Introduction to specifications for pesticides

Goal of the training course

To enable you to make

sound decisions about the control of quality of pesticides used in agriculture and/or public health.

Objectives of the training course

By the end of this course, you should be able to:

- apply well-established quality criteria for specific characteristics;
- apply well-established procedures where quality criteria must be defined case by case;
- determine whether or not different sources of an active ingredient, supported by different databases, are equivalent;
- determine the additional evidence or expert advice required to support decisions on equivalence or the acceptability of quality.

Boundaries of the training course

- Does not consider the safety and efficacy of active ingredient.
- Does not consider hazard or risk assessment of active ingredient.
- But it does consider the potentially adverse effect of impurities on safety or product stability.

hazard and risk....

Learning objectives

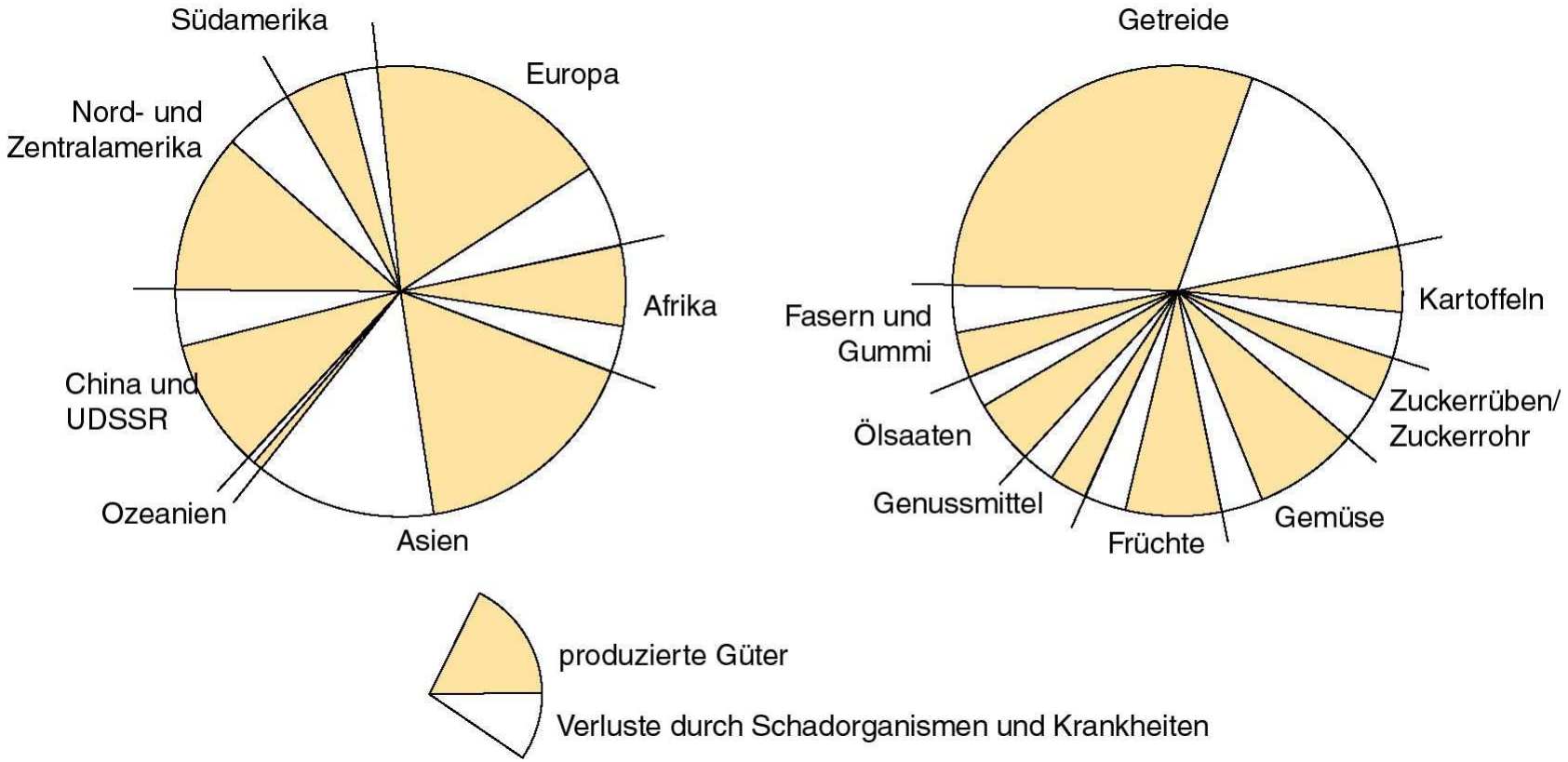
After this *Introduction* you should understand:

- The need for good quality pesticide products
- The role of pesticide specifications in improving pesticide product quality

Importance of pesticides in food security and quality

- Pests and diseases are major causes of loss and quality degradation in agricultural production and food storage throughout the world
- Migratory pests, such as locusts, can cause particularly dramatic losses within a region
- The consequences in terms of hunger, malnutrition and pressure to cultivate yet more land are incalculable
- Use of pesticides is very important element in an integrated approach to control agricultural and food pests

Loss of crops through pests by region or crop



FAO and WHO Specifications for pesticides: a training manual

Importance of pesticides in controlling vector-borne diseases

- Vector-borne diseases are major causes of illness and death in many tropical and subtropical countries
- Vector control has key role in prevention and control of vector-borne diseases such as malaria, dengue and Chagas' disease
- Use of pesticides is the most important element in an integrated approach to vector control, especially in epidemics

Poor quality pesticides

- Are unlikely to serve the intended purpose
- Are likely to provide poor value to users
- Are likely to be more harmful, directly or indirectly, to humans and the environment
- May be phytotoxic to, or taint treated crops

Bad formulation: degraded formulation after storage test

Bad formulation: hard lumps after heat stability test

Adverse effects of poor quality pesticides:

What is a pesticide specification?

- A list of basic quality criteria for distinguishing between good and bad products (of the same type)
- It does **not** define the best product, nor that the product is suitable or safe for purpose

A pesticide specification includes criteria for properties in some or all of the following categories...

- Description of the product
- Active ingredient identity and content
- Relevant impurities
- Physical properties
- Storage stability

Test methods supporting specifications

- Widely-accepted, well-validated test methods are essential
- Test methods should be straightforward and robust
- Well-trained technicians and a suitably-equipped laboratory are required for reliable results

FAO/WHO specifications

- Are international points of reference for quality of agricultural pesticides (FAO) and public health pesticides (WHO)
- "New" versus "old" FAO/WHO procedures for development of specifications

Thank you for your attention!