

Session 4

Sustainable Supply of Consumer-Satisfied Safe and High Value-Added Food

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A New Open Space “Ba”, to discuss how to encourage the studies on safe and high value-added foods

1. Breeding crops for better nutrition.

Dr. Howarth Bouis

Director, HarvestPlus Challenge program,
International Food Policy Research Institute (IFPRI)

2. Rice Molecular Breeding in Thailand; focusing on aromatic rice.

Dr. Apichart Vanavichit

Head, Rice Gene Discovery Unit,
National Center for Genetic Engineering and Biotechnology,
Kasetsart University,

3. Molecular Breeding for enhancing tolerance to low iron
availability in calcareous soils.

Dr. Naoko K. Nishizawa,

Professor, Laboratory of Plant Biotechnology

Department of Global Agricultural Sciences

The University of Tokyo

4. Dr. Toru Fujiwara

Innovative technologies for improving a new variety

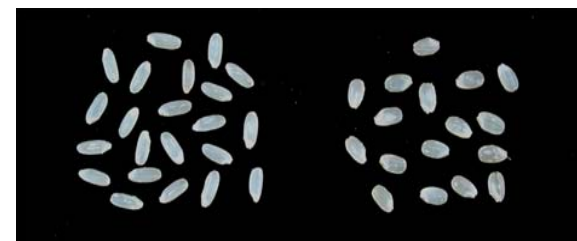
Development of new foods and/or new materials

Purple sweet potato



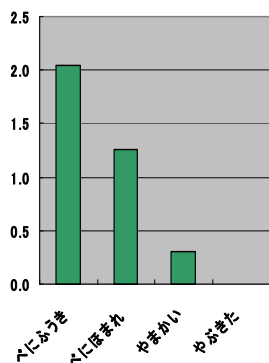
A new variety AYAMURASAKI containing a functional pigment, **Anthocyanin**

New rice variety for curry

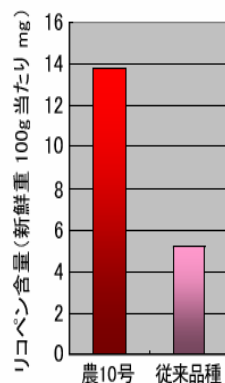


Left [華麗舞], rice for curry
Right: Koshikikari

Benifuuki, a new green tea



High **lycopene** tomato



高リコペントマトの育成系統(中間母本農10号) 従来品種

A new tomato containing high lycopene with anti-oxidation effect

New materials for medical use

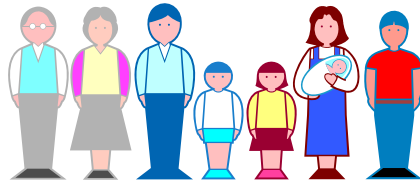


Silkworm producing a high protein containing silk for medical use

The new green tea contains an anti-allergic materials methyl-kakitene

Development of tailor-made foods using by nutrigenomics

All-inclusive analyses of gene expression contribute to evaluate the safety and function of food components and to offer the menu for individual constitution and physical condition



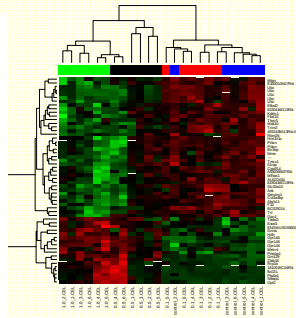
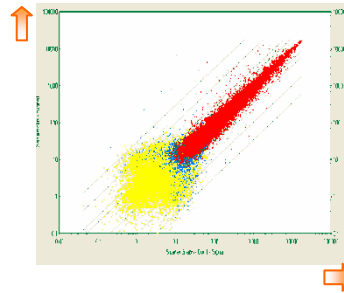
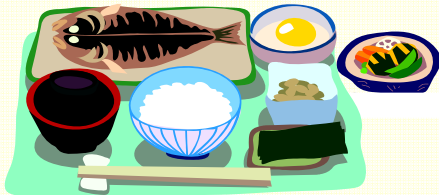
Individual characterization



Integrated data
base system

1. Polymorphism
2. Functional components

Tailor-made foods for each person



Measurement of the gene
expression using DNA micro-
array, after feeding the samples
to experimental animals

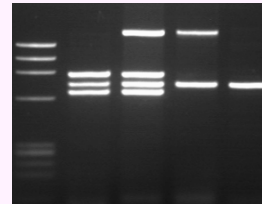


Characteristics of tailor-made foods

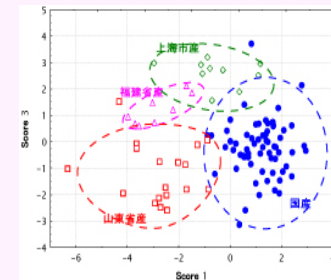
- Able to choose the foods containing effective components according to individual gene information
- Able to predict the safety and effectiveness of foods
- Able to offer the menu for well balanced and functional meals

Distinction of variety and locality

Discrimination method using by DNA technology



ササニシキ
あきたこまち
ひとめぼれ
コシヒカリ



Principal component analysis

Role in the food chain

Production



Processing



Distribution



Consumer

Elimination of camouflage food

Imported foods

Rapid and reliable methods for food label

Food safety and intellectual property