Fruit and Vegetable Based Technologies for Healthier Food Choices

Tara McHugh
Processed Foods Research Unit

INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

Processed Foods Research Unit
Western Regional Research Center
Albany, CA
WHO and FAO state that low fruit and vegetable intake is a key risk factor for obesity, heart disease and cancer.

USDA, ERS has found people who eat more servings fruit each day have lower body mass indexes.

Studies have also shown that diets high in whole grains and fiber result in lower body mass indexes.
Less than 30% of Americans eat the recommended servings of fruits and vegetables each day.
Impact of Five Innovative Technologies to Process Fruits and Vegetables

- Forming
- Extrusion
- Casting
- Coating
- UV Treatment
Forming Technology (McHugh and Huxsoll)
100% Fruit Bars
100% Fruit Bars

• Sell 500,000 Just Fruit bars and 200,000 other labels annually
• Amounts to half million pounds of fresh fruit annually
• Gross sales $500,000 annually, 40 new jobs in rural area
• Total bars sold 5.5 Million – amounts to millions of pounds of fruit that would have been thrown away
• Sold around globe – Iran, Japan, Mexico, Canada, Peru, etc.
Obesity Prevention Bars

CRADA with CHORI
Development of an Obesity Prevention Bar
Extrusion Technology (Berrios)
U.S. Patent Application:
“Extruded Legumes”
Serial No. 11/64,1318
Casting Technology (McHugh)
Fruit and Vegetable Edible Films

Fruit and Vegetable Based Nori

Ham Glaze Sheets
Fruit and Vegetable Edible Films

- Sold $400,000 of fruit and vegetable wraps this year
- Equates to 131,555 pounds of fruits and vegetables
- Expects to sell over $1M fruit and vegetable films next year
- 10 new jobs in rural area
Coating Technologies (Wong)

NatureSeal treated apple slices sold nationwide and beyond

Morning Fruits Co., Ltd.
South Korea

Salico Nordic Co.
Scandinavia

Disney Garden Products

McDonald's apple dippers

McDonald's fruit & walnut salad

Burger King apple fries

NatureSeal for FRUITS

NatureSeal is available for the following fruits:
- Apples
- Pears
- Bananas
- Kiwi
- Blackberries
- Grapes
- Raspberries
- Strawberries
- Watermelon
- Mango
- Pineapple
- Pomegranate
- Blackberry
- Concord
- Green and Red Grapes

NatureSeal for VEGETABLES

NatureSeal is available for the following vegetables:
- Bell Peppers
- Carrots
- Leek (lamba and terrace)
- Celery
- Spinach
- Onions
- Fresh Tweets
- Sweet Potato
- Green Giant Snow Peas


McDonald’s Apple Dippers

- Sold $54 Million pounds of apples in 2005.
- Coat 50,000 apples a day
Ultraviolet B Processing
(McHugh and Roberts)

- 40% Americans deficient in Vitamin D
- 15 seconds of UV-B Treatment Produce 100X current RDA in serving of mushrooms
Innovative Mushroom Processing to Develop a Novel, Value-Added Source of Vitamin D
Novel Ultraviolet B Process Being Used Nationwide on All Mushroom Varieties by #1 Mushroom Producer in U.S.

Mushroom Council funding Western Human Nutrition Research Center to test human bioavailability of vitamin D from mushrooms versus capsules
Innovation versus Invention

“Never before in history has innovation offered promise of so much to so many in so short a time.”

Bill Gates