deaths in 2015.

But, All in all, we can take comfort in the fact that SGD indicators are moving in the right direction. Yet we still have plenty of work to do.

I wish in the next two day and a half, we have the opportunity - and indeed the responsibility - to prepare and add knowledge related the current situation and progress reflection of SDGs.

In closing, I encourage delegates to participate actively in the interesting discussions over the next two days. I wish everyone a successful and fruitful conference.

Thank you.

## Conference Committee

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## COMPARISON THE EFFECTIVENESS OF TYPES EXTRACT TURMERIC *CURCUMA DOMESTICA* RHIZOMA AND *CURCUMA* *ZEDOARIA* ROSC ON A ONE WEEKS HEALING OF STAGE I DIABETIC IN WHITE RATS SPRAGUE DAWLEY

<sup>1</sup>Mutimanda Dwisatyadini, <sup>2</sup>Jaka Pamungkas, <sup>3</sup>Innes Maulidya,  
<sup>4</sup>Nurrida Dessalma Syaharania

<sup>1</sup>Department of Biology and Health, Faculty of Mathematics and Natural Sciences, Open University of Indonesia, South Tangerang, Banten, Indonesia.

<sup>2</sup>Departement of Clinic, Open University of Indonesia, South Tangerang, Banten, Indonesia.

<sup>3,4</sup> Animal Cage Unit Experiments, Bogor Agricultural University, Bogor, West Java, Indonesia.  
Corresponding Email: mutimanda@ecampus.ut.ac.id

### ABSTRACT

**Background:** Extract of yellow turmeric rhizome has an effected to healed wound compared to solvent control. Turmeric extract has an effected to protect a cell's form an inflammation. **Objectives:** Objectives of this study was to comparing the effectiveness of extract a *Curcuma domestica* Rhizoma and a *Curcuma zedoaria* Rosc, which one proved to accelerate on healing of stage I diabetic wounds in the Sprague Dawley Male White Rats. **Methods:** Methods of this study is an experimental laboratory with posttest control group design method. Samples of all rats required 32 tail, divided into 4 groups with the number of each group is 8 rats with stage I diabetic wound. **Results :** The results showed evaluation of wound healing ratio before and after wound treatment with turmeric extract *Curcuma domestica* Rhizoma, *Curcuma zedoaria* Rosc, Metronidazole, NaCL significant on wound size, wound edges, re-epithelialization and tissue granulation *p-value* <0.05. Although a blood sugar levels in white rats Sprague Dawley were unstable in range minimum of 36 mg/dl and maximum more than 600 mg/dl. Wound treatment with a yellow turmeric extract, metronidazole, and Nacl was more effective at 75% of treatment, than using a white turmeric extract at 25%. This is because the essential oil and curcuminoid content in white turmeric is lower than a yellow turmeric that is equal to 1.06- 1.87% v / b and 10-19%. **Conclusions:** Conclusions of this study is an effectiveness of types extract yellow tumeric (*Curcuma domestica* Rhizoma) than a types extract white tumeric (*Curcuma zedoaria* Rosc).

**Keywords :** *Curcuma domestica* Rhizoma, *Curcuma zedoaria* Rosc, Wound Care.

### INTRODUCTION

In Indonesia was reported of Diabetes Mellitus patients 8.4 million in 2001, then it increasing to 14 million in 2006 and estimated to be around 21.3 million in 2020 (Ministry of Health, 2008). Primary Health Care (PHC) is a strategy by the Indonesian government to increase of health in all societies. Primary health care can contribute to across the Sustainable Development Goals (SDGs), including provide health education and advocate for healthy (Pettigrew, *et al.*, 2015). Participation by the community in health development based on PHC is a traditional treatment effort (Badan Pusat Statistik, 2008).

According to Sudjarwo (2003), curcuminoid contained in turmeric has many functions, such as antioxidant, antihepatotoxic, anti-inflammatory and antirheumatic. White turmeric (*Curcuma zedoaria* Ross) has a chemical content of essential oil 1-1,5%, curcumin, gum, resin, starch, and

tannins. White turmeric can be used as anticancer, antibacterial, antithrombic, antifungal, antioxidant, hepatoprotective, antifertility (Siswanti, Astirin, and Widiyani, 2003).

Study by Julianto (2015) about the effectiveness of white turmeric hydrocolloid (*Curcuma Domestica* Vahl) on healing process of stage I diabetic wound in Rats (*Rattus overbites*), the result of comparison between group with white turmeric hydrocolloid (*Curcuma Domestica* Vahl) dressing is 0,25%, 0,5%, and 1% all experienced healing, while the group with 0,9% moist gauze dressing only a small part of the healing. According to Yuna study (2014) obtained all variations of yellow turmeric rhizome extract dose an effected to healed wound compared to solvent control. Doses of 200 µg/ 200 g/ BB would have reduced the inflammatory reaction, while the doses of 50 µg / 200 g/ BB obtain a faster to wound closure, increases the amount of fibroblasts, and decreases the number of necrotic cells.

Wientarsih, Winarsih, and Sutardi study (2012) show in activity of wound healing by ethylacetate fraction gel yellow turmeric rhizome in hyperglycemic mecit, the result of the therapy group had a significant effect compared with the negative control in wound healing process. This means that the gel of the ethylacetate fraction of *Curcuma longa* is very potential to use as a phytochemical product in wound healing process. Based on the above background, the authors are interested to conduct a study entitled the comparison of the effectiveness of *Curcuma domestica* Rhizoma *curcuma domestica* Rhizoma and *Curcuma zedoaria* Rosc on the healing of stage I diabetic wounds in the Sprague Dawley Male White Rats.

## METHODS

Experimental laboratories with post-test control group design method. Samples of all rats required 32 tails, divided into four groups with the number of each other in the group at eight rats with stage I diabetic wounds. First Previously performed injected a rat with alloxan. The calculation dose by alloxan 125 mg in rat with weight 200 mg / 1000 mg X 125 mg = 25 mg, and if in rat with weight 300 mg / 1000 mg X 125 mg = 37,5 mg. Rats performed blood sugar check twice a day. How to check blood glucose levels by taking blood samples from a vein in a rat's tail by pinning a little needle at the tail end.

The method of making wounds according to the method (Morton & Malone, 1972 in Fimami, 2010), is as follows: the test animal is shaved his hair in the upper back area (performed the day before the wound). At the time of the wound, the rats will be drugged first using Ketamine-xylazine 75-100 mg/kg + 5-10 mg/kg (Herperian, Kurniawaty, and Susantiningih, 2014). The area to be wounded is cleaned with 70% alcohol. Then the incision is a circle with a diameter of 2 cm, 2 mm depth of the epidermis (stratum corneum to stratum granulosum) on the back of white rats parallel os. Vertebrae using sterile scalpels, sterile surgical scissors and sterile tweezers (Nurlitasari, 2011; Sadewo, 2013; Jayadi and Krismi, 2015; Ningtyas, 2017).

Every day for seven days in the treatment group, white rats performed twice wound care per day with *Curcuma Domestica* Rhizoma as much as 500 mg (group 1) and *Curcuma Zedoaria* Rosc (group 1) and 500 mg *Curcuma Zedoaria* Rosc (group 2) were applied to morning and afternoon. Group 3 with wet vial compress one vial (infusion bottle) Metronidazole 500 mg / 100 ml of 1 daily (0.5) infusion 0.9% as much as 20 cc per day (10 cc for morning and ten cc for afternoon). However, before and after wound care, blood glucose and wound conditions were assessed using Bates Jensen's wound assessment. After wound care is given analgesic drug paracetamol 3 X 18 mg / kgBB = 0,018 mg given orally. Then the wound is studied with the instrument of Basten Jensen (Nurlitasari, 2011).

## RESULTS

Table 1 Evaluation and overview of wound healing observation with Bates Jensen instrument

No	Test group	Result Baste		Wound status according to Bates Jensen's study	
		Jansen			
		Pre	Post		

1	<i>Curcuma Domestica</i> Rhizoma	26	13	Began growth of re-epithelialization and granulation in the wound towards wound cell Regeneration 75-100%
2	<i>Curcuma Zedoaria</i> Rosc	27	23	The growth of re-epithelialization and granulation in new lesions <25% and> 25%, but not yet towards cell degeneration.
3	Metronidazole	26	13	Began growth of re-epithelialization and granulation in the wound towards wound cell regeneration 75-100%
4	NaCl	26	14	Began growth of re-epithelialization and granulation in the wound towards wound cell regeneration 75-100%

Source: Primary Data

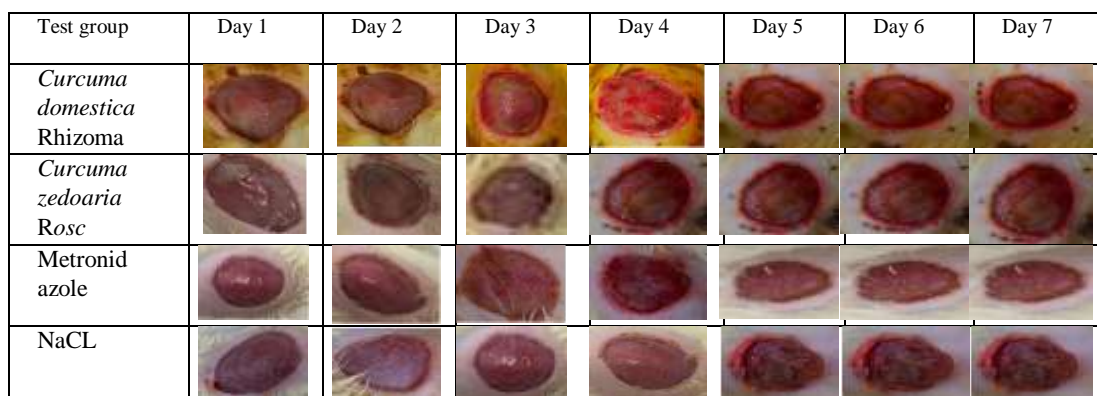


Figure 1. Heath Physical Wound Healing Process  
In The White Rat Sprague Dawley Male Rat  
Source: Primary Data

The results of the research in table 1 and figure 1, wound healing assessment with Bates Jensen instrument can be seen the average of test group after treatment of the seven day wounds with yellow turmeric (*Curcuma domestica* Rhizoma), Metronidazole, NaCl 0,9%, and white turmeric (*Curcuma zedoaria* Rosc) began to develop re-epithelialization and granulation of the wound, with a value of 13,13,14 (according to the range on Bates Jensen 13-55 assessment, is the limit of cell measurements can regenerate, with the growth of re-epithelialization and granulation of the wound).

Table 2 Evaluation and Picture of Wound Healing Comparison Before and After Treatment with turmeric extract *Curcuma domestica* Rhizoma, *Curcuma zedoaria* Rosc turmeric, Metronidazole, NaCl.

No	Variabel	Signifikan	Result
1	Pre and Post Wound size	0,006	Signifikan $P$ value >0,05
2	Pre and Post Wound Edges	0,05	Signifikan $P$ value >0,05
3	Epitelization Pre dan Post	0,002	Signifikan $P$ value >0,05
4	Granulation Tissue Pre dan Post	0,002	Signifikan $P$ value >0,05
5	Pre and Post Injury Depth	0,09	Tidak signifikan $P$ value >0,05
6	Under Mining Pre and Post	0,39	Tidak signifikan $P$ value >0,05
7	Pre and Post Necrotik Tissue Type	0,39	Tidak signifikan $P$ value >0,05
8	Pre and Post Necrotek Tissue Amount	0,39	Tidak signifikan $P$ value >0,05
9	Pre and Post Skin Color Surrounding Wound	0,39	Tidak signifikan $P$ value >0,05
10	Pre and Post Preipheral Tissue Edema	0,39	Tidak signifikan $P$ value >0,05
11	Pre dan Post Peripheral Tissue Induration	0,08	Tidak signifikan $P$ value >0,05

Evaluation of wound healing ratio before and after wound treatment with turmeric extract *Curcuma domestica* Rhizoma, turmeric extract *Curcuma zedoaria* Rosc, Metronidazole, NaCl. Curcuma was significant in wound size (0.006 p-value <0.05), wound edges (0.05 p-value > 0.05), re-epithelialization and tissue granulation (0.002 p-value <0.05). While comparison of wound healing before and after wound treatment with Curcuma domestica Rhizoma turmeric extract, Curcuma zedoaria Rosc, Metronidazole, NaCl Curcuma not visible significant at wound depth (0.09 p-value > 0.05), at cave in wound, necrotic tissue type, the amount of necrotic tissue, skin color around the wound, and edema tissue (0.39 p-value > 0.05), on edge tissue hardening there was no significant comparison between before and after wound treatment with turmeric extract *Curcuma domestica* Rhizoma, turmeric extract *Curcuma zedoaria* Rosc (0.08 p-value > 0.05).

## DISCUSSION

It was concluded that yellow turmeric (*Curcuma Domestica* Rhizoma) was equivalent to Metronidazole, with a total score of 13, best for the treatment of stage I diabetic wounds, then NaCl 0.9% with a total score of 14. White turmeric (*Curcuma Zedoaria* Rosc) was less effective for wound care with a total score of Bates Jensen's assessment 23. By Hamid's research, (2011) showed wound care with turmeric rhizome significantly accelerate wound healing from the treatment with NaCl 0.9%, amounting to p-value 0.002. Research by Budiman & Derrick, (2015) wound care with turmeric showed very significant results in increased re-epithelization, increased collagen density, and increased density of fibroblasts compared to NaCl 0.9%. Research Budiani, et al., (2016) showed no significant effect of giving metronidazole to healing diabetic ulcers in RSUD Dr. H. Soewondo Kendal, with p-value of 0.001 ( $\square$  <0.05).

It is concluded that the results of this study have significant differences before and after wound treatment with turmeric extract *Curcuma domestica* Rhizoma, turmeric extract *Curcuma zedoaria* Rosc, Metronidazole, NaCl Curcuma turmeric. The results of this study supported the research of Ningtyas, (2017) showed a significant acceleration of wound healing after wound treatment with turmeric rhizome (*Curcuma domestica* Val) with p-value 0.000 (p <0.05). The study by Kristiyaningrum *et al.*, (2013) showed that there is an average difference between the use of 0.19% NaCl and D40% in the treatment of diabetic ulcer wounds, with p-value = 0.001. The study by Sunarto, (2010) showed that metronidazole was significantly more effective in wound care with a p-value of 0.004 <0.05 because it reduced the odor and spread of infection.

A study by Hamil *et al.*, (2014) showed significant differences in wound care with metronidazole compress and Povidone Iodine compresses on diabetic wound healing process at Sukoharjo District Hospital (p = 0.000). A study by Budiani *et al.*, (2016) showed no significant effect of giving metronidazole to healing diabetic ulcers in RSUD Dr. H. Soewondo Kendal, with a p-value of 0.001 ( $\square$  <0.05).

## CONCLUSION

The results of yellow turmeric research (*Curcuma Domestica* Rhizoma) is equivalent to Metronidazole, with a total score of 13, best for the treatment of diabetic wounds of stage I, then NaCl 0.9% with a total score of 14. White Turmeric (*Curcuma Zedoaria* Rosc) is less effective for wound care with a total score of Bates Jensen's assessment 23.

Evaluation of wound healing ratio before and after wound treatment with Curcuma domestica Rhizoma turmeric extract, Curcuma zedoaria Rosc, Metronidazole, NaCl Curcuma Curcuma was significant in wound size (0.006 p-value <0.05), wound edges (0.05 p-value > 0.05), re-epithelialization and tissue granulation (0.002 p-value <0.05). While comparison of wound healing before and after wound treatment with Curcuma domestica Rhizoma turmeric extract, Curcuma zedoaria Rosc, Metronidazole, NaCl Curcuma not visible significant at wound depth (0.09 p-value > 0.05), at cave in wound, necrotic tissue type, the amount of necrotic tissue, skin color around the

wound, and edema tissue (0.39 pvalue > 0.05), on edge tissue hardening there was no significant comparison between before and after wound treatment with turmeric extract *Curcuma domestica* Rhizoma, *Curcuma zedoaria* Rosc turmeric (0.08 pvalue > 0.05). It is concluded that the results of this study have significant differences before and after wound treatment with *Curcuma domestica* Rhizoma turmeric extract, *Curcuma zedoaria* Rosc, Metronidazole, NaCl *Curcuma* turmeric.

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LEMBAGA PENELITIAN & PENGABDIAN KEPADA MASYARAKAT  
**PUSAT STUDI BIOFARMAKA TROPIKA**

Jl. Taman Kencana No. 3, Kampus IPB Taman Kencana, Bogor 16128  
Telp. 0251-8373341 Faks. 0251-8347325 E-mail: [bfarmaka@gmail.com](mailto:bfarmaka@gmail.com)

**KETERANGAN KELAYAKAN ETIK Hewan**  
No : 003-2017 KEM TROP BIC

Komis Etik Hewan Pusat Studi Biofarmaka Tropika telah mempelajari secara seksama penggunaan hewan dalam rencanng kegiatan yang diusulkan, maka dengan ini menyatakan bahwa:

- |                           |   |  |
|---------------------------|---|--|
| Judul Kegiatan            | : | Perbandingan efektivitas ekstrak jering kulit <i>Crocina Demissa</i> Alphonse dan <i>Crocina Zosteria</i> Roca terhadap perembukan luka diabetik stadium I pada Tikus Putih Jantan Galur Sprague Dawley. |
| Pemanggung Jawab Kegiatan | : | Muhmonda Densetyadhi, Ns, M.Kep.   |
| Institusi                 | : | Universitas Terbuka  |
| Dinyatakan                | : | <b>LAYAK ETIK</b>  |

Bogor, 2 Agustus 2017  
Ketua Komisi Etik Hewan  
Pusat Studi Biofarmaka Tropika,

( Wawa Kuchok, SSI, MSi. )