T-2 and HT-2 and other mycotoxins in food

Results of surveys performed by consumer organisations

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Who we are

- Member of BEUC, the European Consumer Organisation

- 4 countries:
  - Belgium — Test-Aankoop / Test-Achats
  - Italy — Altroconsumo
  - Portugal — DECO Proteste
  - Spain — OCU

- Independent consumer organisation

TEST achats
Expert · Indépendant · Proche de vous

Why food safety surveys?

- Detect food safety problems, eg mycotoxins
- Is the legislation sufficient to protect consumers safety or is new or more complete legislation needed?
- Inform our members: magazine publication

Our mycotoxin surveys

2005

- Before regulation 1881/2006
- 280 products in 4 countries
- Beer, red wine, grape juice, corn based products, baby cereals, bread, pasta and pistachios

2013

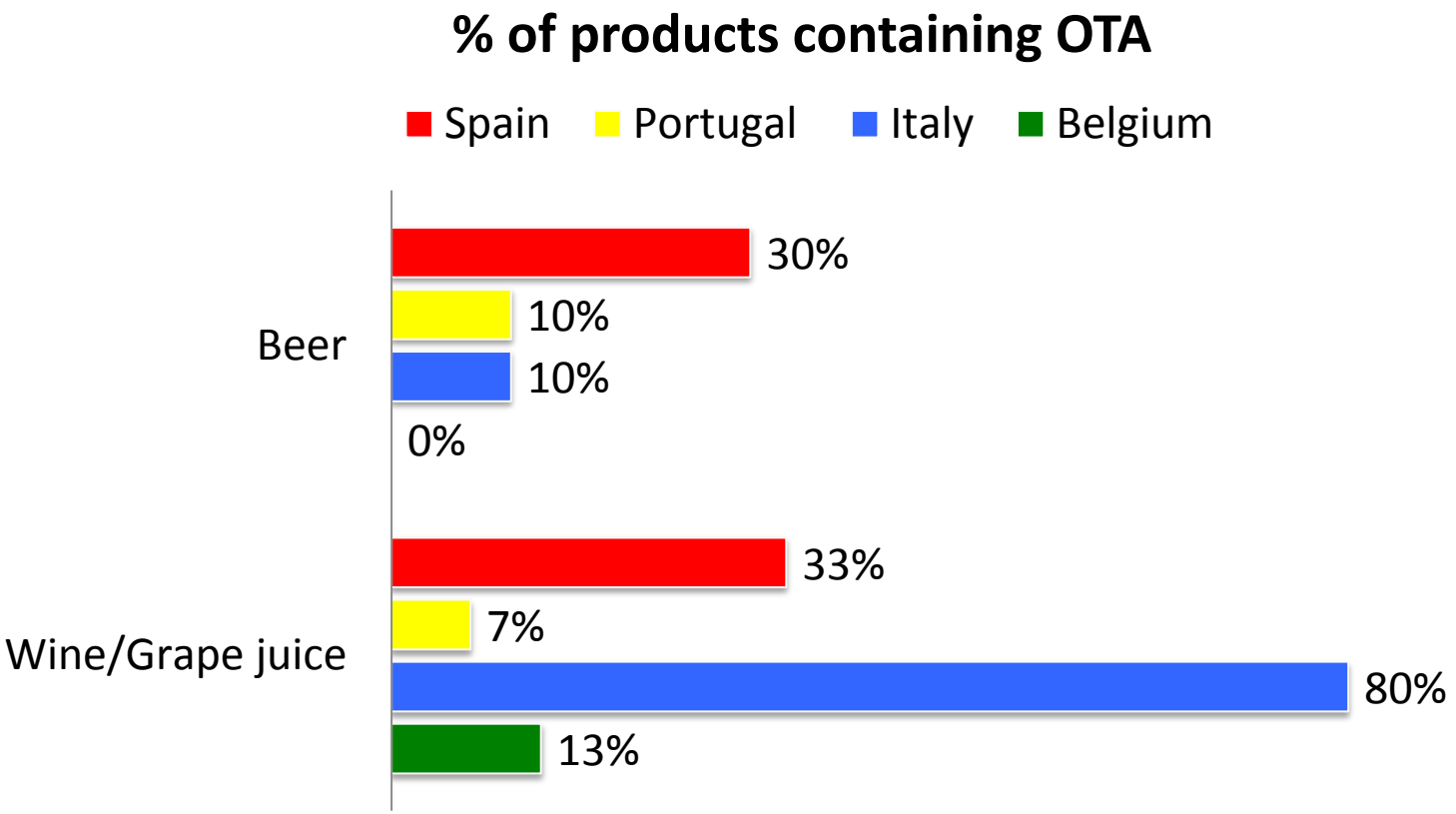
- Regulated mycotoxins and not regulated, “new” mycotoxins (derivatives)
- 173 products in 4 countries
- Cereal products with special focus on rye , whole-wheat and multicereal products: bread, muesli, baby cereals, oatmeal, biscuits and pasta

	2005	2013
Aflatoxins B1,G1,B2,G2	✓	
Ochratoxin (OTA)	✓	
Thrichiothecens		
Type A: T2, HT2,		✓
diacetoxyprenol (DAS)		✓
Neosolaniol		✓
Type B: Deoxynivalenol (DON)	✓	✓
DON-derivatives		✓
~~Fusarenon-X~~		✓
Zearalenones		
Zearalenone		✓
α- Zearalenone		✓
B- Zearalenone		✓
Fumonisin	✓	
Ergot alkaloids		✓

Mycotoxins as parameter in comparative tests

- Baby cereals: Spain – 2013
- Spices: 4 countries - 2011

2005: Ochratoxin A in wine, beer and grape juice



2005: Ochratoxine A in wine, beer and grape juice

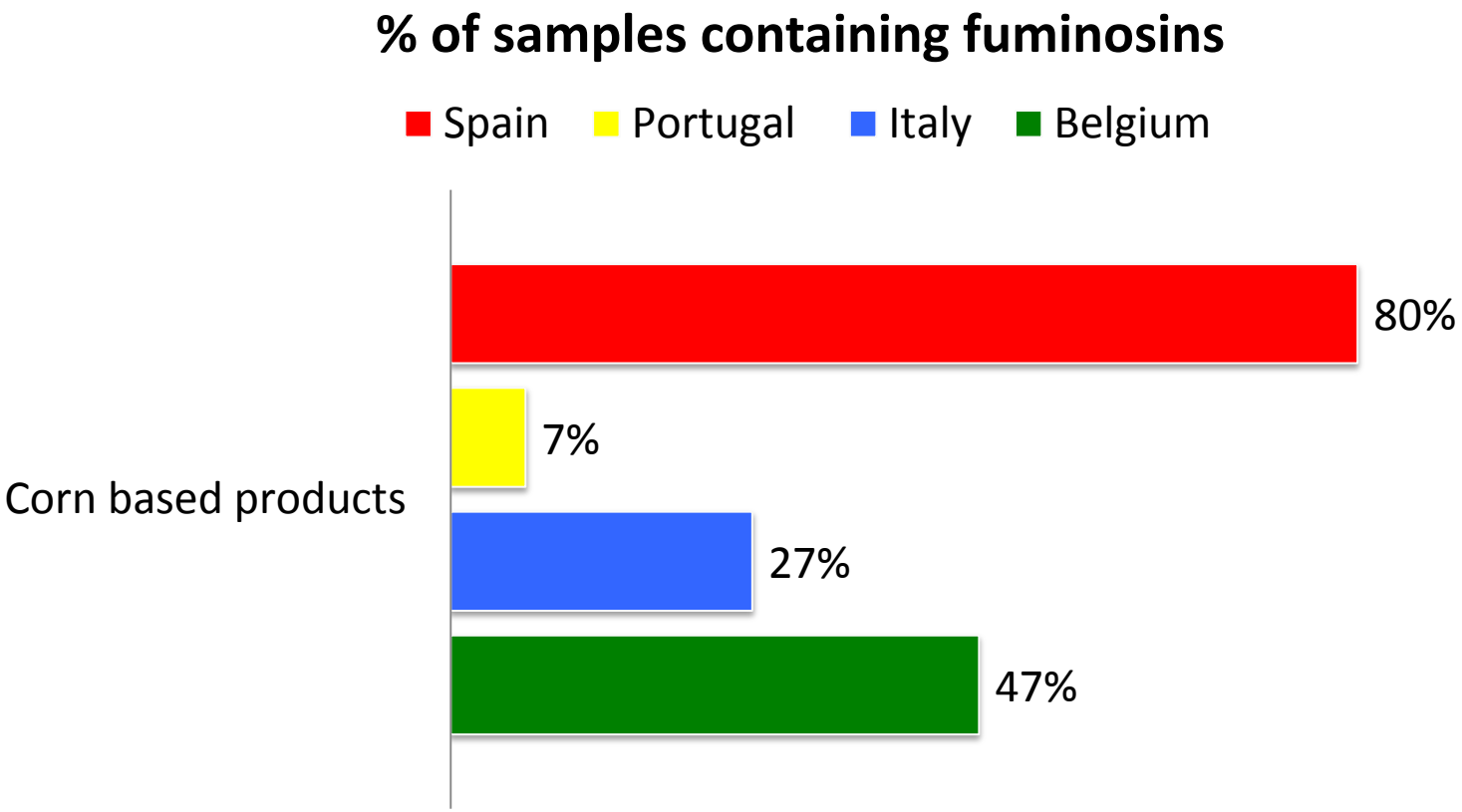
Concentrations:

beer: 0.014 – 0.12 µg/kg

wine: 0.2 – 1.36 µg/kg

grape juice: 0.21 µg/kg

2005: Aflatoxins, DON and fuminosins in corn based products



2005: Aflatoxins, DON and fuminosins in corn based products

- Concentration of fuminosins:

  105 -5499 µg/kg

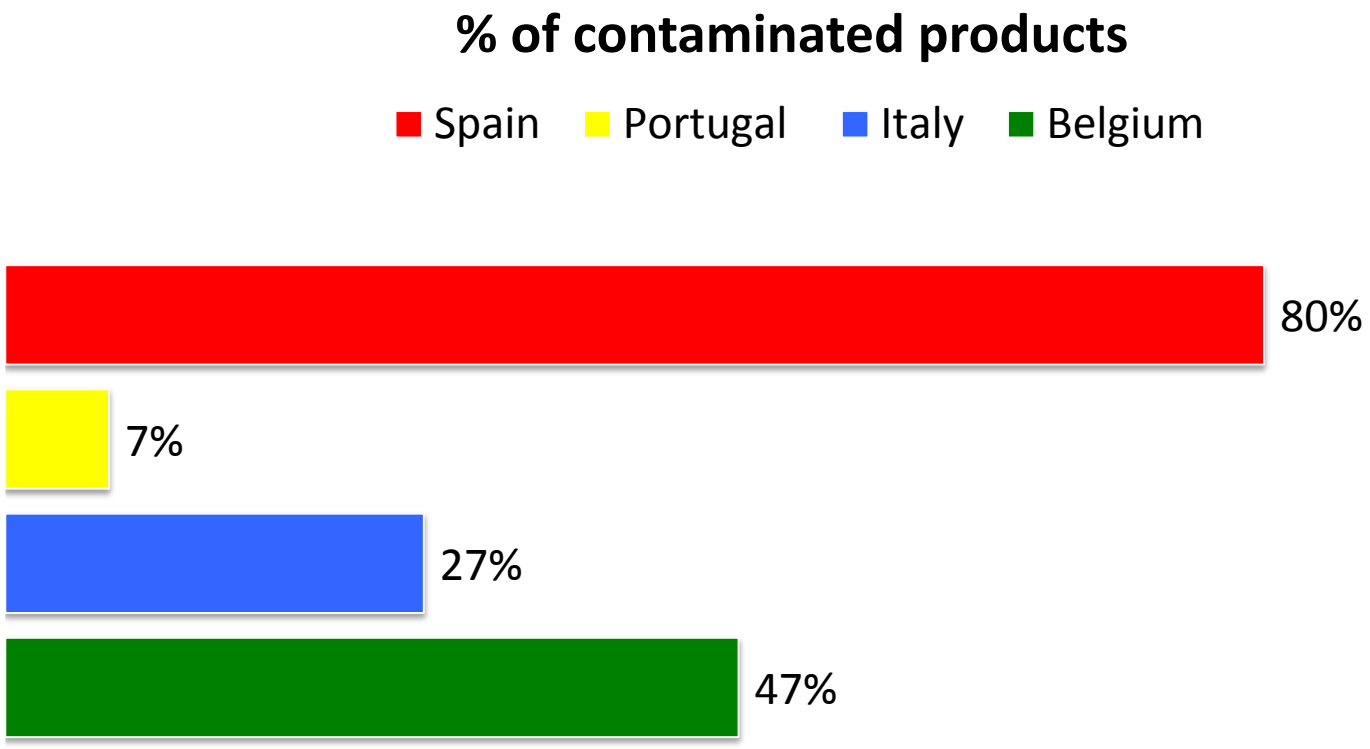
  10 samples (17%) with levels above the current legal limit

- No DON or aflatoxins detected

2005

- Aflatoxins and ochratoxin in baby food: 0%
- DON in wheat products: 0%
- Aflatoxins in pistachios: 0%

2013: Ergot alkaloids



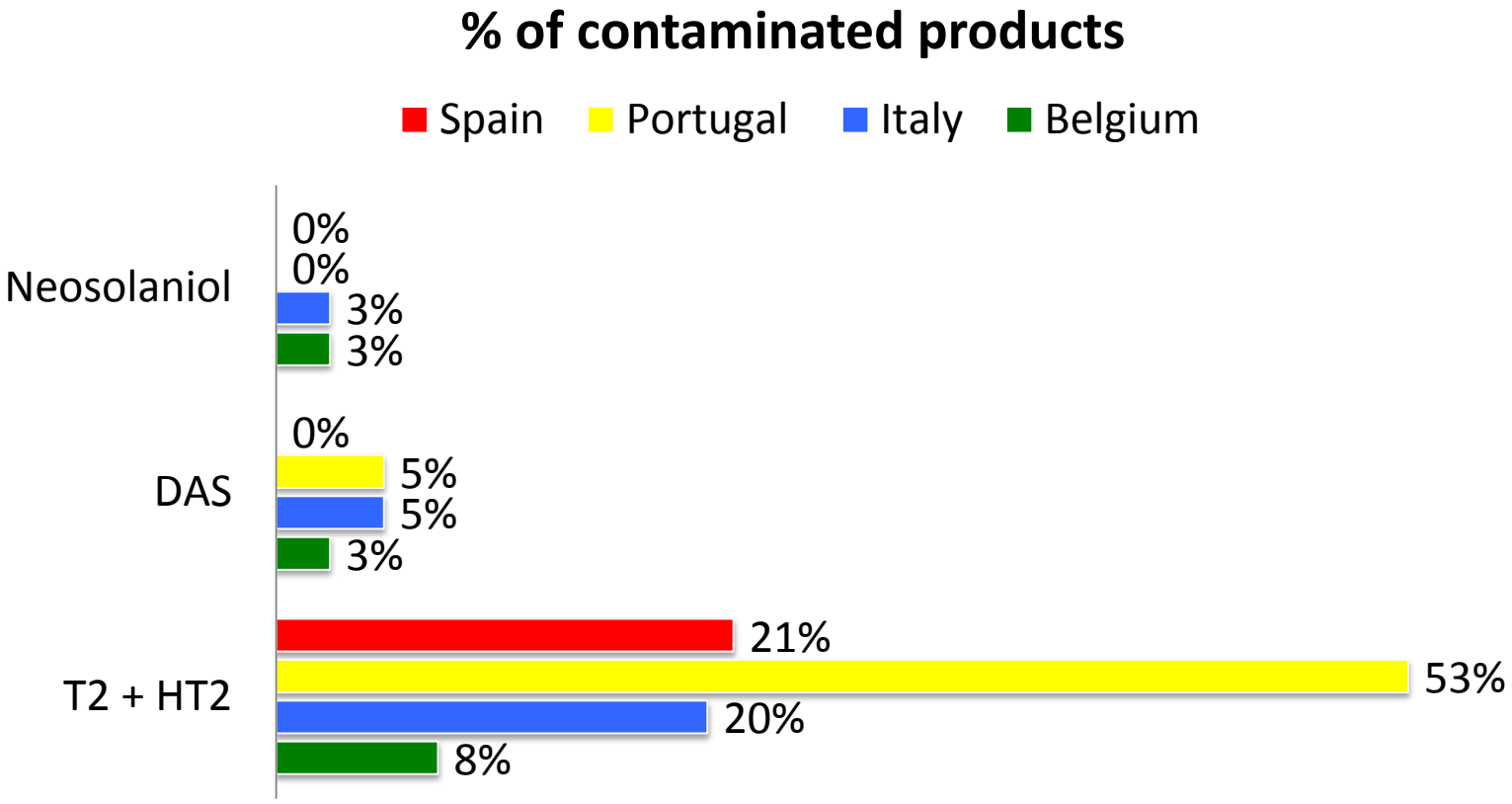
2013: Ergot alkaloids

- Concentration:

Sum of ergot alkaloids < 50 ppb

- Switzerland: limit of 100 ppb

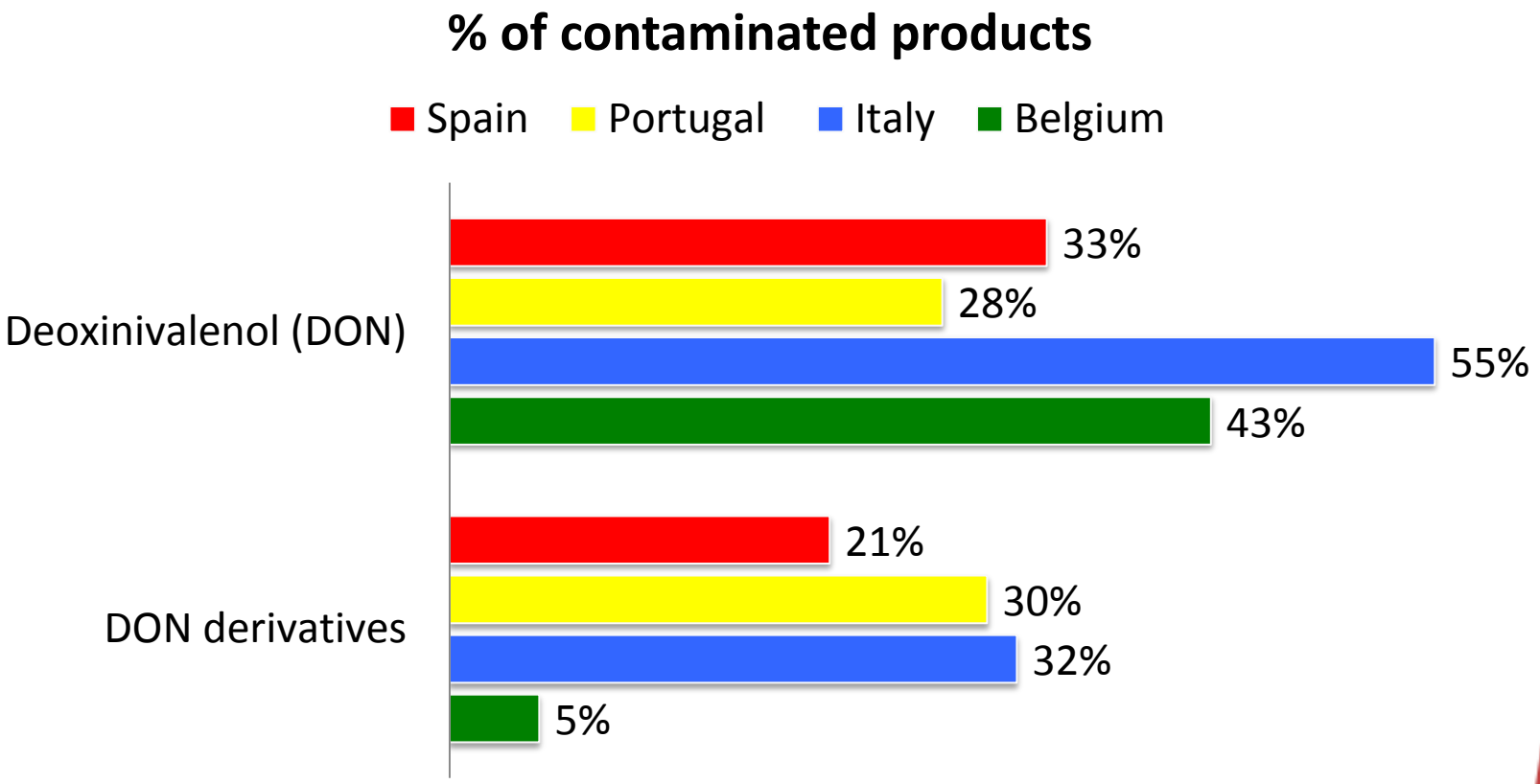
2013: Thrichothecens type A



2013: Thrichothecens Type A

- Many samples contain T2 and/or HT2, but in low concentrations (< 50 µg/kg):
- Few samples contain DAS, mostly in low concentrations (17 – 41 µg/kg)
- Few samples contain Neosolaniol (72 -131 µg/kg)

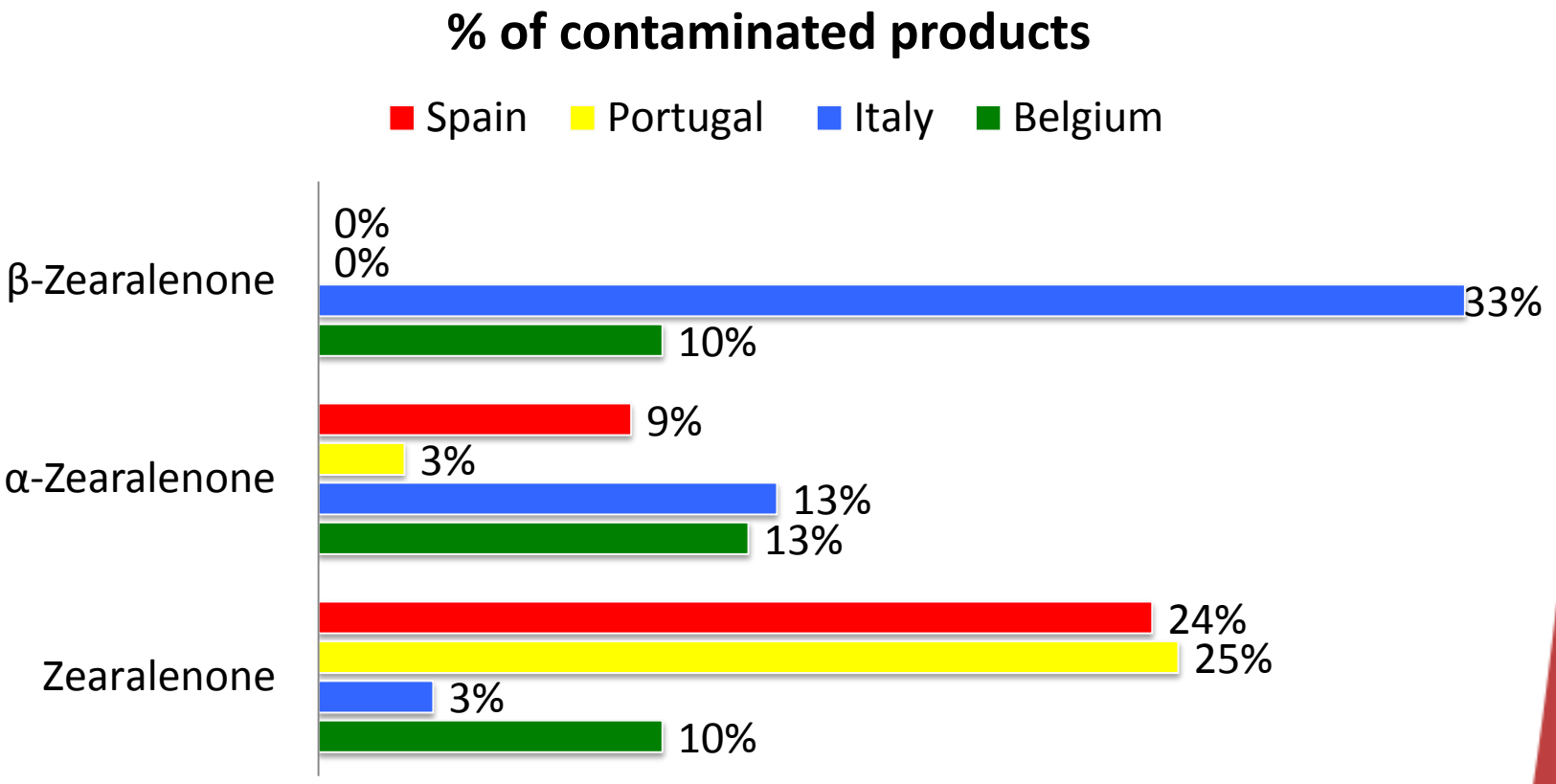
2013: Thrichothecens type B



2013: Thrichothecens Type B

- Only 1 sample above the legal limit of DON (Belgian multicereal bread)
- Levels of DON + DON acetyl derivatives are below legal limit of DON

2013: Zearalenon and derivatives

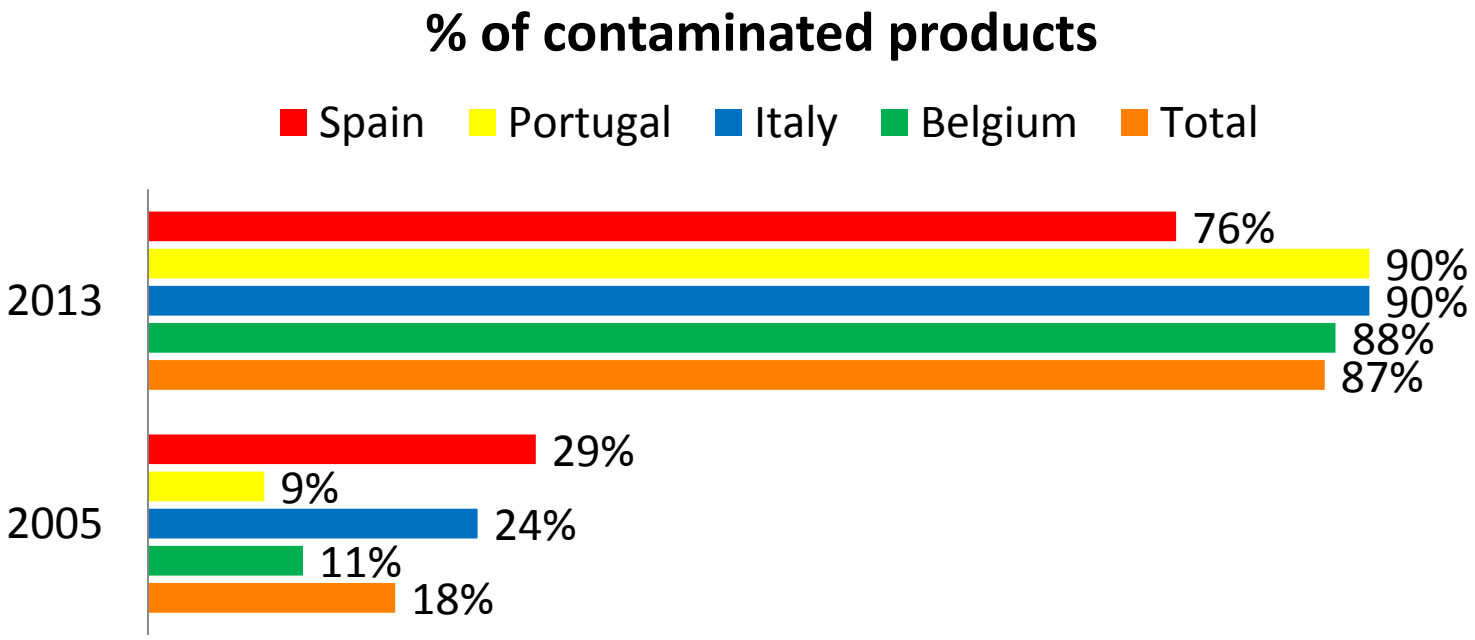


2013: Zearalenone and derivatives

- Zearalenone levels not above legal limit
- Zearalenone + its derivatives: 5 products above the legal limit of Zearalenone

  (main contribution of α-Zearalenone, which is more toxic)

Overview of results



2013: 67% of samples is contaminated with non-regulated mycotoxins

Mycotoxins in comparative tests

Baby cereals (2013):

- Sum of aflatoxins: contamination in 4 of 15 products (26.6%): 0.2 - 0.5 µg/kg
- Sum of aflatoxins is not regulated by EU Regulation 1881/2006!
- Ochratoxin, Vomitoxin, T2, Fuminosin, Aflatoxin M1: not detected

Mycotoxins in comparative tests

Spices (2011): 97 samples in 4 countries

- Aflatoxins: no levels above legal limit
- Ochratoxin A: 3 samples with levels above the legal limit
- Strict controls remain necessary

Conclusion

- High percentage of everyday products is contaminated with mycotoxins (up to 87% in our latest study)
- Need for knowledge about mycotoxin derivatives (toxicity)
- New legal limits are needed (with priority for Zearalenones and T2/HT2, baby cereals)

Questions?

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