

CELEBRATING
COMMERCIALISATION
YEAR 2014

iiindex 2014

AN INTERNATIONAL EXPOSITION ON RESEARCH AND INNOVATION

invention
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exposition 2014

INNOVATEUR
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2014

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UNIVERSITI TEKNOLOGI MARA
MALAYSIA

*Bridging
the valley of death :
advancing the
commercialisation
of research*

RESEARCH BOOK

iiindex2014

AN INTERNATIONAL EXPOSITION ON RESEARCH AND INNOVATION

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RESEARCH INNOVATION BUSINESS UNIT
UiTM-MTDC Technopreneur Centre, Universiti Teknologi MARA
40450 Shah Alam, Selangor Darul Ehsan, MALAYSIA
Tel : +603-5544 2747/2748/2750
Fax : +603-5544 2790

Web : www.iiindex.com.my
Email : iiindexuitm@gmail.com



FOREWORD

The Honourable Minister of Science, Technology and Innovation (MOSTI) has launched 2014 as Malaysia Commercialisation Year 2014 (MCY2014) with the theme Science Technology and Innovation (STI) for Wealth Creation. In line with this theme, Invention, Innovation, Design & Exposition 2014 (iidex2014) is an annual exposition organized by UiTM and is the ultimate platform to highlight and commercialise new inventions and innovations. Researchers and inventors will exhibit their products which cater to the needs and wants of the community and the country.

The iidex2014 creates a new dimension by fusing two competitive concepts, a competition among innovative products and a competition to invite Innovateur Wannabes to perform live pitching of their products to the audience. The iidex2014 focuses on comprehensive commercialization and creating opportunities for entrepreneurs to carry out R&D as well as to provide avenue to commercialise their products. Through expositions such as iidex2014, MOSTI hopes to inculcate the culture of commercialisation of new technology designed and created by Malaysians.

I wish to congratulate all the participants of the iidex2014 and this is the opportunity for all researchers to show their ideas and exhibits their products and creativity. Apart from showcasing their products, innovators will have the opportunity to provide a window to the industry for business matching during the exposition.

Tan Sri Dato' Sri Sallehuddin Mohamed
Pro-Chancellor, Universiti Teknologi MARA

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OOMPH! : FRUIT SNAX ENERGY BAR

Syahrul Bariah Abdul Hamid, Norazmir Md Nor, Naleena Devi Muniandy
Siti Sabariah Buhari, Kartini Ilias
Faculty of Health Sciences, UiTM Shah Alam, Selangor.
Email: syahrulbariah25@gmail.com

Energy bar is a form of supplement bar containing cereals and other high energy food group targeted at people who require quick energy but do not have time for a meal. Nowadays demand for a nutritious snack that has added benefit of functional food is increasing. Consumers demand for a nutritious, convenient and tasty snack that satisfies with both their hunger and appetite, momentarily until the next meal. Although there are a lot of energy bars in the market, many of them emphasize on providing instant energy mainly from carbohydrate and fat. There are limited energy bars that provide high fiber with extra benefit of fruits. "OOMPH!!! Fruitsnax Energy Bar is unique as it uses local fruits such as papaya (*Carica papaya*) and hog plum (*Spondias Mombin*), carrots as well as rolled oats. This product will provide a range of health promoting effect due to the high content of fiber, vitamins and antioxidants. The development of this product is important to encourage a healthy food intake especially fiber and vitamins and to develop the small-medium entrepreneurship (SME) growth in Malaysia. This is a high fiber, and palatable energy bar that is competitively cheaper as the main ingredients such as rolled oats is easily obtained and the local fruit is easily available and not seasonal. On top of that, the ingredients offer an array of benefits. Oats contain 50.9% carbohydrate, 6% fat, 10% protein, 2.6% ash and 30.5% total dietary fiber per 1000 gram. The fat in oats consists of high amount of oleic and linoleic acid which is potentially high in nutritional value. The carbohydrates in oat consist of arabinoxylan, mixed-linked (1-3)(1-4)- β -glucans, and cellulose. β -glucans itself is a bioactive component, which is beneficial in the reduction of serum and plasma cholesterol and in lowering postprandial glycemic response. *Carica papaya* contains a high amount of vitamin C (ascorbic acid) and three main carotenoids which are lycopene, β -cryptoxanthin, and β -carotene. Meanwhile, carrot (*daucus carota*) is a good source of natural antioxidants, especially carotenoids and phenolic while the hog plum (*spondias mombin*) contains five carotenoids which are β -cryptoxanthin, lutein, zeinoxanthin, α and β carotene. β -cryptoxanthin being the major ingredients in this fruit, accounts for the high level of pro-vitamin. Individuals with high intake of dietary fiber appear to be at significantly lower risk for developing coronary heart disease, stroke, hypertension, diabetes, obesity, and certain gastrointestinal diseases. It acts by lowering blood pressure and serum cholesterol levels, improving glycemia and insulin sensitivity in non-diabetic and diabetic individuals and significantly enhances weight loss. To develop an affordable and convenient energy bar for all ages and population. Proximate analysis was done to determine energy, macronutrients and total fiber. In addition, sensory evaluation was done to perceive food acceptance which will be determined by perception and liking of the taste, flavor and texture of the food. This is a convenient and appetizing energy bar that can be consumed as a meal or snack. Local ingredients such as carrots, papayas and hog plums are known for their high antioxidant properties. This product will have a high commercial value as there are limited high fiber energy bar in our market using local fruit.