Bitterness-Masking Ingredient And Method

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INTRODUCTION AND OBJECTIVE

To provide a bitterness-masking agent and method that masks the bitterness of an edible substance containing a pharmaceutical product, food, or drink, whether a fine powder or a whole fruit, safely, cheaply, simply, with anti-bacterial and anti-degenerative properties over the long term even at room temperature and in a hydrated state, without destroying or altering the composition thereof, using an ingredient in use from early times, in order to have the edible substance absorbed by the stomach.

MATERIALS AND METHODS

To use an edible flocculating agent from an ingredient in use from early times to have an edible substance containing a pharmaceutical product, food or drink be absorbed by the stomach, whether said edible substance is a fine powder or a whole fruit, and to do same safely, cheaply, simply, with anti-bacterial and anti-degenerative properties over the long term even at room temperature and in a hydrated state, without destroying or altering the composition thereof, to provide a bitterness-masking agent and method that do not generate industrial waste, to provide an edible substance containing a pharmaceutical product or food using said method, and to provide an importation and exportation method using same. The present invention enables fresh overseas edible substances to be imported and exported safely, cheaply, readily, and free of disease, even in large volume.

RESULTS AND DISCUSSION

Exemplified as follows: Nutritious but bitter olive polyphenols become delicious and beautiful, i.e. beautiful olive red wine, vinegar, alcoholic dishes, chocolate, caramel, sweet, etc. without NaOH or salt treatment. They have polyphenol content 40mg/dl. They are delicious in the mouth but return to original bitters after swallowing in the stomach. They are made by simple and easy traditional coagulation, such as calcium, carbon dioxide, etc. which are used for foods of all over the world. The reactive part of bitter molecule, which will bind to taste bud receptor, is coagulated with saturated calcium hydroxide and saturated carbon dioxide, and covered by calcium carbonate. Then the bitter reactive parts are completely covered. After they are eaten and swallowed into the stomach, the gastric acid immediately dissolves the cover. Then the covered bitter returns to original bitter to be absorbed. For non-pitted olive, in order to shorten the processing time, ethanol can be mixed into aqueous solutions. Because of the bitter, olive produces massive wastes , eg., oil cake, nuts, NaOH which destroys nutrition. By the same method, bitters of other foods disappear, such as bitter melon (Momordica charantia var. pavel), green tea, bile, Rhei Rhizoma(the bitterest oriental medicine), etc. For these, only the bitters are masked. The other all tastes, such as deliciousness etc. do not change. The masked Rhei Rhizoma showed the same medical effect as original. Any kind of calcium can be used. For example: Tea, olive etc. can be masked only with tea, olive etc. because calcium of their own can be easily extracted from their disposal parts of tea, olive etc. Any kinds of waste portion of tea, olive, etc. can be used as calcium source, such as pruned branches, waste leaves, flowers, etc. In order to reduce the bitterness, cultivation of high-grade green tea requires huge covers on tea trees in wide farms to block the sunlight. In this way, their growth and nutrition such as polyphenols etc. are reduced. However, our method has achieved the best growth and nutrition with enough sunlight without huge cover construction.

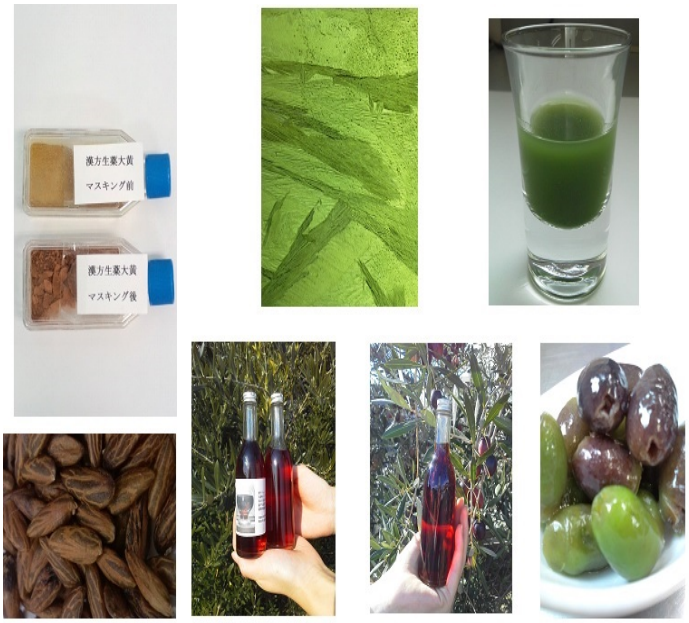

Figure 1 : Pre-&-post-masking Rhei, Masked lyophilized & liquid green teas, Masked polyphenol olives (seeds, wine, vinegar, pickles).

CONCLUSIONS

These reports will make new contributions for industries and sciences of bitter medicines, powders, whole fruits, bitter beverages and foods such as olive, tea, etc. Patent pending WO2012/036080A1 (Yamada, 2012). These preliminary reports were lectured and exhibited at Agribusiness Fair of Ministry of Agriculture of Japan (2011), VIIth International Symposium on Olive Growing (2012), 104th AOCS Annual Meeting & Expo (2013), 17th Annual Green Chemistry & Engineering Conference Sustainable Chemistry & Engineering in the 21st Century (2013).