

## UGM Students Make Nano Spray for Diabetes Wound

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Indonesia ranks seventh among countries with patients of diabetes mellitus and ranks fourth in highest diabetes prevalence after India, China and the U.S. The number of patients continues to increase every year, especially among diabetes mellitus type two. According to the WHO, the number of diabetes mellitus type 2 will increase significantly up to 21.3 millions in 2030.

One of the symptoms of diabetes mellitus is unhealed wounds so that many of the patients have to be amputated. The wound will get worse if infected with MRSA (Methil Resistant Staphylococcus Aureus) bacteria.

Seeing this condition, a group of students joining a student creativity programme in a project called Penelitian Eksakta Triswheat created medication for diabetes mellitus wounds with the extract of sea cucumber (teripang). Sea cucumber is known to contain bioactive compounds that are potential as anti-bacterial, anti-inflammatory medication that can quicken the process of healing.

The students are Nada Hanifah, Yusuf Farid Achmad, Mellya Permatasari, Marista Kurniati, all from Faculty of Veterinary Medicine, and Ditya Tiwi Syafira (Faculty of Pharmacy) made the product named as *Triswheat* (Teripang Super Wound Healing Agent). *Triswheat* is different from other medications which are mostly cream or ointment. *Triswheat* comes in nano sprays.

“The nano sprays are expected to be able to get under the skin quicker, it’s also easy and practical to use,” said Nada on Wednesday (14/6).

The students initially did research on sea cucumber extraction. This is followed by diffusion test to know the zone of bacterial inhibitor and determines the effective concentrate of the extract that can inhibit or kill the bacteria with gradual concentrates.

The diffusion test results in effective concentrate, which is on the concentrate of 40%. The next phase is dilution test to ensure that the result of diffusion test is valid. The last test is in vivo using mice that have been induced with diabetes and infected with MRSA bacteria, then cured with this extract. After 14 days, the wound is healed.

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