

Experience with Assessments of Residues and Analysis of Frauds at FiBL

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Objectives

- **Introduction**
- **Assessment of residue cases**
 - **FiBL concept**
 - **Advantage/disadvantage of thresholds**
 - **FiBL database**
- **Decision making process at Bio Suisse**
- **Examples of fraud cases**

Introduction

Sources of Pesticide Contaminations

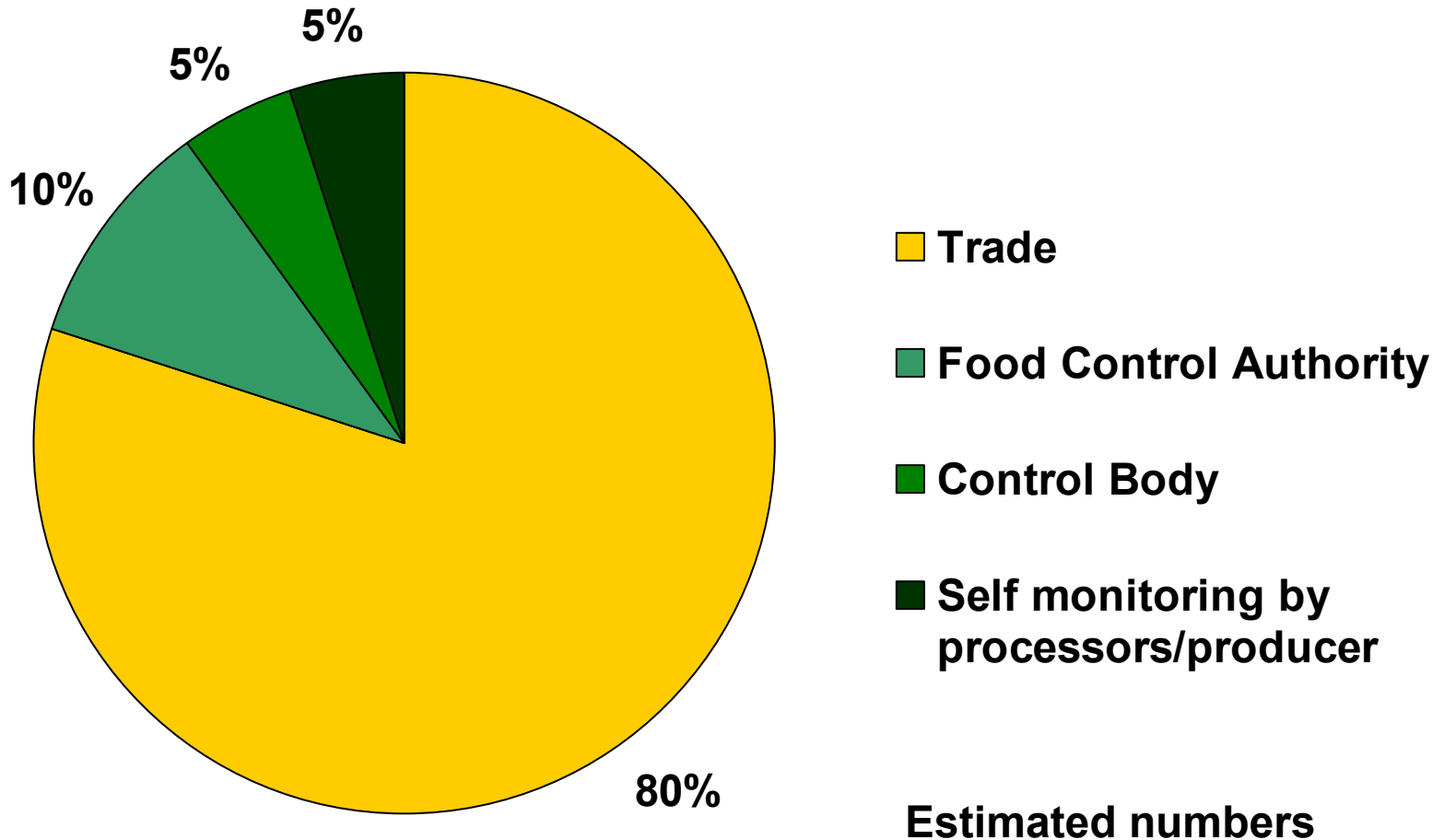
Field

- **Deliberate application of fungicides, insecticides, herbicides**
- **Seed treatments for control of soil-born diseases**
- **False claims**

Storage

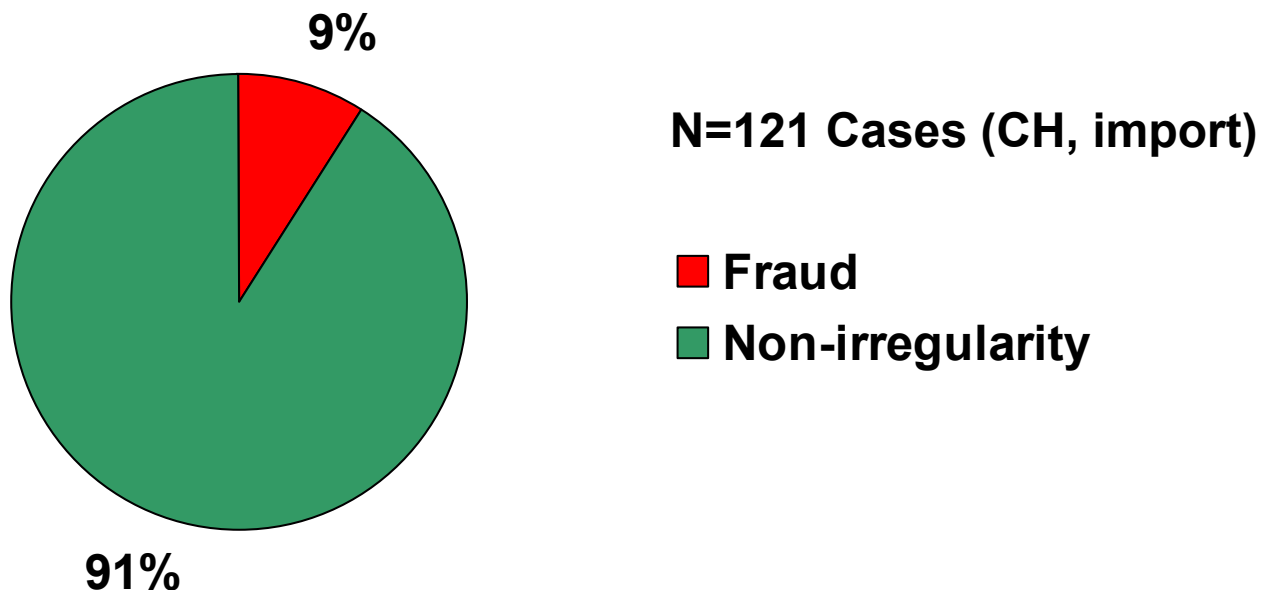
- **Storage insecticides**
- **Inadvertently combined**
- **False claims**

Notification of Residue Cases to Bio Suisse



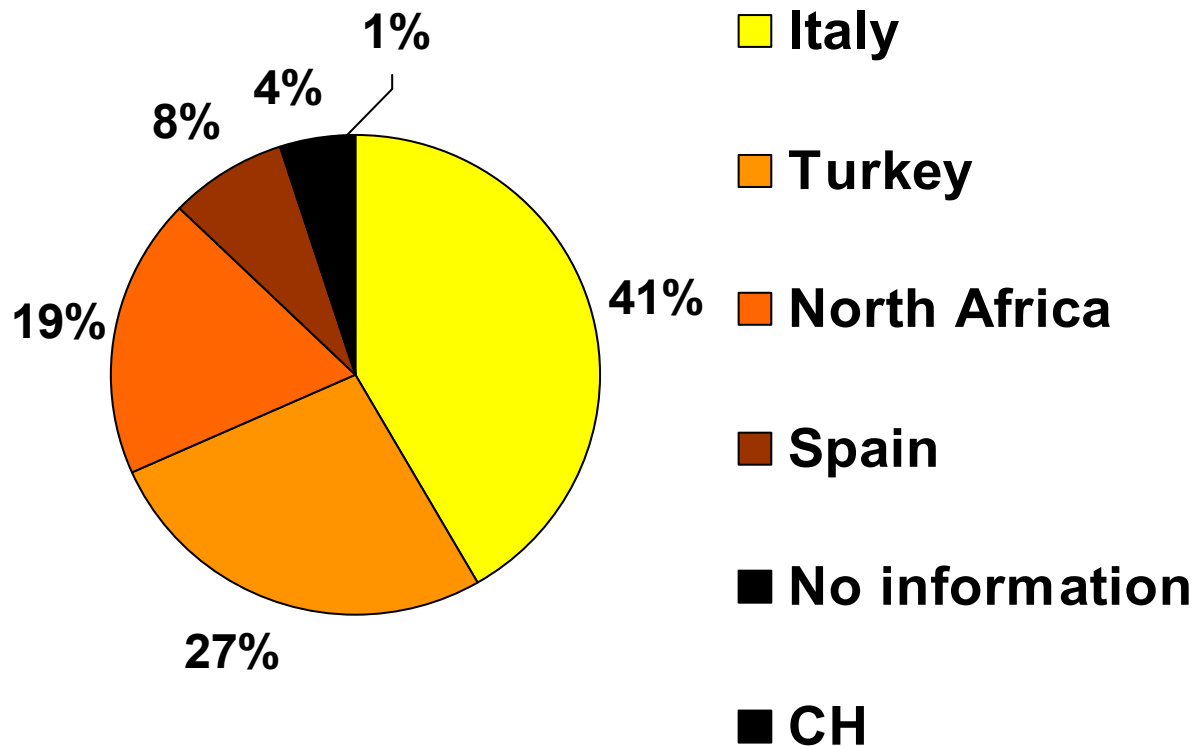
Residue Cases Notified to Bio Suisse 2003 – 9/2007

Referred to sum of all pesticides detected per case	< 0.01 mg/kg	≥ 0.01 < 0.02 mg/kg	≥ 0.02 < 0.05 mg/kg
Probability for irregularities	1	50	85



➤ A residue value alone will not tell us something about the source of contamination

Origins of Residue Cases



N=121 Cases, FiBL Database

Assessment of Residue Cases

I Individual Assessment of Residue Cases

- **Without consideration of organic threshold level**
- **Compliance with organic regulations not based on detection of pesticides only**
 - **Detection of residues due to more sensitive analysis methods**
 - **Completion of duty of care**

Advantages and Disadvantages of Thresholds

- **Leading to legal certainty**
 - **Satisfactory situation for certification bodies, food control authorities, importers traders**
- **Leading to mixing of loads with and without pesticides to dilute and subsequently to reach the requested setting**
- **Asking for guarantees from the purchaser's point of view > movement towards final product control**
 - **Conflict in terms of the underlying principles or philosophy of the organic inspection system**
- **More analysis activities expected - increasing costs**
- **Price and organic farming in third world countries**

IFOAM Position Paper

- The organic movement prefers no introduction of a residue limit
- http://www.ifoam.org/about_ifoam/around_world/eu_group/pdfs/IFOAMEUGroup_Position_pesticides_residues-1.pdf



International Federation of Organic Agriculture Movements –
EU Regional Group

POSITION PAPER

**“The Dealing
with Pesticide Residues
in Organic Products”**

Approved by the IFOAM EU Group
on 18th of February, 2005

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II Plausibility Check

- **Does an application of the pesticide make sense on the concerned crop?**
 - **Application of pesticide**
 - **Uses, on which crops, pests and in which moment; are these pests a problem in the specific country/region/farm?**
 - **Is the plant protection product registered for organic / non organic use in the concerned country?**
 - **If an application in the field does not make sense, contamination could have occurred by other sources as packaging, storage, boxes, during transport, through mixing or persistent pesticides.**
 - **Physico-chemical characteristics of the pesticide > environmental fate**
 - **How big is the persistence of the pesticide? How fast is it degraded in soil, in and on plants? Persistent pesticides can derive from former uses (agriculture, storage, boxes).**

III Consideration of Data on Background Contaminations

- **Comparison with data from databases and former cases**
 - **Case study: organic wine**
- **Data on background contaminations**
 - **www.pesticides-online.de**
 - **FiBL residue database**
 - **Evaluation of residue cases in organic products, feedstuff and seed.**
 - **Data comprises in-depth knowledge on the case, the sample (leaves, soil and raw material) and the corresponding residue values.**
 - **Currently 1950 cases and over 50'000 residue values**
- **IFOAM EU Group and the Harmonization Group: there is a need for a database with basic information on residue cases of organic products as well as on the subsequent decisions made by the certification body**

Case Study: Organic Wine

Legende:

Cyprodinil [$\mu\text{g}/\text{kg}$]
(NG = 0.1 $\mu\text{g}/\text{kg}$)

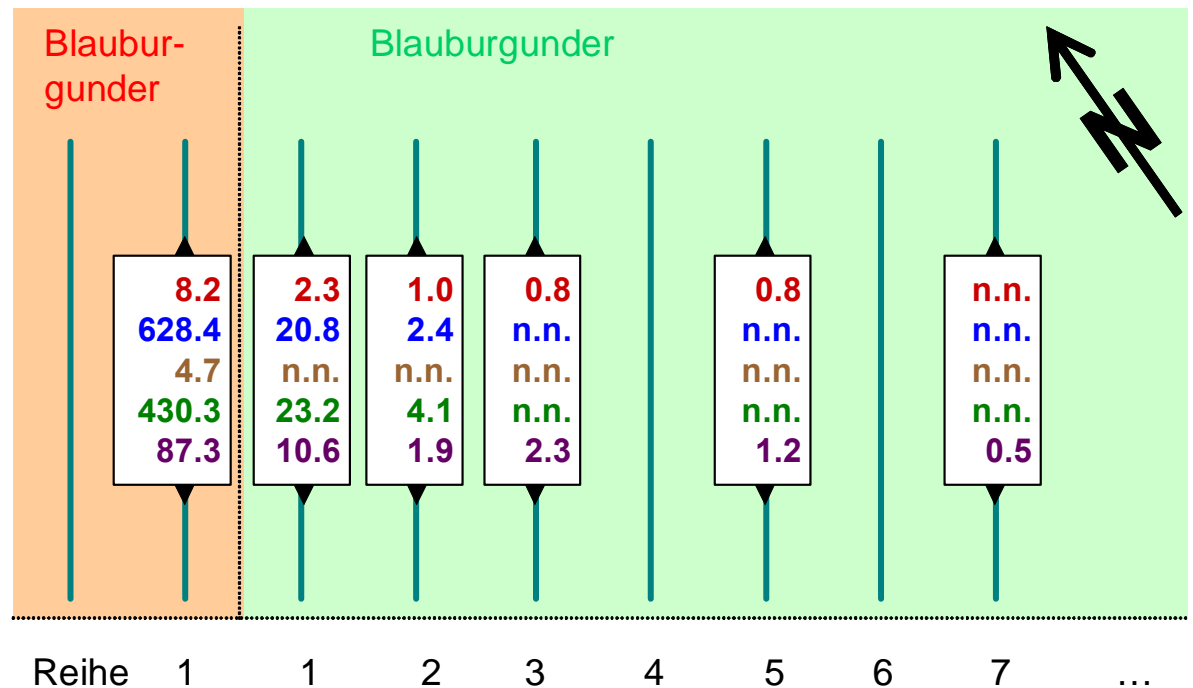
Folpet [$\mu\text{g}/\text{kg}$]
(NG = 1.5 $\mu\text{g}/\text{kg}$)

Fludioxonil [$\mu\text{g}/\text{kg}$]
(NG = 1.1 $\mu\text{g}/\text{kg}$)

Fenhexamid [$\mu\text{g}/\text{kg}$]
(NG = 2.2 $\mu\text{g}/\text{kg}$)

Azoxystrobin [$\mu\text{g}/\text{kg}$]
(NG = 0.4 $\mu\text{g}/\text{kg}$)

- Organic
 - Conventional
- NG = LOD



IV Completion of Duty of Care

- **Investigation regarding completion of duty of care**
 - **Compliance with standards**
 - **Documentation duty**
 - **Compliance with Good Organic Agricultural Practice/Good Organic Manufacturing Practice**
 - **Recommendations from leaflets**

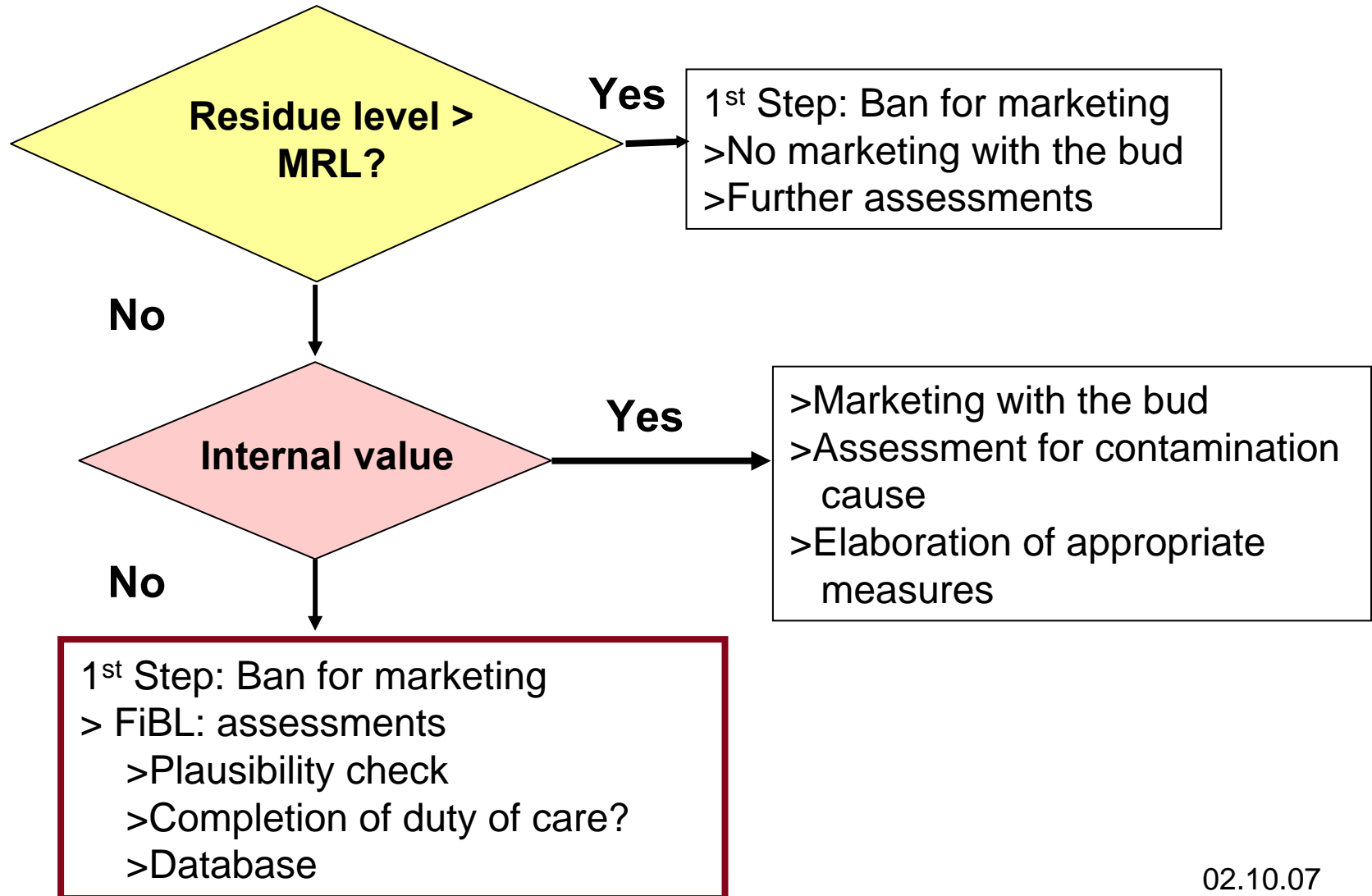
Summary

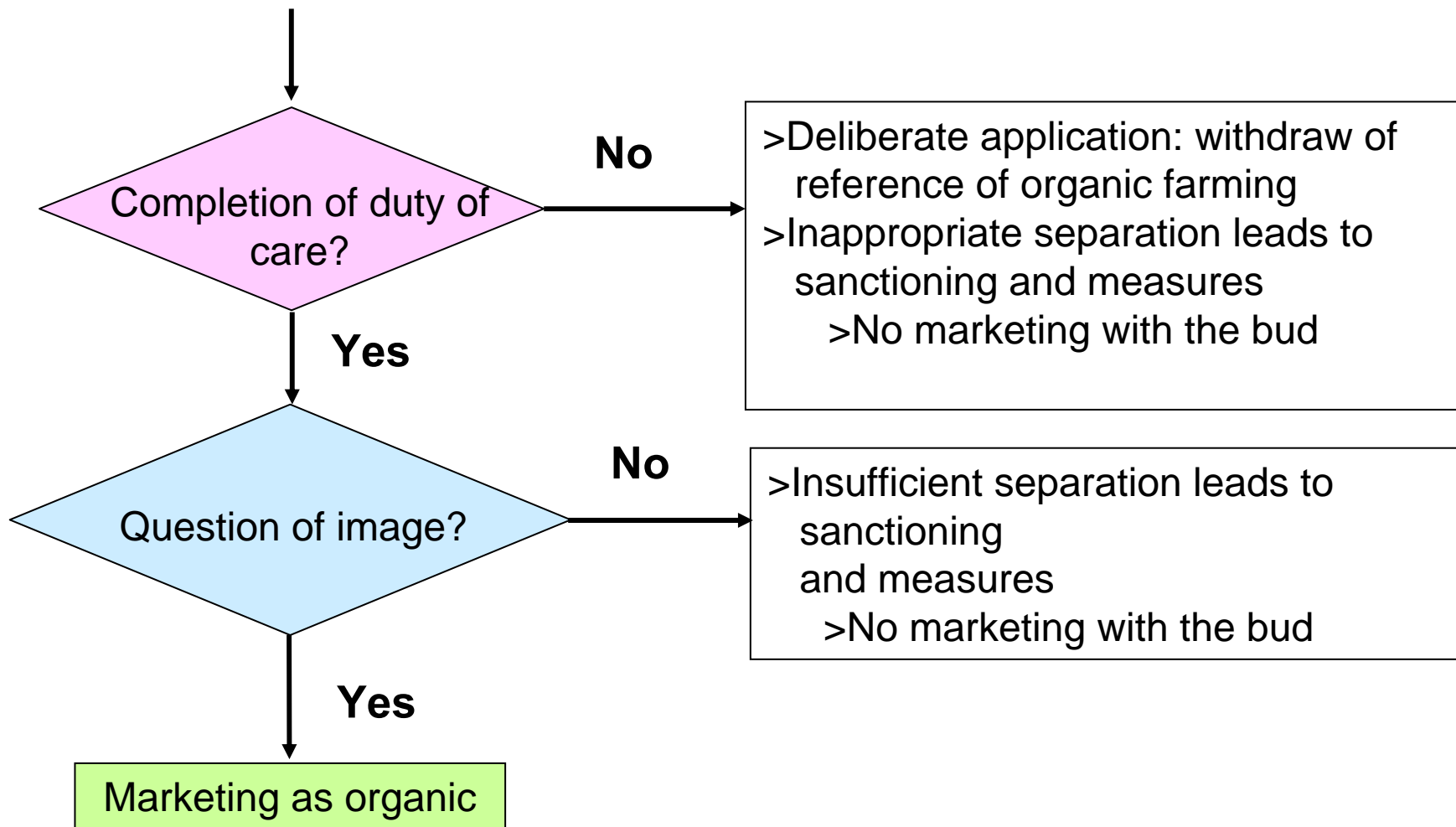
- **I Individual assessment of residue cases,**
- **II Plausibility assessment as foundation of evaluation,**
- **III Investigation regarding completion of duty of care,**
- **IV Consideration of data and endpoints on background contaminations (database).**

Wyss and Nowack 2006

Decision Making Process at Bio Suisse

Decision Making Process

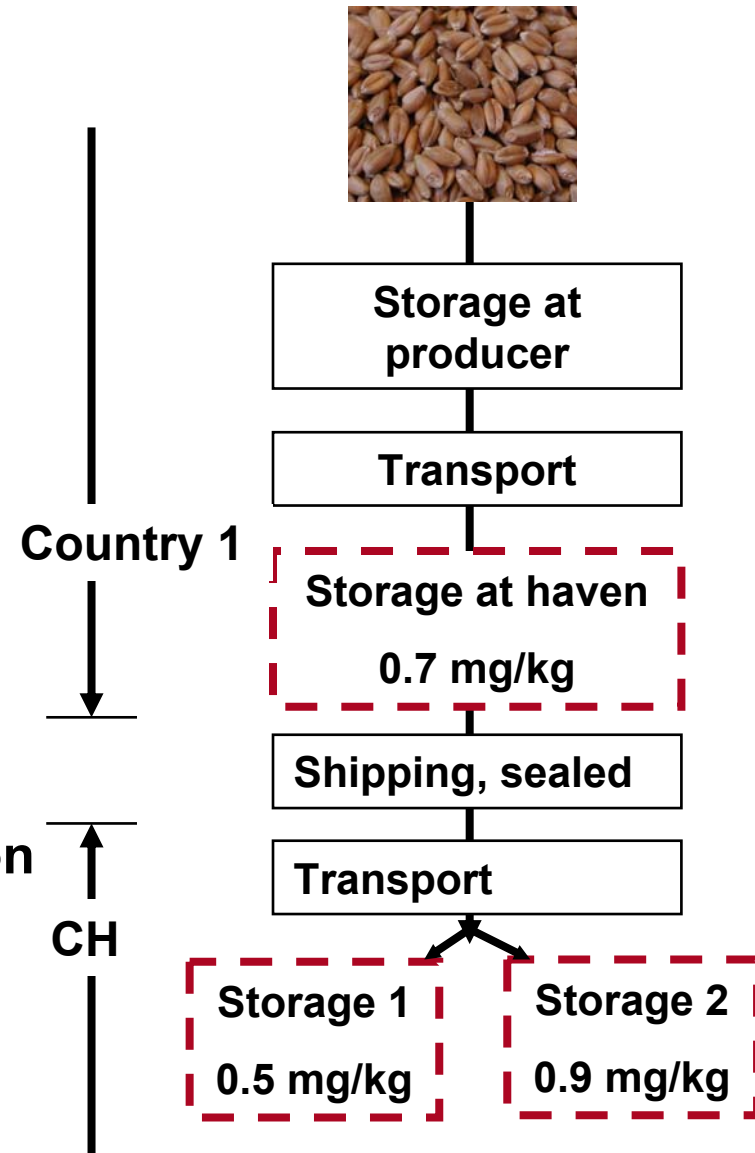




Fraud Cases: Examples

Fraud Case 1: Fenitrothion on Wheat

- Notification by self-monitoring
- Assessment by FiBL
 - Insecticide for storage application
Pesticide registered in country 1 but not in CH
 - MRL (CH) at 2 mg/kg; Residue content higher as conventional samples
- Source of contamination
 - Suspicion for deliberate application in storage, not according GAP
- Control by inspection body of country 1
 - No irregularities found



Thank you for your attention!

