

EUROMAISERS



**4th MYCOTOXIN FORUM,
BRUSSELS**

15/16 January 2007



**Euromaisiers represents
the European dry maize
milling industry**

Background



- Main markets for maize products are: cornflakes industry; breweries; snack sector; food ingredients
- Processing mainly French, Italian and Argentinean maize
- Alternative sourcing of maize is NOT a possibility – CONTRACT GROWTH to secure non-GMO supplies already reduces flexibility
- Data collected from Euromaisiers members 1999-2006 with test results from raw maize and milled products

Production of Euromaisiers members ('000 tonnes)

Flaking Grits	Small grits	Maize Flour	Animal Feed	Total
212	516	169	384	1,281
16.5%	40.3%	13.2%	30.0%	100%

Summary of Published EU MRLs (ppb)

	Maize	Grits/ Flour	Food	Infants
DON	1750	750	500	200
ZEA	(200)	(200)	(50)	(20)
FUM	(2000)	(1000)	(400)	(200)

Fumonisin: Key Concerns...



- This presentation concentrates on fumonisins and the effects of processing;
- Although there is annual variation, fumonisins are prevalent in Italian and Argentinean Maize, and the frequency of presence in France is increasing rapidly;
- There is a degree of reduction between maize and maize grits but according to data from Euromaisiers members 40 to 50% of maize flour samples exceed 1000ppb;

...Key Concerns



- There is very wide variation in the degree of concentration/reduction in maize products relative to maize;
- Proposed limits for maize, first processed products and consumer products are not compatible;
- Effective management of the issue requires the chain to work together, but control is through good agricultural practice;
- Current legislation should not apply to maize germ which is used for oil extraction. A limit for oil is sufficient.

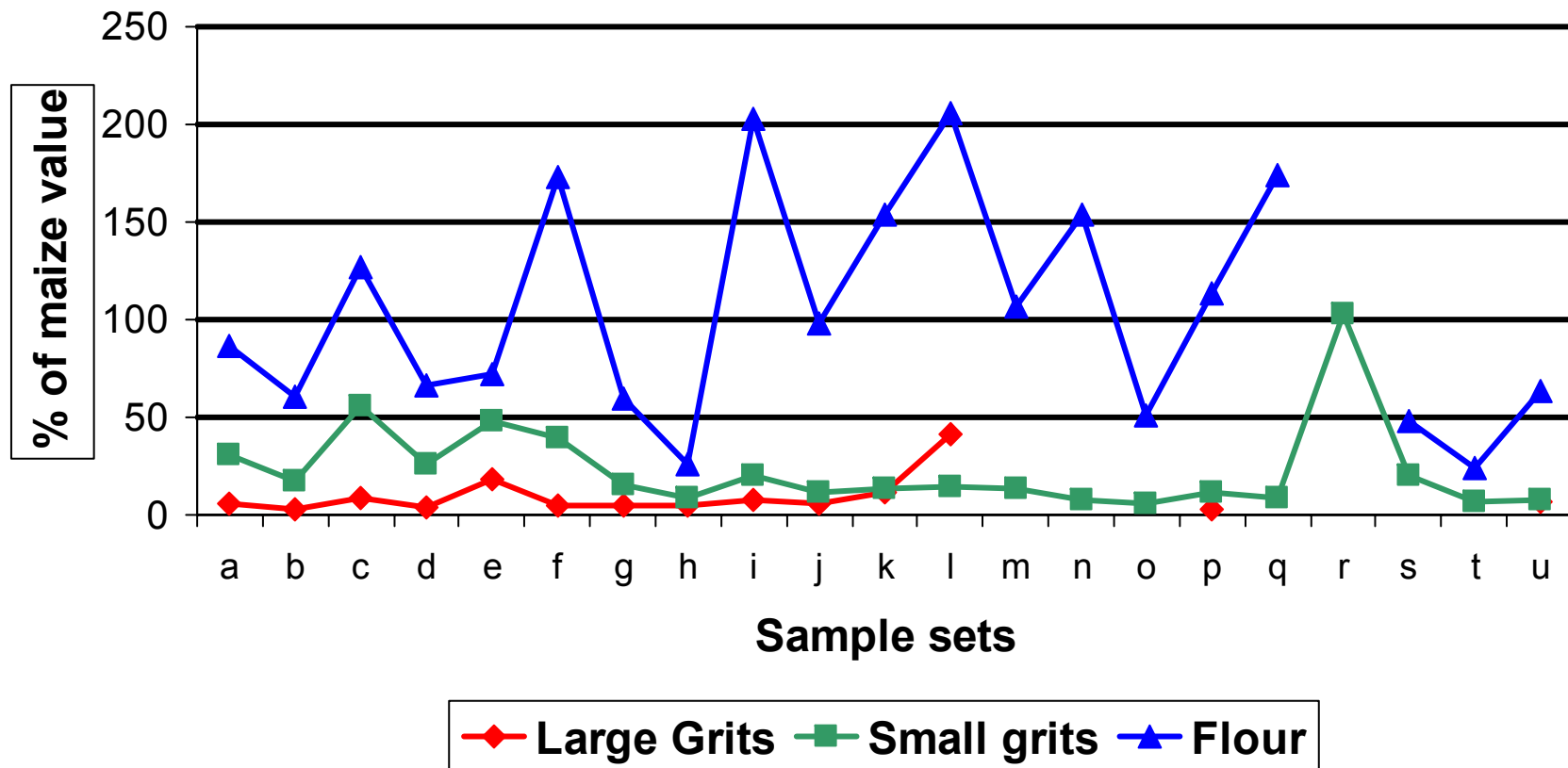
Annual variation in Fumonisin level in maize grits

Year	Samples	< 500	500-1000	>1000	% >1000
1999	48	100%			-
2000	18	100%			-
2001	41	98	2%		-
2002	52	94%	6%		-
2003	111	95%	5%		-
2004	187	90%	9%	1%	1%
2005	55	89%	9%	2%	2%

Annual variation in Fumonisin level in maize flour (ppb)

Year	Samples	< 500	500- 1000	1000- 2000	2000- 3000	>3000	% >1000
1999	30	37%	17%	27%	13%	7%	46%
2000	7	100%					-
2001	25	48%	12%	32%		8%	40%
2002	61	89%	5%	7%			7%
2003	88	35%	15%	32%	11%	7%	50%
2004	122	66%	12%	7%	10%	5%	22%
2005	44	43%	7%	9%	27%	14%	50%

Fumonisin level in maize products compared with unprocessed maize (2002 data)



2006 study on relation between levels in maize and maize flour....



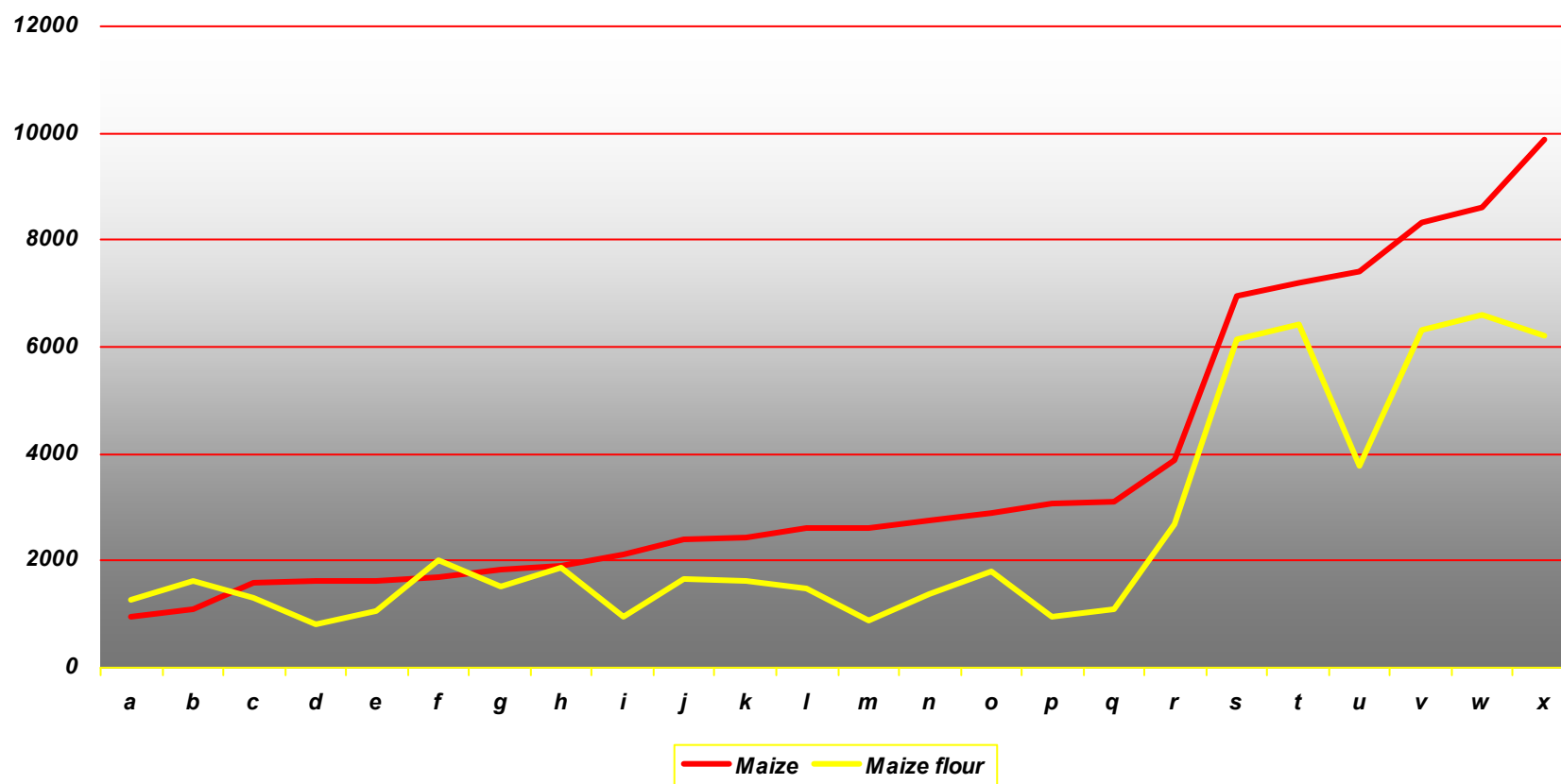
- Samples of maize and maize flour taken according to EU sampling protocol
- All analysis carried out in the same laboratory, using the same methodology
- Programme discussed with EU Commission before implementation

... 2006 study on relation between levels in maize and maize flour

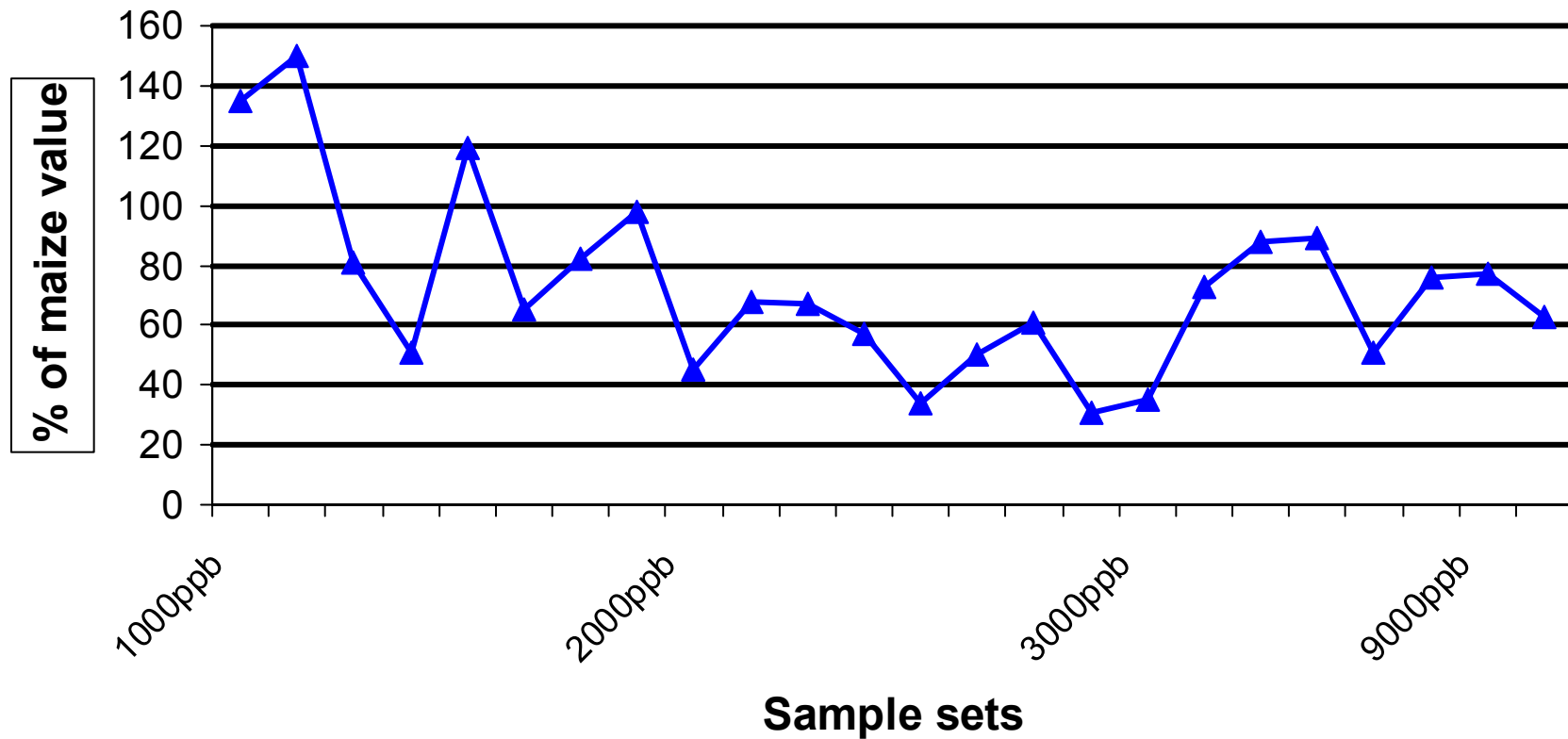


- 3 mills participated – 8 sets of paired samples per mill, drawn from 8 different production runs
- Based on production run of 20t maize
- Samples therefore as close as possible to commercial reality, consistently analysed using EU protocols

Fumonisin - Relation between paired samples of Maize and Maize flour (ppb) 2006



Relation between Fumonisin level in maize flour and unprocessed maize is more erratic at lower levels



What do the data tell us...?



- There is significant annual variation in fumonisin levels in maize used by millers
- There is a very large difference in fumonisin levels between the product streams in a maize mill. Grits (large particles) tend to be low; Flour (small particles) tend to be higher)

...What do the data tell us?



- The effects of processing on fumonisin levels appear to vary depending on the original level in maize. There is a more consistent reduction when maize level is >3000ppb. Below 2000ppb there is no guarantee of reduction

Implications of different final product limits

- Table shows impact of varying limits set for a snack product made with 100% maize (eg cheese curls) on maximum levels in maize flour and maize.
- i.e. to make a snack max 400ppb, manufacturers would need to specify maize max 600ppb.

Snack	400	1000	2000
Flour	600	1500	3000
Maize	max 600	max 1500	max 4500

Final conclusions...



- Limits for consumer products, intermediate products and maize must be consistent
- Current proposed limits for processed products are too low compared with maize
- To meet the proposed consumer product limit of 400ppb, processors would need to specify a limit in maize of <600ppb. This would not be achievable.

...Final conclusions



- Bearing in mind the lack of flexibility due to contract growing, fumonisin limits of 4500ppb for maize, 3000ppb for intermediate products and 2000ppb for consumer products would be more realistically achievable
- Even this would exclude a significant proportion of the Italian and French maize crop.