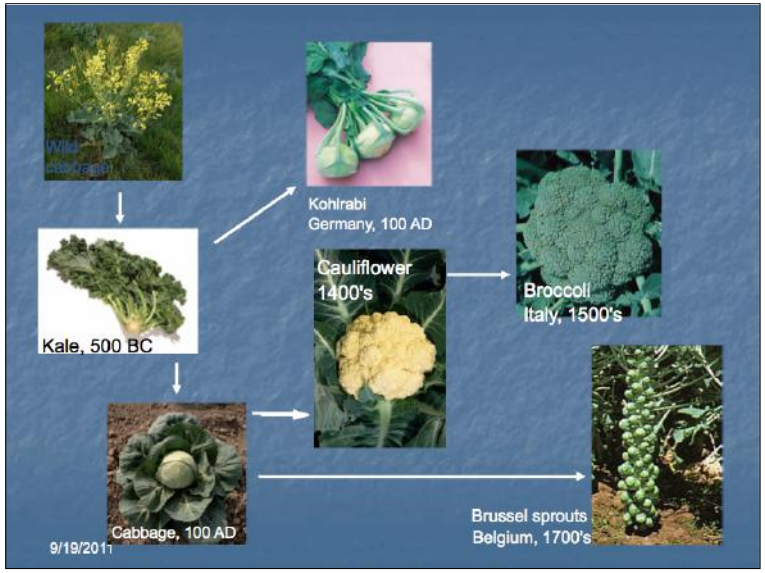

What's GMO?
Sex: Cara cepat hasilkan GMO

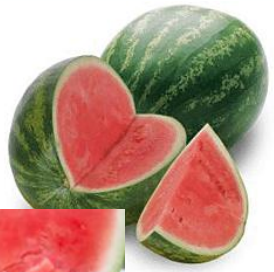

Ragam jeruk: Hasil modifikasi genetik melalui sex


Kohlrabi
Germany, 100 AD
Kale, 500 BC
Cauliflower
1400's
Broccoli
Italy, 1500's
Cabbage, 100 AD
Brussel sprouts
Belgium, 1700's
9/19/2011


Some crops never existed in nature
Einkorn x wild wheat
Emmer x goat grass
Bread wheat
9/19/2011
www.mpiz-koeln.mpg.de/pr/garten/schau/Triticumaestivum/wheat.html

Genetically modified to create Diversity by Sex

Seedles Fruits: **Chemically-induced GMO**. Are they safe?
We never questioned it;
Just enjoy them

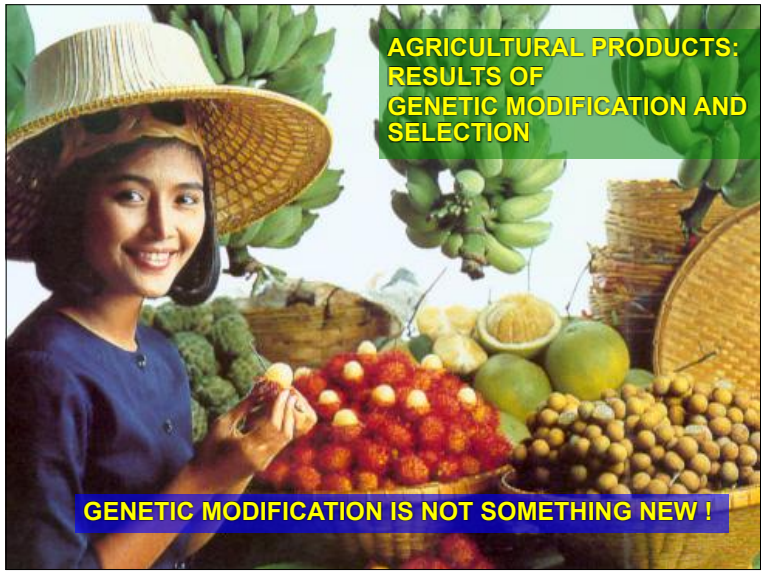


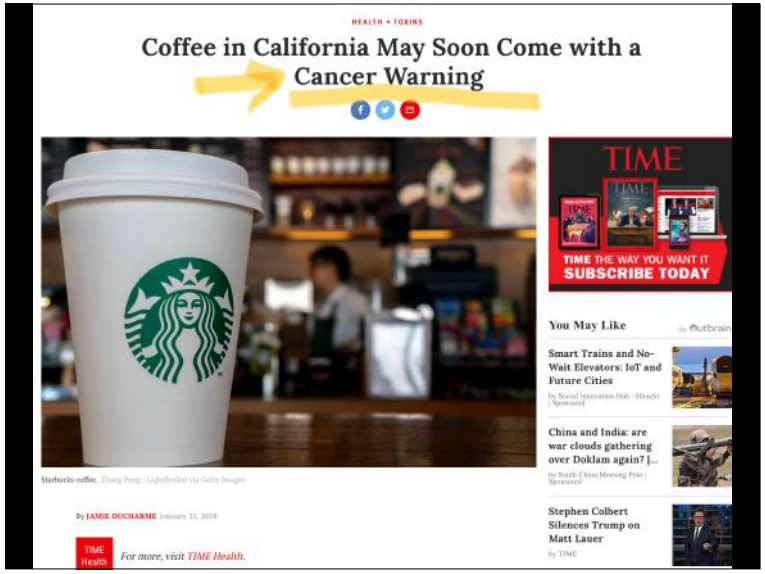
Genetic Modification: Physical

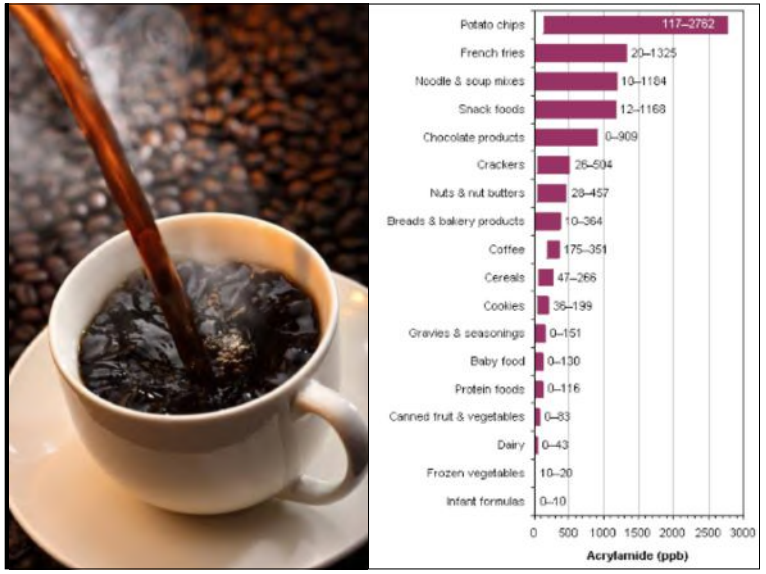
JEMBER, KOMPAS.com — Kedelai varietas rajabasa yang dikembangkan Badan Tenaga Nuklir Nasional (Batan), yang mampu menghasilkan 2,6 ton per hektar, diharapkan membangkitkan kembali minat petani menanam kedelai. Sebelumnya, petani telah mengenal varietas mutiara yang menghasilkan 4 ton per hektar.

TERKAIT:

- Cara Aman Konsumsi Kedelai
- Harga Kedelai Berjangka Meningkat
- Petani Minta Adanya HPP Kedelai
- Harga Kedelai Terus Terpuruk
- Mentan Panen Kedelai di Purworejo







Asparagine in Various Crops

• Cheese	40 – 300 mg/100gm
• Asparagus	5.4 – 108 mg/100gm
• Cocoa (raw)	30.9 mg/100gm
- roasted @ 125^{0}C	14.5 mg/100gm
- roasted @ 135^{0}C	9.4 mg/100gm
• Potato	500 – 1000 mg/100gm
• Rye	0.2 – 2.8 mg/100gm
• Wheat	0.2 – 20 mg/100gm
• Corn	0.6 – 1 mg/100gm

Decrease Asn synthetase

Source: Ellin Doyle, Ph.D., Food Research Inst., U. Wisc.

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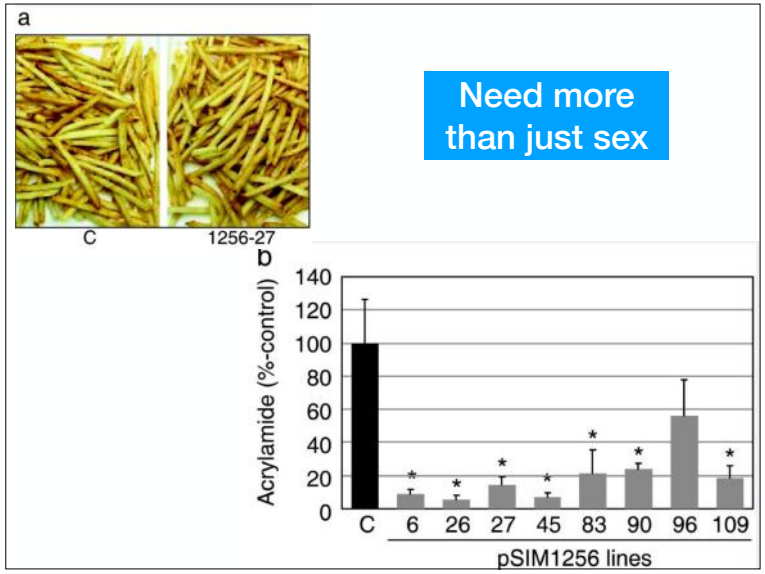

Need more than just sex

Plant Biotechnol J. 2008 Oct; 6(8): 843–853.
doi: 10.1111/j.1467-7652.2008.00363.x
PMCID: PMC2607532

Low-acrylamide French fries and potato chips

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Abstract Go to:

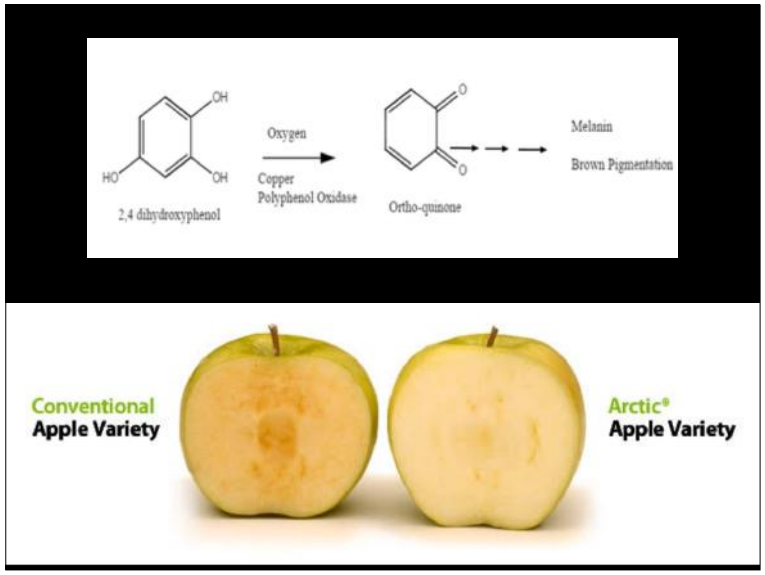
Acrylamide is produced in starchy foods that are baked, roasted or fried at high temperatures. Concerns about the potential health issues associated with the dietary intake of this reactive compound led us to reduce the accumulation of asparagine, one of its main precursors, in the tubers of potato (*Solanum tuberosum*). This metabolic change was accomplished by silencing two asparagine synthetase genes through 'all-native DNA' transformation. Glasshouse-grow[PRG]he transformed intragenic plants contained up to 20-fold reduced levels of free asparagine. [PRG]ic change coincided with a small increase in the formation of glutamine and did not affect tuber shape or yield. Heat-processed products derived from the low-asparagine tubers were also indistinguishable from their untransformed counterparts in terms of sensory characteristics. However, both French fries and potato chips accumulated as little as 5% of the acrylamide present in wild-type controls. Given the important role of processed potato products in the modern Western diet, a replacement of current varieties with intragenic potatoes could reduce the average daily intake of acrylamide by almost one-third.

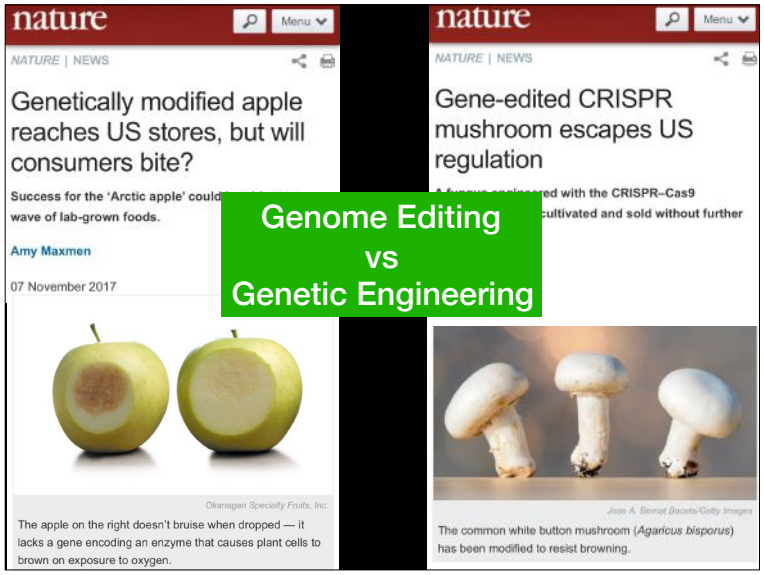
Keywords: acrylamide, intragenic, plant biotechnology, potato

GMO:
Modifikasi genetik melalu
Rekayasa Genetika
PRG

Okanagan Specialty Fruits, Inc.

The apple on the right doesn't bruise when dropped — it lacks a gene encoding an enzyme that causes plant cells to brown on exposure to oxygen.


OH
HO
OH
2,4 dihydroxyphenol
Oxygen
Copper
Polyphenol Oxidase
O
O
Ortho-quinone
Melanin
Brown Pigmentation
Conventional
Apple Variety
Arctic®
Apple Variety


nature
Menu
NATURE | NEWS
Genetically modified apple reaches US stores, but will consumers bite?
Success for the 'Arctic apple' could
wave of lab-grown foods.
Amy Maxmen
07 November 2017
Okanagan Specialty Fruits, Inc.
The apple on the right doesn't bruise when dropped — it lacks a gene encoding an enzyme that causes plant cells to brown on exposure to oxygen.
nature
Menu
NATURE | NEWS
Gene-edited CRISPR mushroom escapes US regulation
ed with the CRISPR–Cas9
cultivated and sold without further
Jose A. Bernat Bacete/Getty Images
The common white button mushroom (Agaricus bisporus) has been modified to resist browning.
Genome Editing
vs
Genetic Engineering


MARCA LEON
100% PURE PREMIUM
CORN
OIL
NON-GMO
NO CHOLESTEROL
HALAL
GROSS WEIGHT: 17 kgs.
HANDLE WITH CARE
Golden Drop
Golden Drop


Plant, animal, and microbial cultivation:
As old as human civilization
Approx 10,000 years ago
Pre-Agricultural practices:
As a hunter or gatherer