



Integrated Approach to Risk Assessment: from Plants to Animals and Humans

Riitta Maijala
Director of Risk Assessment

Conference on Food Safety, Animal Health and Consumer Protection

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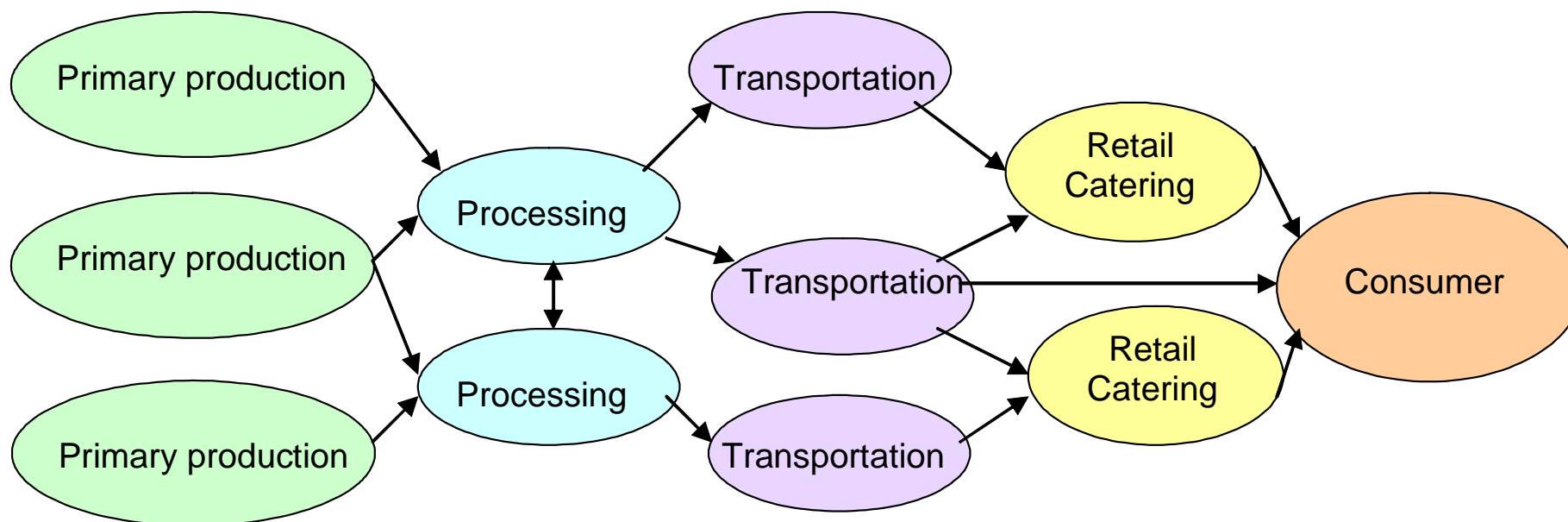
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Challenges today and tomorrow

- Increasingly globalised food supply
- Climate change
- New technologies
- Shifting socio-demographic patterns
- Increasing demand for ethically produced foods and sustainable production practices
- Energy production and price

Options for risk management



Preapproval
Import restrictions

Options during production,
processing and transport

Consumer
information

Why we need integrated approach in risk assessment?

- To cover interrelated scientific issues
- To give better support for decision making
- Risk assessments deal with
 - Hazards of natural origin
 - Risks caused by production methods
 - Substances added in the food chain
 - New technologies



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From plants to feed and food safety

- Plant pests and use of pesticides
- Mycotoxines
- Substances naturally occurring in plants



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Nitrate in vegetables*

Question: amounts of nitrate found in vegetables as consumed and any relevant considerations on the possible balance between risks and benefits

- As a response to a call for data on nitrate levels in vegetables, EFSA received 41,969 analytical results from 20 Member States and Norway
- There was a large variation in median concentrations of nitrate in different vegetables from a low of **1 mg/kg** (peas and Brussels sprouts) to a high of **4,800 mg/kg** (rucola)



Nitrate in vegetables*

- Overall, the estimated exposures to nitrate from vegetables are unlikely to result in appreciable health risks, therefore the recognised beneficial effects of consumption of vegetables prevail

Occasional circumstances:

- unfavourable local/home production conditions for vegetables which constitute a large part of the diet
- individuals with a diet high in vegetables such as rucola



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Housing and husbandry systems of fattening pigs*

Interaction between animal health and welfare:

- In relation to disease, respiratory and gastrointestinal infections and production-related diseases can have a major impact on the welfare of fattening pigs.
- At post-mortem slaughter inspection, pigs kept outdoors usually have a lower prevalence of lesions due to respiratory infections than indoor pigs but higher risk of some internal parasites.



Pig welfare and food safety*

- In principle, on-farm pig welfare assurance contributes to the resulting carcass meat safety assurance of the resulting carcass meat
- However, some on-farm practices that are considered beneficial for pig welfare may increase risks of a greater survival rate of, and/or exposure to, and/or spread of, food-borne pathogens in slaughter pigs
- Critical practices
 - holding in groups
 - use of bedding
 - use of non-slippery floors
 - access to outdoor spaces



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Request

- The Commission asked EFSA to assess the risks involved for animal health and public health as the consequence of cross-contamination of 11 coccidiostats into feed for non-target animals.
- 11 opinions have been adopted by CONTAM Panel in 2007 and 2008.



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Cross-contamination of coccidiostats



→ allowed for broilers



↘ not allowed for laying hens



↓ toxic to some non-target animals



↙ residues

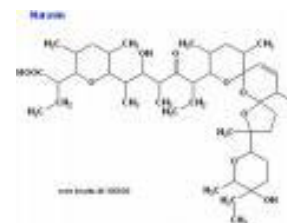
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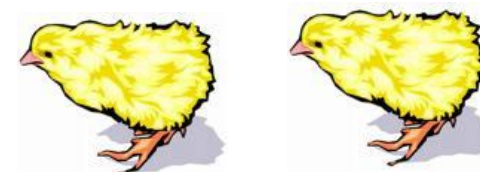
Coccidiostats authorised as feed additives

- E 756 Decoquinate
- E 757 Monensin-Na
- E 758 Robenidin-HCl
- E 763 Lasalocid A-Na
- E 764 Halofuginone(-HBr)
- E 765 Narasin
- E 766 Salinomycin-Na
- E 770 Maduramicin-NH₄
- E 771 Diclazuril
- E 772 Narasin-Nicarbazin
- E 773 Semduramicin-Na



Overall...

- For all the coccidiostats, **no health risk for consumers caused by cross-contamination was identified**. Calculated using the highest residue levels in eggs, liver 10 % cross-contamination level and default values for daily human consumption
- Depending on active substance, **cross-contamination of feeds with coccidiostats can be a health risk to non-target animal species** (>2% salinomycin, > 5% monensin carry over toxic to horses).
- Follow-up
 - Based on the EFSA assessments, the European Commission will introduce management measures to limit cross-contamination



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Commission request for an opinion on Animal Cloning

Terms of reference:

...to advise on **food safety, animal health, animal welfare and environmental implications** of live cloned animals, obtained through somatic cell nucleus transfer technique (SCNT), their offspring and the products obtained from those animals.

Other cloning technologies were not considered in the opinion

The European Group on Ethics in Science and New Technologies (EGE) has also provided the EC with an Opinion

Cloning: animal health and welfare*

- The **health and welfare** of a significant proportion of clones, mainly within the juvenile period for bovines and perinatal period for pigs, have been found to be adversely affected, often severely and with a fatal outcome.
- Somatic Cell Nucleus Transfer (the most common technique used to clone animals) has however also produced healthy cattle and pig clones, and healthy offspring, that are similar to their conventional counterparts based on parameters such as physiological characteristics, demeanour and clinical status.

*Scientific Committee 2000

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Cloning: food safety and environmental impact*

- There is no indication that differences exist in terms of **food safety for meat and milk** of clones and their progeny compared with those from conventionally bred animals. Such a conclusion is based on the assumption that meat and milk are derived from healthy animals which are subject to relevant food safety controls
- No **environmental impact** is foreseen but there are only limited data available

*Scientific Committee 2000

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- Challenges
 - Sometimes difficult to define the main questions
 - Resource demanding (data, risk assessment)
 - Integration of different views and disciplines
- Benefits
 - Multiple view for the hazards and risks
 - Risk-benefits may vary depending on the approach
 - Wider scientific support for decision makers

Expanding our understanding

- Understanding something in just one way is a rather fragile kind of understanding. . . . you need to understand something in at least two different ways to really understand it
- Each way of thinking about something strengthens and deepens each of the other ways of thinking about it
- Understanding something in several different ways produces an overall understanding that is richer and of a different nature than any one way of understanding.

Resnick 1994





Thank you for your attention!

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