

INVENTORS

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NOVEL INNOVATIVE FOOD PRODUCT FROM PERLIS SUNSHINE MANGO FLOUR MADE FROM PEEL, PULP AND KERNEL

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PRODUCT DESCRIPTION

A huge amount of byproduct is produced during mango processing which is a rich source of many utilizable components. Peel accounts for 15% of the byproduct, stones 18% and 8 to 10 % byproduct from pulp. Fruit byproduct can be converted to value added products which will reduce environmental pollution and waste disposal. Mango peel, pulp and kernel flour prepared from matured unripe Perlis Sunshine mango was evaluated for proximate analysis, total dietary fiber, antioxidant activity and total phenolic content. This product enhances the anticancer, antidiabetic properties and reduction of obesity therefore promoting healthy dietary intake. Supplementation of Perlis Sunshine mango peel flour to wheat flour was found to increase chemical composition especially in fiber and ash content although there was a slight decrease in protein. Thus, Perlis Sunshine mango peel flour can be added in chapati and biscuit formulas so as to develop high fiber chapati and biscuits to help consumers increase their daily fibre intake.



APPLICATIONS

- Flour in bakery products
- Flour in food industries
- Food Supplement in antioxidant and dietary fiber

COMMERCIAL POTENTIALS

- As composite flour.
- Bakery product such as high fiber bread, cake, biscuits, chapati and crackers.

NOVELTIES

- The first innovative product of Perlis Sunshine Mango flour as chapati and biscuit
- Anticancer, antidiabetic and antiobesity properties

INVENTION ADVANTAGES

- High fiber, antioxidant and total phenolic content
- Natural sources

RESULTS

Result for Chapati

Composition %	Control	Mango Peel Chapati	Mango Pulp Chapati	Mango Kernel Chapati
Carbohydrate	32.5	35.0	40.0	36.0
Fat	2.1	1.6	1.3	1.8
Protein	6.0	4.2	4.0	4.8
Dietary Fiber	1.2	6.4	5.0	4.3
IDF	0.8	4.3	3.3	2.1
SDF	0.4	2.1	1.7	2.2
Calories (kcal)	170	171	180	175

Result for Biscuit

Composition %	Control	Mango Peel Biscuit	Mango Pulp Biscuit	Mango Kernel Biscuit
Moisture	12.99	12.33	11.67	12.04
Ash	0.89	1.22	1.32	1.67
Protein	8.96	5.63	4.37	5.54
Fat	9.78	10.23	9.50	10.04
Crude Fibre	1.98	4.97	4.10	4.35
Carbohydrate	76.40	75.62	76.65	75.40
Calorie (kcal)	329	310	330	320

PUBLICATIONS

1. Anti-cancer of Perlis sunshine mango (*Mangifera indica* L. Var sala) peel flour as a new ingredient in physicochemical properties of high fiber biscuit. N.S.A.Abidin, S. A. Ghani, M.H.C.Mat and N. S. Baharudin. 2nd International Conference on Agricultural and Food Engineering (ICAFE) November 2014, Malaysia

2. Proximate and Phytochemical Analysis of Bambara Groundnut (*Vigna subterranea*) Flour in Terms of Chemical and Texture Characteristics Using Response Surface Methodology (RSM). S. A. Ghani, M.H.C.Mat, H. Bukunudin, M.N.Jaafar. (2013). Australian Journal of Basic and Applied Sciences (ISI Indexed, ISSN : 1991-8178).

3. Proximate and Phytochemical Properties of Bambara Groundnut (*Vigna subterranea*) Under Different Drying Conditions. N.S.A.Abidin, M.H.C.Mat, F.S.A.Saad, Malaysian Technical Conference on Science and Engineering & Technology (MTCSET) (2015).