

Banana Extract by Microwave Hydrodiffusion and Gravity Technique

Invention Summary

This invention relates to a solvent free novel method of extracting soluble natural ingredients from biological material using microwaves as the energy source. This provides a technique by which natural ingredients can be extracted selectively in a relatively short period of time compared to conventional extraction methods and facilitates an enhanced extraction yield for flavor and fragrance components, which normally require special and separate extraction methods.

Technology overview

Fresh bananas are extracted using a new green extraction technique called Microwave Hydrodiffusion and Gravity (MHG). The extraction does not require any added solvents or water and reaches completion within 15-30 min. The internal heating of the in-situ water in bananas distends the cells and leads to their rupture diffusing the extractives by hydrodiffusion and causing it to be collected at the bottom. A cooling system outside the microwave oven cools the extract continuously maintaining the freshness of the extract.

Potential Applications

- To produce flavoring agent for food products such as milk, ice cream, sauce, jam, fruit bars, chewy bites, puree, cake, biscuits, food additives, bread and yoghurt.
- Banana infused skin care products including face masks, body yoghurt, lip balm, eye creams, face cream, body cream, hand creams, sanitizers, soap and spa products.

Advantages

- High purity extract in concentrated form (no added solvents or water used).
- Rich in essential vitamins and minerals.
- High content of bio-actives including antioxidants.

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