Industry Perspective:
Food Safety Awareness - Current Practices and Issues

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Safety Management

Authoritative scientific evidence and guidance to help identify and manage:

- **Risks for consumers, workers and environment to ensure Safety of products and supply chain technology**
- **Environmental impacts and Sustainability of Unilever's brands, products & Supply Chain**

Leveraging our scientific expertise and external partnerships in safety and environmental sustainability

SAFE and SUSTAINABLE DESIGN and EXECUTION of Innovation and Technology

Safe & Sustainable Products & Processes by Design

- Safe by Design and in Execution

SAFE and SUSTAINABLE
DESIGN and EXECUTION of
Innovation and Technology

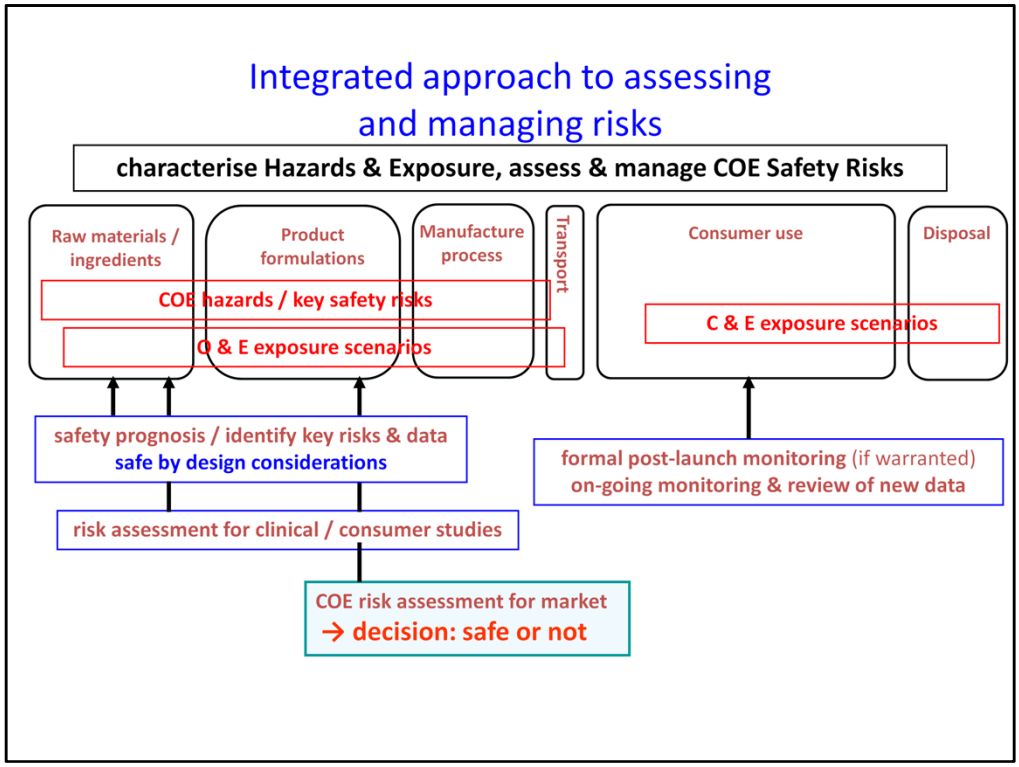
- Integrated assessments covering Consumer, Occupational & Environmental (COE) Safety

Safe in use

- Transparent & Accessible – data, expertise
- Safety Decisions are Risk-based

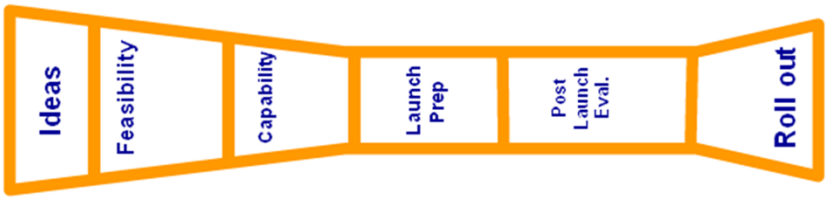
Unacceptable Risk → Acceptable Risk

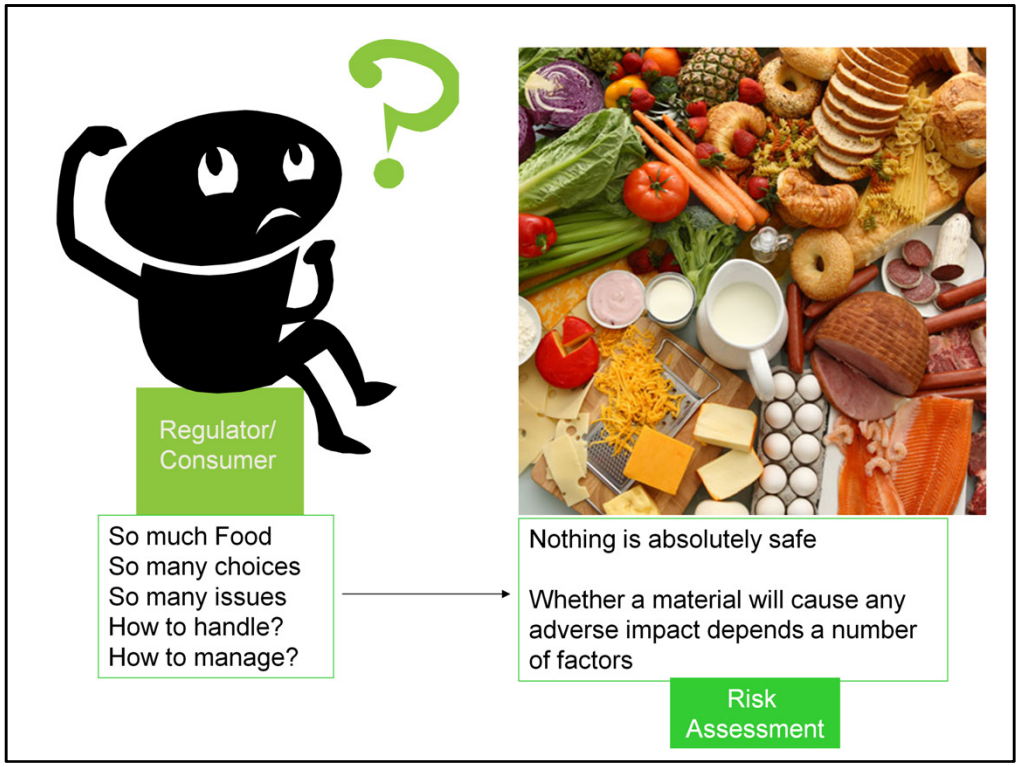
Consumer | Occupational | Environmental


Integrated approach to assessing and managing risks
characterise Hazards & Exposure, assess & manage COE Safety Risks
Raw materials / ingredients
Product formulations
Manufacture process
Transport
Consumer use
Disposal
COE hazards / key safety risks
C & E exposure scenarios
C & E exposure scenarios
safety prognosis / identify key risks & data
safe by design considerations
formal post-launch monitoring (if warranted)
on-going monitoring & review of new data
risk assessment for clinical / consumer studies
COE risk assessment for market
→ decision: safe or not

Key steps in food safety assurance

- **Establishing a safe design**
  - Identification of realistic hazards
  - Agreement on product safety benchmarks
  - Establishing effective preventative and control measures
- **Establishing safety in execution**
  - Implementation of agreed controls
  - Monitoring and review of safe market performance





You all will agree that in this country we are witnessing an explosion of food choices. Besides the large variety of local foods from different parts of the country, many consumers can readily access foods from the orient, to Europe and the Americas. Chinese, Italian, Lebanese, Mexican cuisines are fairly common not only n restaurants but also in homes. Add to this the complexity of the evolving supply chain where fresh produce markets as well as the up-market superstores and everything in between needs to be serviced – the challenges for consumers as well as regulators are immense

Safety Risk Assessment

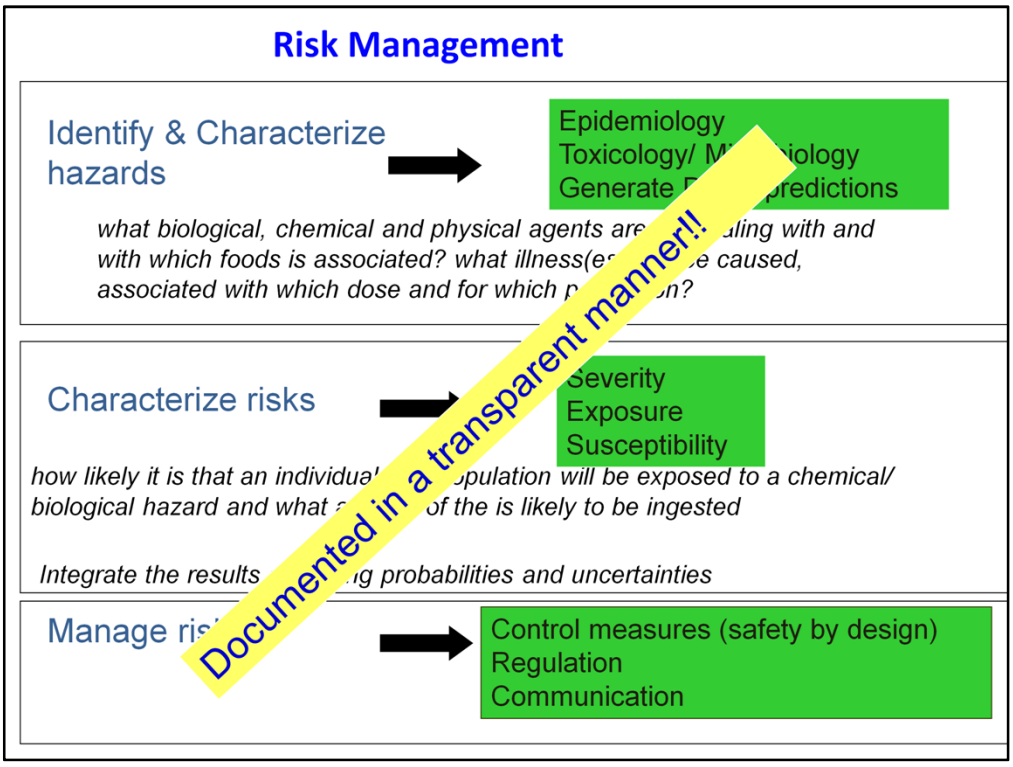
- For any ingredient/ product safety Risk Assessment is a function of:
  - Hazard – potential harmful effects
    - Intrinsic hazard of material
    - Safety concerns due to functionality
    - Vulnerability of the intended consumer

  - Exposure – how much will the consumer be exposed to?
    - Normal habits & practices
    - Amount of ingredient in product

  - Consumer Goods
    - No risk/benefit
    - No controls
  - Also need to consider Environmental safety, Occupational safety and Sustainability

A risk-based approach provides the opportunity to focus the resources to the right outcomes in terms of consumer safety.

Let me elaborate a bit.


Risk Management
Identify & Characterize hazards
Epidemiology
Toxicology/ M iology
Generate predictions
what biological, chemical and physical agents are ling with and
with which foods is associated? what illness(e e caused,
associated with which dose and for which p n?
Characterize risks
Severity
Exposure
Susceptibility
how likely it is that an individua pulation will be exposed to a chemical/
biological hazard and what of the is likely to be ingested
Integrate the results g probabilities and uncertainties
Manage ris
Control measures (safety by design)
Regulation
Communication
Documented in a transparent manner!!

Risk based thinking – early beginnings

Alle Ding' sind Gift, und nichts ohn' Gift; allein die Dosis macht, daß ein Ding kein Gift ist

"All things are poison and nothing is without poison, only the dose permits something not to be poisonous."

Paracelus 1493-1541

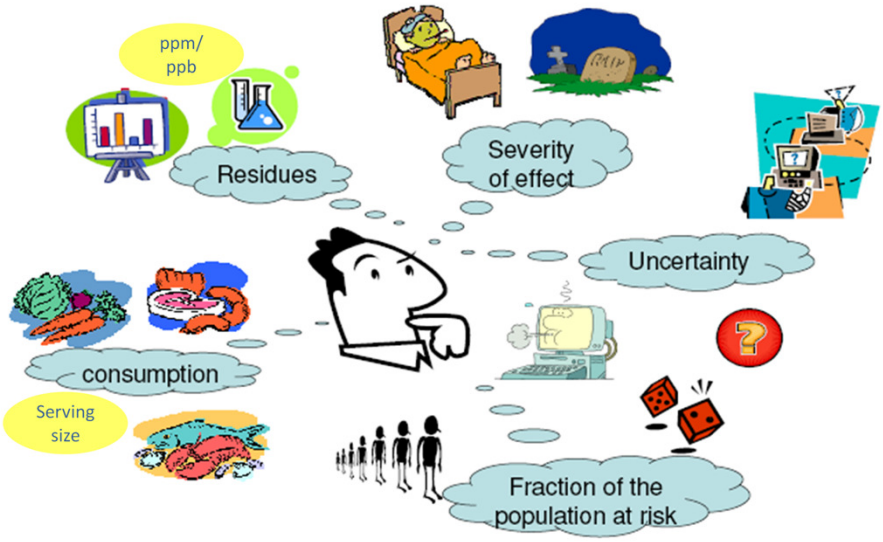
Pure Water

- Can cause fatal disturbance in brain function that results from the disruption of the normal balance of electrolytes in the body
- Hyper hydration or water poisoning
- Occurs when large amounts of water are consumed, particularly over short periods of time
- Can occur in athletes whose electrolyte levels are depleted & who consume excessive amounts of water

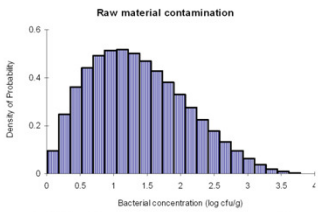
NEWS

Woman loses sight after drinking too much water

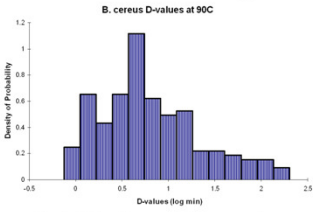
Quantifying Risks - Modeling



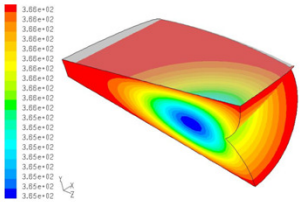
Manufacturing aspects



Variability in spore levels in ingredients

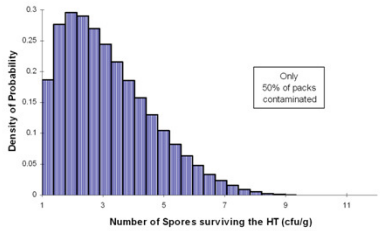


Variability in spore heat resistance

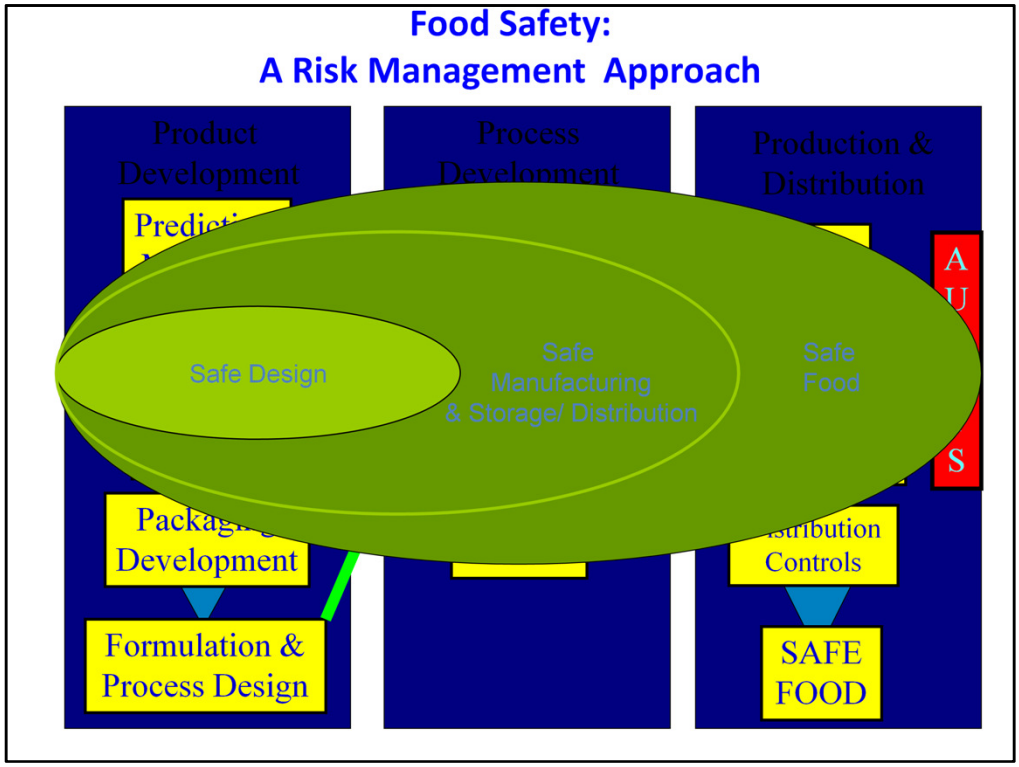


Variability in heat impact

Number of surviving spores in contaminated packs



J.-M. Membré, A. Amézquita, J. Bassett, P. Giavedoni, C. de W. Blackburn, L.G.M. Gorris. (2006) *J. Food Prot.*, **69**: 118-129.


Food Safety:
A Risk Management Approach
Product Development
Process Development
Production & Distribution
Safe Design
Safe Manufacturing & Storage/ Distribution
Safe Food
Development
Controls
Formulation & Process Design
SAFE FOOD

Risk-based approach
Facilitates Safe Innovation

Hazard-based

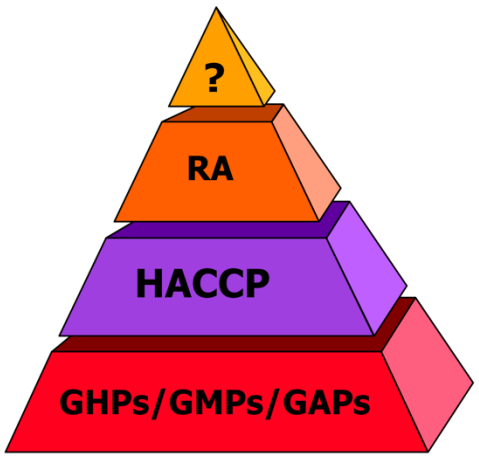
- check-list compliance
- unnecessary testing
- doesn't consider how product is used
- yes / no decisions
- unexplored uncertainties

Risk-based

- expertise- & evidence-driven
- essential testing only
- product use / exposure determines outcome
- options to manage risks
- uncertainties explicit

Risk Analysis (CODEX) = the common framework

- Risk Analysis:
  - Risk Management
  - Risk Assessment
  - Risk Communication
- Triggered by World Trade Organisation (WTO)
- Advocated by many governments and inter-governmental organisations (FAO, WHO)



The Risk Analysis framework was not developed starting after the SPS agreement.

It was under developed since the early 90's, but after the SPS agreement had been agreed on Risk Analysis and most of it's component parts experienced a very fast evaluation to final Codex products

the component parts are:

risk management

risk assessment

risk communication

- **Food Safety - a National priority**
  - Establishment of FSSAI - a key milestone for the country
  - Next steps:
    - Evolve a modern science-based and risk-based food safety system
    - Strengthen health surveillance systems
    - Robust assessment of health issues linked to foods
    - Build global capabilities – resources, expertise and infrastructure
    - Laboratory infrastructure
    - Contaminants:

      (i) Expertise to analyze a wide range of contaminants &

      (ii) Data and insights around stage(s) of the chain at which contamination occurs
    - Risk Assessment , Management and Communication

      Capabilities & Mindset
  - Collaboration and Networking

    National & International – consider instituting a national food safety network

Role of industry

- In-depth scientific and technical knowledge of hazards and risks relating to a commodity/ food
- Understanding of issues (e.g. contamination) arising across different stages of supply chain for specific commodities/ foods
- Access to global expertise and capabilities
- Knowledge of evolving regulatory scenario across the world

- Support capability build in the country
- Provide expertise in key areas related to food safety
- Linkages with Key opinion formers &
- Academic (& industry) scientists
- Access to Global networks
- Provide materials, inputs and resources for training in the areas of product safety and risk assessment
- Provide support to develop, maintain, and roll-out of IT tools and data structures


FOOD SAFETY
INTERNATIONAL
NETWORK
GLOBAL FOOD SAFETY
& EXCELLENCE QUALITY
AMERICA / EUROPE / LATIN AMERICA / ASIA PACIFIC/MIDDLE EAST
WHO WE ARE
EXCLUSIVE GLOBAL NETWORK
HOW WE CAN HELP YOU
JOIN US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EVENTS
NEWS
Member Login
Username
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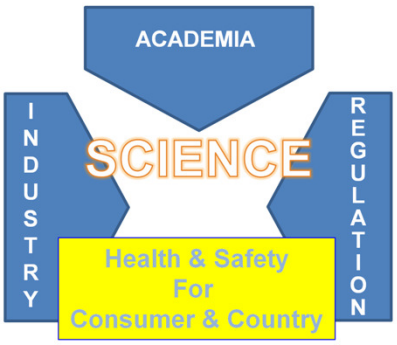
INTERNATIONAL
Food Safety
NETWORK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Consumer & Country