

## Mahidol University researchers invent rice extract-based mouthwash for the elderly

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A mouthwash made from rice extract, invented by researchers at Mahidol University, can help reduce oral health problems in elderly patients and side-effects from head and neck cancer treatments, the university said.

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Studies have shown that elderly patients often see dental plaque develop on exposed tooth roots and find it more difficult to remove them than younger patients. Apart from brushing teeth, gums and tongue, using a suitable mouthwash together with scaling and root planning by dentists can help facilitate more thorough cleaning in elderly patients who have trouble brushing their teeth due to the loss of skill in holding a toothbrush or their visual problems. This causes various oral diseases such as chronic periodontitis, bad breath, thrush and dry mouth, including gum tissue and oral mucosa becoming thinner, easily irritated and risk of developing mouth ulcers. However, using a mouthwash containing natural extracts that have antimicrobial and anti-inflammatory effects in conjunction with scaling and root planning might be a new hope for the prevention and mitigation of such diseases, the university said.

After over 10 years of effort in cooperation with female dentist Dr Jintana Phokaratsiri, the research team and the private sector to help drive the market, Assoc Prof Dr Salunya Tancharoen, head of Pharmacology Department, Faculty of Dentistry, Mahidol University, has done a research on a complete range of development for innovative mouthwash made with Thai rice extracts. She discovered that different types of Thai coloured or pigmented rice could be used as raw materials for developing a nutraceutical product. The rice extracts have antioxidant properties, kill germs and prevent inflammation of the soft oral mucosa which is a side-effect of radiotherapy or chemotherapy for cancers of the head and neck, the university said.



Developed for elderly patients with oral disease problems, the mouthwash is safe and has the specified properties that are suitable for the group, the researchers said.

They said this was the first time a mouthwash has been developed for elderly patients with oral disease problems, but the product also ensures safety with organic ingredients.

The crop of Thai rice used is free of pesticides and passed the standards of the International Federation of Organic Agriculture used to verify organic agriculture worldwide. Environmentally friendly methods are promoted, such as the technology of "Klaeng Khao", which is an alternative wetting and drying based on to the agricultural philosophy of the late King Bhumibol Adulyadej and the removal of some grass from the dykes for water flows without the use of grassicides.

Product testing of this rice-extract mouthwash in elderly patients for three months found that they did not have mouth burning symptoms while feeling hydrated in the throat and mouth, plus being satisfied with the pleasant taste of this herbal mouthwash, the university said. Moreover, when tested with a breath test meter, the elderly patients have decreased halitosis.

The research team is continuing to develop various kinds of oral products to help reduce the inflammation of soft mucous membranes within the mouth and the dry-mouth symptom, which are side-effects of head and neck cancer treatment.

The research on the innovative Thai rice extracts has been published in leading international academic journals in a total of three issues and patent has been filed for four intellectual property rights by the Institute of Technology and Innovation Management, Mahidol University. It is also in the process of requesting a certification mark from Food and Drug Administration before it goes on sale in October 2021.

It will help Thai farmers, the backbone of the nation, to have good health from organic or chemical-free farming and have a better economic status by increasing the worth and value of Thai rice, Mahidol University said.

**Published :** May 01, 2021

**By :** THE NATION