Netherlands Food and Consumer
Product Safety Authority
Ministry of Economic Affairs

42.4 kg of food found in New Zealand household rubbish

Options to extend Annex X Reg 1169/2011: No date marking on foods

Dr.ir. Aarieke de Jong
NVWA
Office for Risk Assessment and Research

Brussels, Nov 7th 2017

Line out

Based on Advisory Report

Date marking

Food safety

→ Safe not to date mark?

Background - Advisory Report

Q: How to reduce Food Waste (Government NL)

Option x: Reduce unnecessary waste due to date marking

Research Q @ Office for Risk Assessment - NVWA

Research Questions

- "Quick win" option extending Annex X?
  → focus on long shelf-life foods
- Product criteria?
- Exceptions?
- Proposal EC WG Food Labelling?

Annex X

Annex of Reg EU 1169/2011

→ Food Information Regulation

Aim: High level of health protection

Food Information Regulation

Mandatory food information

- Identity, composition etc
- Nutritional aspects
- Protection of consumers' health, safe use, incl. durability & storage

Background – Date marking

Food in the EU must be date marked
(Reg EU 1169/2011)

- Date of minimum durability

Background – Date marking

Date of minimum durability

Date until which the food retains its specific properties when properly stored

→ 'Best before' date

< 3 months	day, month	21-Jan
>3, <18 months	month, year	Jan 2018
>18 months	year	2018

Background – Date marking

Food in the EU must be date marked
(Reg EU 1169/2011)

- Date of minimum durability
- Use by date

Background – Date marking

Use By Date

In the case of FOODS which, from a MICROBIOLOGICAL point of view, are HIGHLY PERISHABLE and are therefore likely after a short period to constitute an IMMEDIATE DANGER TO HUMAN HEALTH, the date of minimum durability shall be replaced by the 'USE BY' DATE. After the 'use by' date a food shall be deemed to be UNSAFE in accordance with Article 14(2) to (5) of Regulation (EC) No 178/2002.

Background – Date marking

Food in the EU must be date marked
(Reg EU 1169/2011)

- Date of minimum durability
- Use by date
- Exceptions: Annex X

Annex X

Exempted from date marking:

Products for which

- Deterioration is clearly visible

  → spoilage before harmful to health

- No spoilage possible (pH, Aw etc)

Annex X

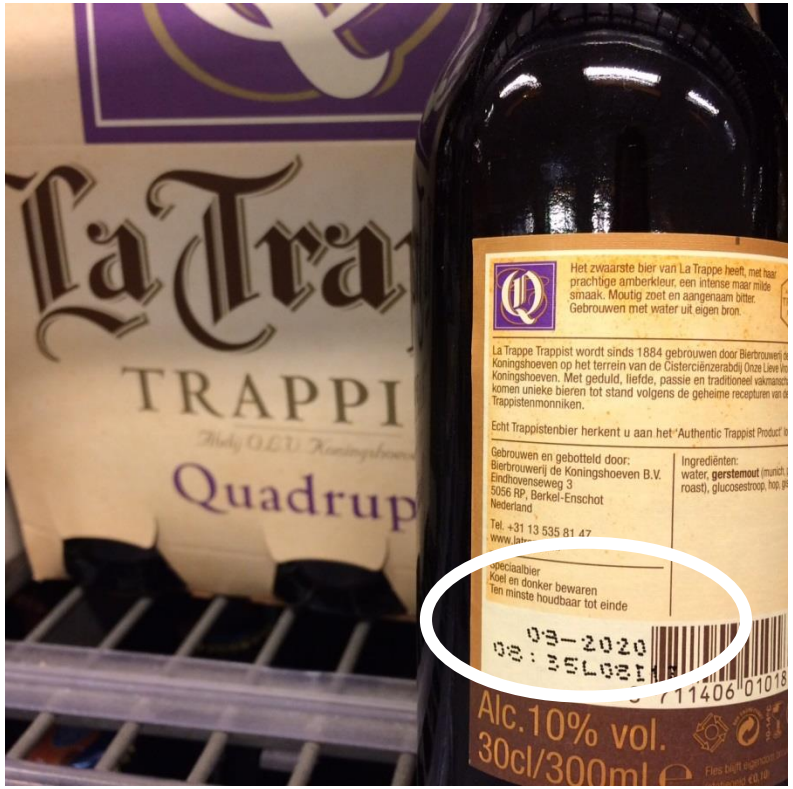
- fresh fruit and vegetables

Annex X

- fresh fruit and vegetables
- wines

Annex X

- fresh fruit and vegetables
- wines
- beverages >10 % alcohol



Annex X

- fresh fruit and vegetables
- wines
- beverages >10 % alcohol
- bakers' or pastry cooks' wares consu
- vinegar

Annex X

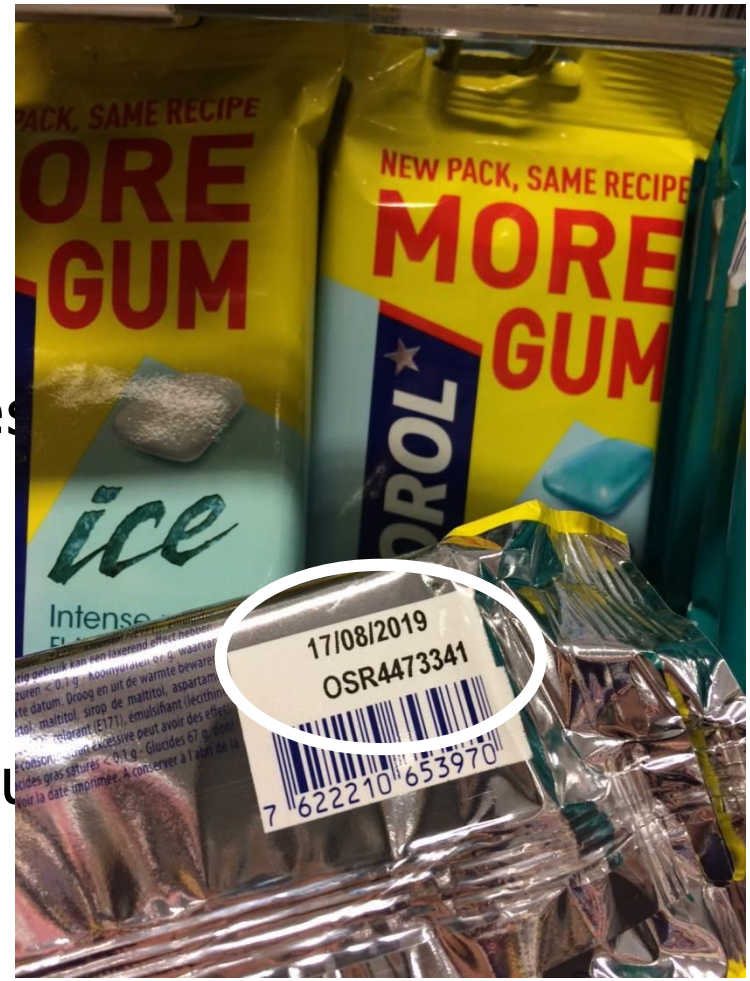
- fresh fruit and vegetables
- wines
- beverages >10 % alcohol
- bakers’ or pastry cooks’ war
- vinegar
- cooking salt

Annex X

- fresh fruit and vegetables
- wines
- beverages >10 % alcohol
- bakers' or pastry cooks' wares consumed <24H
- vinegar
- cooking salt
- solid sugar
- confectionery products (flavoured/coloured sugars)

Annex X

- fresh fruit and vegetables
- wines
- beverages >10 % alcohol
- bakers’ or pastry cooks’ wares
- vinegar
- cooking salt
- solid sugar
- confectionery products (flavou
- chewing gums



Why date marking?

Aim Food Information Regulation

High level of health protection

Date marking → To protect consumers' health

Thus….

Foods that will not turn harmful ….

Need no date marking

How do foods turn harmful?

Decay - Oxford dictionary

- Rot or decompose (microbiologically)
- Deteriorate (structural, physical)
- Decline in quality

How do foods turn harmful?

Decay - Oxford dictionary

- Rot or decompose (microbiologically)
- Deteriorate (structural, physical)
- Decline in quality

Unsafe – Reg EC 178/2002 (General Food Law)

- Injurious to health

How do foods turn harmful?

Decay - Oxford dictionary

- Rot or decompose (microbiologically)
- Deteriorate (structural, physical)
- Decline in quality

Unsafe – Reg EC 178/2002 (General Food Law)

- Injurious to health
- Unfit for human consumption

Background – Decay / Food spoilage

Physical deterioration

- Drying out, absorbing water
- Settling
- Machanical damage

→Organoleptic changes

→Not harmful

Background – Decay / Food spoilage

Biological deterioration

- Maggots
- Insects
- Worms
- Mice

→Depends on storage conditions

→Not affected by date marking

Background – Decay / Food spoilage

Chemical deterioration

Light, oxygen, enzymes

- colour
- flavour
- texture

→Mainly affects quality

→Organoleptic changes

→Biogenic amines!

Background – Decay / Food spoilage

Microbiological deterioration

- Mould
- Yeast
- Bacteria

→Not always organoleptic changes

→Not always harmful

Background – Decay / Food spoilage

Microbiological deterioration

Harmfull → Pathogens

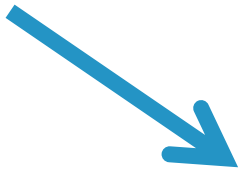
Bacteria: Salmonella, Listeria, STEC, Campylobacter
Virusses: Hepatitis A & E virus, Norovirus
Parasites: Toxoplasma, Giardia, Trichinella

Only bacteria can grow in food

When are pathogens harmful?

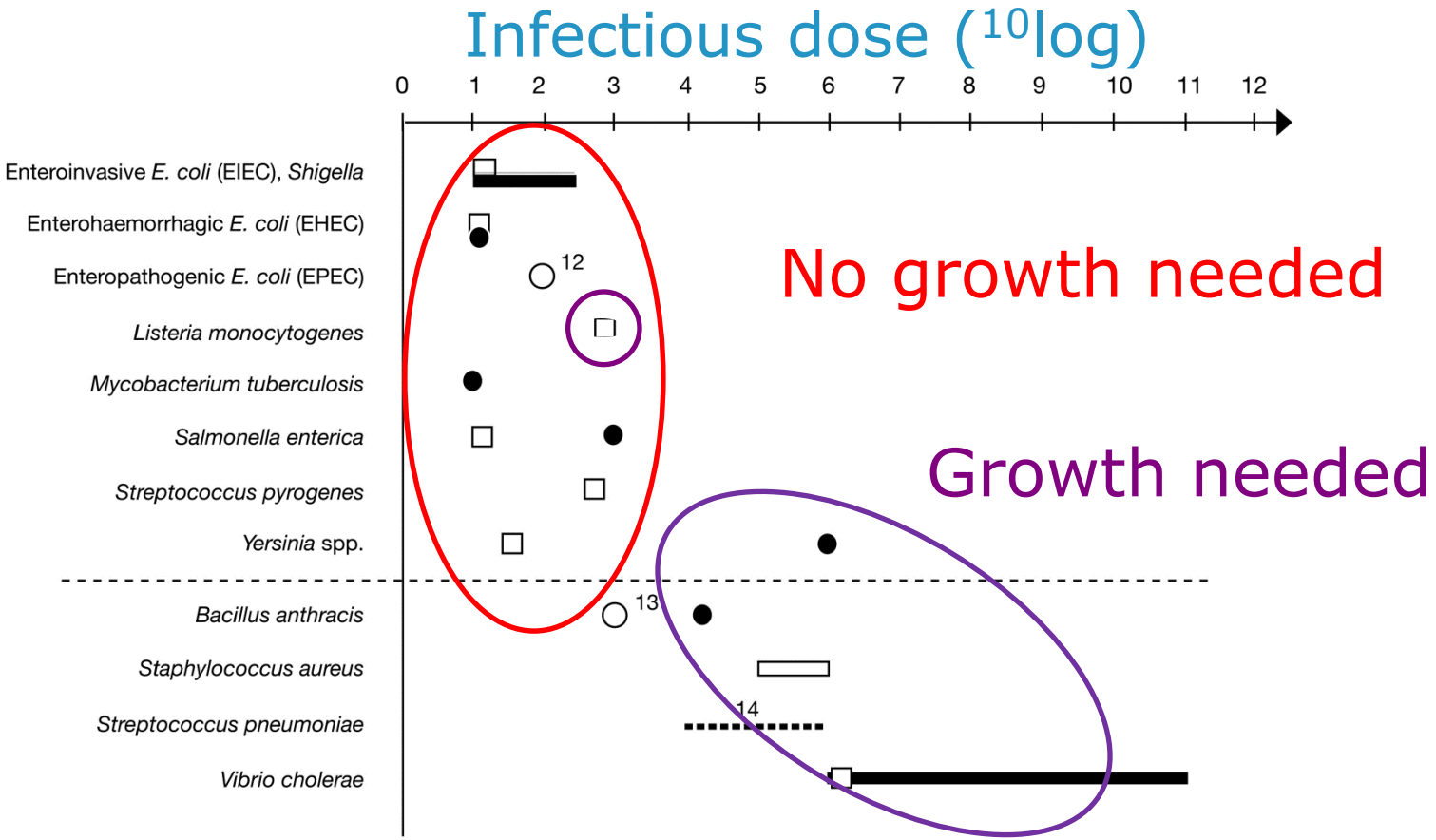
Depends on

- Individual
- Food matrix
- Type of pathogen
- Infectious dose



Date Marking

When are pathogens harmful?



Source: Schmid-Hempel & Frank, 2007

How to keep food safe?

- Hygiene → Prevent contamination
- HACCP → Eliminate / Reduce risk

Eliminate risk

- Sterilisation
  - can
  - hermetically sealed packaging

Note: not all canned food is sterile
storage temperature, RH (tropics)

How to keep food safe?

- Hygiene → Prevent contamination
- HACCP → Eliminate / Reduce risk

Reduce risk: Prevent growth

- Type of pathogen
- Product characteristics
- Process: heating, drying
- Storage: light, temperature packaging, time

Date marking

Reduce risk: Prevent growth

Product characteristics: pH

Source: Wijtzes *et al.*, 2007

Reduce risk: Prevent growth

Product characteristics: Water activity (Aw)

>0.85	Moist food	Refrigeration, other barrier to control pathogen growth	Vegetables, fish, (cured) meat, salami, milk, cheese, margarine, sponge cake
0.60-0.85	Intermediate moisture food	No refrigeration, Short shelf-life, Spoilage by yeast and mould	Jam, jelly, nuts, some dried fruits, soy sauce, peanut butter
<0.60	Low moisture food	No refrigeration, Extended shelf-life	Dried fruits, noodles, pasta, spices, cookies

Reduce risk: Prevent growth

Combined effects: 'hurdle' technology

Unrefridgerated storage: no growth / growth

Heated & packaged

a_w	pH		
	<4.6	4.6 – 5.6	>5.6
<0.92			
0.92 – 0.95			
>0.95			

Heated & unpackaged
Unheated

a_w	pH			
	<4.2	4.2 – 4.6	4.6 – 5.0	>5.0
<0.88				
0.88 – 0.90				
0.90 – 0.92				
>0.92				

No date marking needed for …

Foods that

- Are and remain sterile
- Very short-shelf life
- Cleary spoil, before getting harmful
- Bacterial growth not supported / die off due to product characteristics

Research Questions

- "Quick win" option extending Annex X?

→ Focus on long shelf-life foods

- Product criteria?
- Proposal EC WG Food Labelling?
- Exceptions?

Answers

Product criteria

- Sterilised in a can
- Sterilised in other hermetically sealed packaging
- Water activity (a_w) <0.60
- Acidity (pH) <3-4
- Lower a_w + additional inhibiting factor:

  a_w <0.85 + low pH / preservative
- Storage temperature < -18° C

Keep in mind

- Unless sterilised, these foods may contain pathogens
- Pathogens won't grow, but may survive

FDA, Oct 16th
Spicely Organics Recalls Organic Tarragon Because Of Possible Health Risk (Salmonella)

Keep in mind

Extension Annex X ?

Annex X contains 9 food(groups)

- >10% alcohol
- Low water activity or low pH
- Short shelf life / spoil first

→ Base Annex X on (product) criteria

Research Questions

- "Quick win" option extending Annex X?
- Product criteria?
- Exceptions?
- Proposal EC WG Food Labelling?

Keep in mind

Shelf-life = safety & QUALITY

Loss of flavour

Loss of crunchyness

Loss of nutrients / vitamins

→ failure to comply to labelled food information…

Keep in mind

Shelf-life = safety & QUALITY

Exceptions: Need a mark

- Infant formula
- Foods for medical purpose

→Must retain all product characteristics

→Vitamins, nutrients, dissolvability etc.

Keep in mind

Not all spoiled food is harmful,

but because

Not all harmful food is spoiled

&

‘spoiled’ food is unfit for consumption

you need

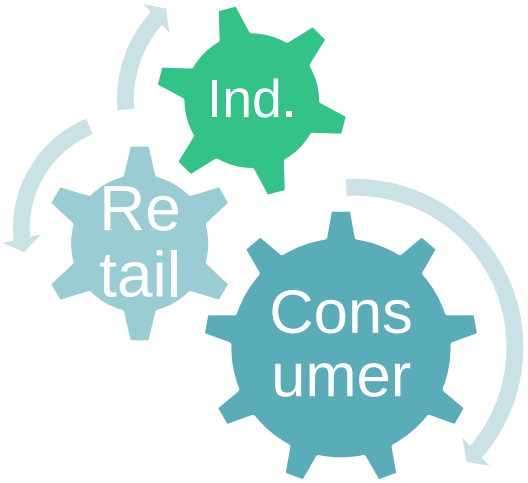
Date marking

Keep in mind

Regarding date marking:

- Food safety → microbiology
- Shelf-life → also quality
- Annex X
  - → extended (also quick win)
  - → exemption not obligation
  - → **CRITERIA BASED**

Succesfull?



Thank you for your attention

THE

END