Session 4

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

Yoshihiro Hayashi, Ph.D.
Professor, Graduate School of Agricultural & Life Sciences,
The University of Tokyo, Japan

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

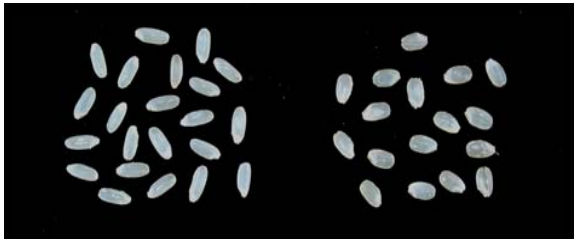
Innovative technologies for improving a new variety

Development of new foods and/or new materials

Purple sweet potato

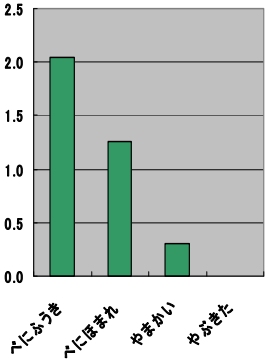
A new variety AYAMURASAKI containing a functional pigment, Anthocyanin

New rice variety for curry



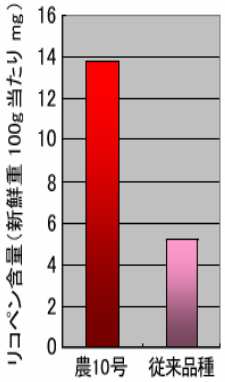
Left [華麗舞], rice for curry
Right: Koshikikari

Benifuuki, a new green tea



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

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

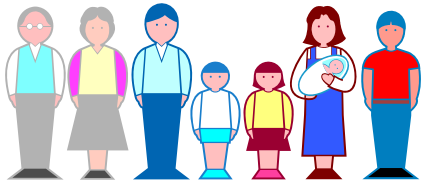
A new tomato containing high lycopene with anti-oxidation effect

New materials for medical use

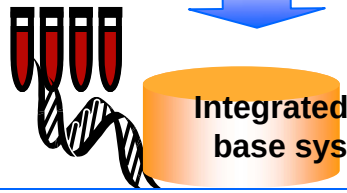
Silkworm producing a high protein containing silk for medical use

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



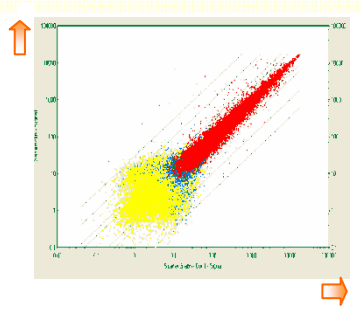
Individual characterization

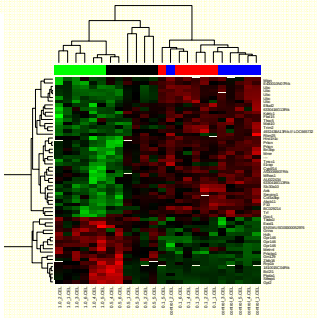


Integrated data base system

1. Polymorphism
2. Functional components

Tailor-made foods for each person





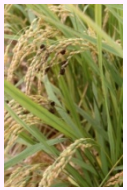
Measurement of the gene expression using DNA micro-arrey, after feeding the samples to experimental animals

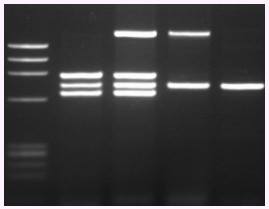
Characteristics of tailor-made foods

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

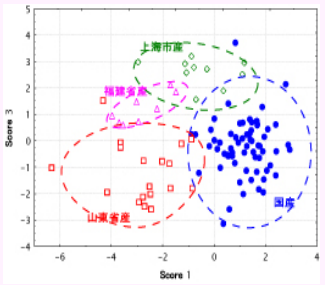
Distinction of variety and locality

Discrimination method using by DNA technology





コシヒカリ　ひとめぼれ　あきたこまち　ササニシキ



Principal component analysis

Role in the food chain

Production → Processing → Distribution → Consumer

Imported foods → Elimination of camouflage food

Rapid and reliable methods for food label

Food safety and intellectual property