

King Banana's Gum Delivers UGM Students to Win Gold Medal in National Student Scientific Week (PIMNAS) XXIII

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Until this time, king banana (*Musa sapientum*) may only be known as the fruit for culinary dish. Apparently, besides its delicious taste, king banana is also efficacious for wound healing after tooth extraction. Not only that, the results of that research have made UGM students to win gold medals at the National Student Scientific Week (PIMNAS) XXIII at Mahasaraswati University, Denpasar, Bali, 21-23 July.

UGM students who won the gold medal at the Research Student Creativity Program are Yosaphat Bayu Rosanto, Nur Ferliana Sari, Hajar Novelty Wity, Rahma Ningsih and Sekar Putri. All of the students are majoring in Dentist Education UGM class of 2006 and 2007.

According to team leader Yosaphat Bayu Rosanto, banana plant's gum is considered wastes that pollute the environment and stain the clothing, but in rural communities banana gum are often used to heal wounds. This is the background of scientific research done by these students.

"Particularly, until this time we know that banana juice contains saponins, flavonoids, and ascorbic acid," said Yosaphat at UGM, Thursday (12/8).


Yosaphat added, banana plant's gum has been known to contain saponins (for the formation of new blood vessels), flavonoids (shortening the phase of inflammation as well as prevention of infection) and ascorbic acid (forming collagen connective tissue). The students research to study the effect of banana gum gel to the number of angiogenesis, collagen density, and number of osteoblasts in the process of wound healing after tooth extraction has been tested on marmots.

"The research so far has only been tested on 24 marmots," he said. Yosaphat said that the twenty-four marmots were divided into three groups namely the positive control group using the wound healing drug, negative control with a gel of CMC Na (Carboxymethyl Cellulose Sodium), and with treatment, that is a combination of the king banana's gum and CMC Na. The marmots that received treatment with the gum and CMC Na have quicker healing process.

"Marmots that were given the treatment can heal in five days Whereas the other way it could take 10 days even 14 days,' he explained. The results of the research showed an increasing number of angiogenesis, collagen density, and a significant number of osteoblasts in applications of banana gum on the wound after tooth extraction. However, the number of osteoblasts did not differ significantly among the three treatments.

"By that result, it could be concluded that king banana gum can accelerate wound healing after tooth extraction," he said.

Meanwhile, related to the process of obtaining the gum of king banana crops, Rahma Ningsih said that the king banana is sliced as usual. Then the water and the gum are squeezed. Banana gum and water are dried in oven for three days with a temperature of 55 Celsius degrees. Results of the drying were then mixed with CMC Na.



"The composition are; banana juice 80%, while Na CMC is approximately 20%," said Rahma. Rahma explained that the results of the research did not rule the possibility that it will be immediately applied in humans after going through several tests such as content test, toxicity test, clinical test to the patent.

The cost of the research was fairly low about IDR 135 thousand to buy banana stem and the drying process with ovens.

"The cost of research is quite affordable, around IDR 135 thousand, primarily to buy banana plants and the drying process with an oven," explained Rahma.

As reported previously, UGM succeeded to be the overall champion in the National Student Scientific week XXIII, which was held at the University Mahasaraswati, Denpasar, 21-23 July 2010. In the activity that was participated by 113 colleges, UGM won 19 medals, nine gold medals, four silver medals and six bronze medals.

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