FEFAC

Protein market and feed safety requirements

Arnaud Bouxin
Deputy Secretary General

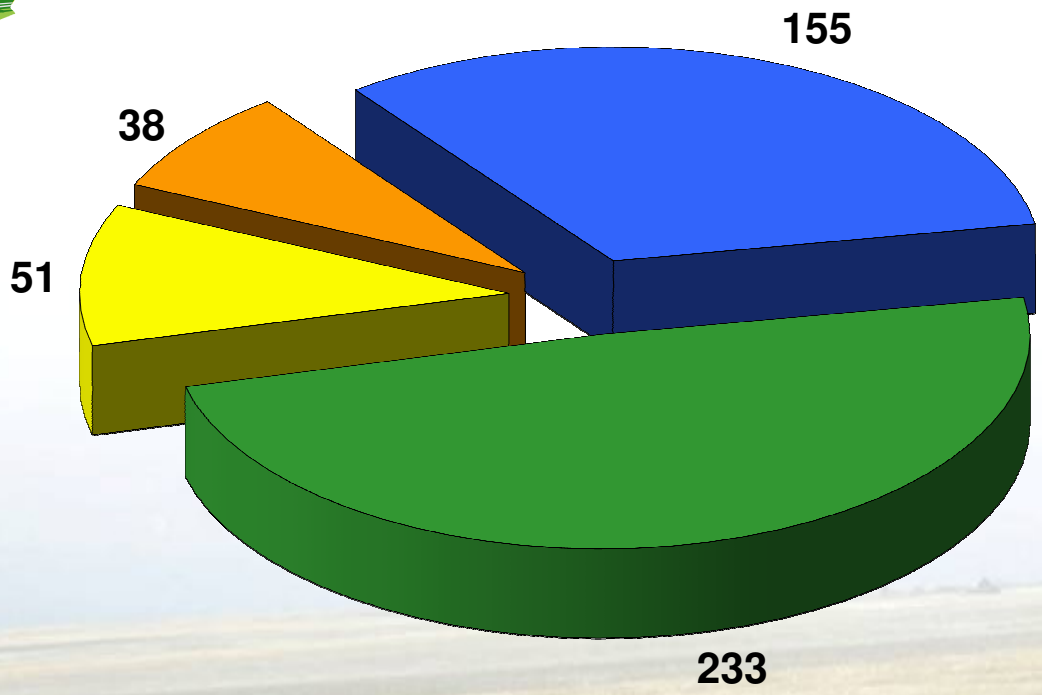
FEFAC

FEFAC in a nutshell

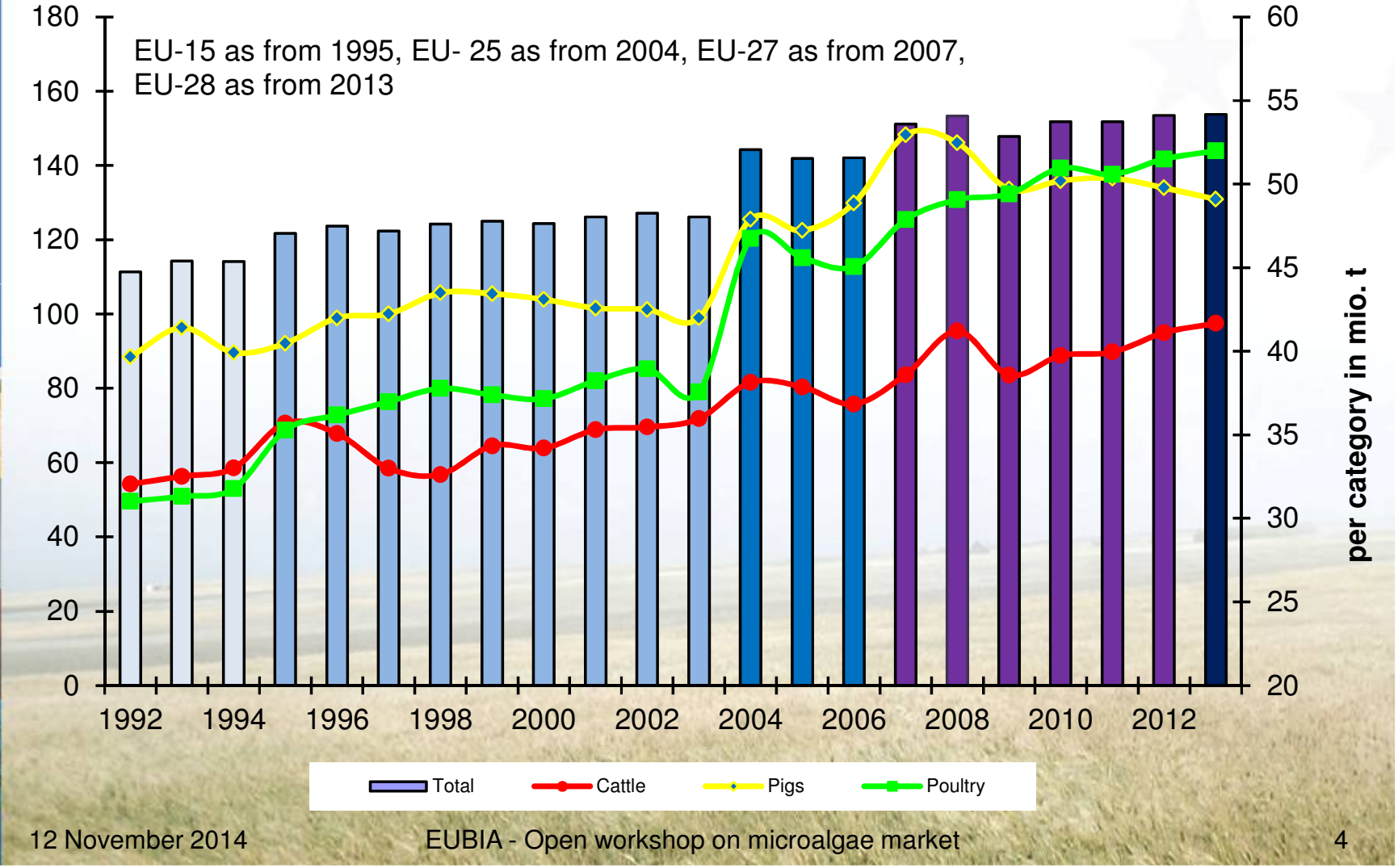
- Created in 1959
- Represents industrial compound feed and premixtures manufacturers
- 33 Members:
  - 24 Member Associations from 23 EU Member States
  - 3 Observer Members (Turkey, Serbia, Russia)
  - 6 Associate Members (Switzerland, Norway (3), EMFEMA and EFFPA)

EU-28 Livestock sourcing in feedingstuffs - 477 mio. t in 2013

Source: FEFAC / EU Commission

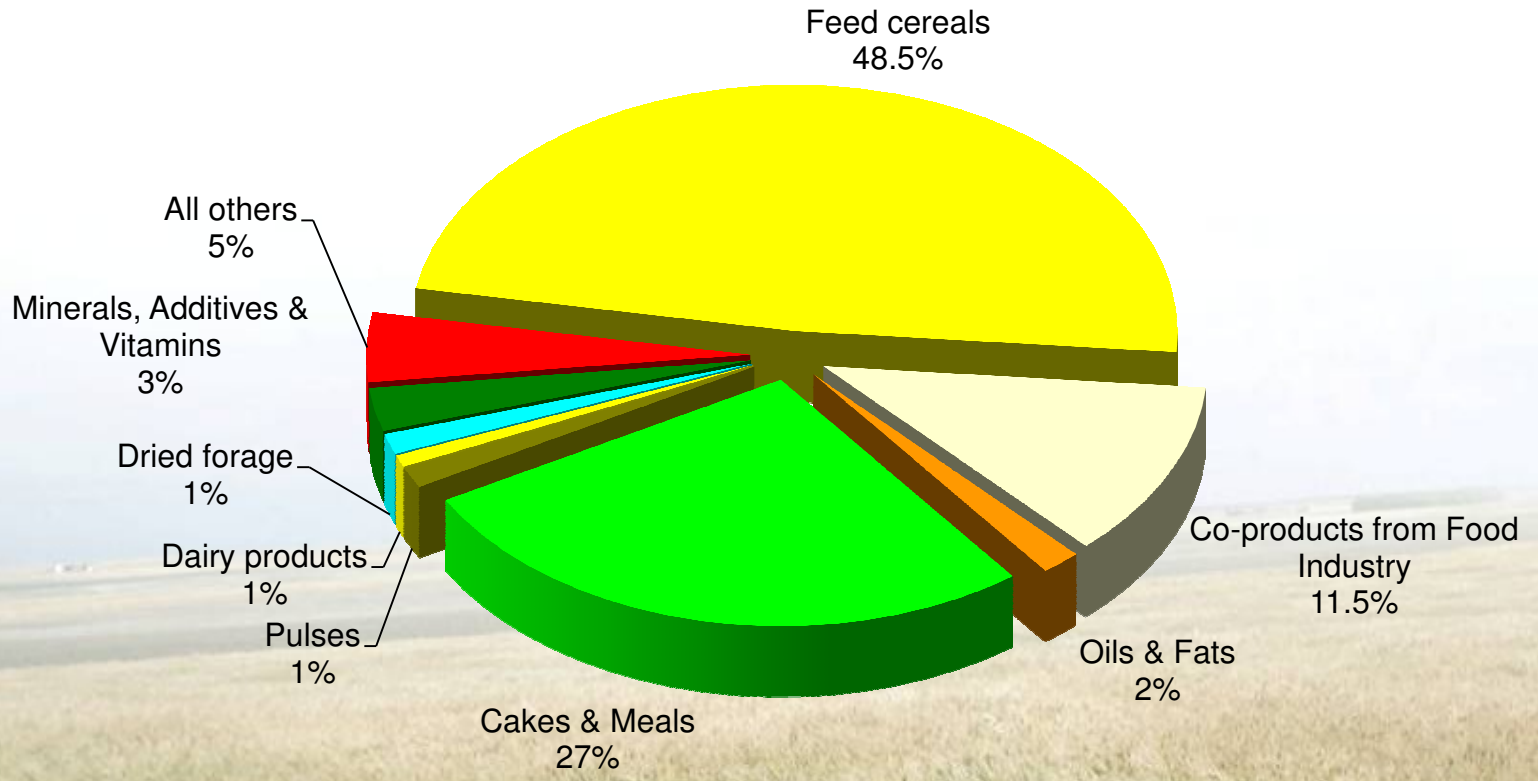


EU-28 compound feed production development per category +0.2% in 2013 vs 2012)



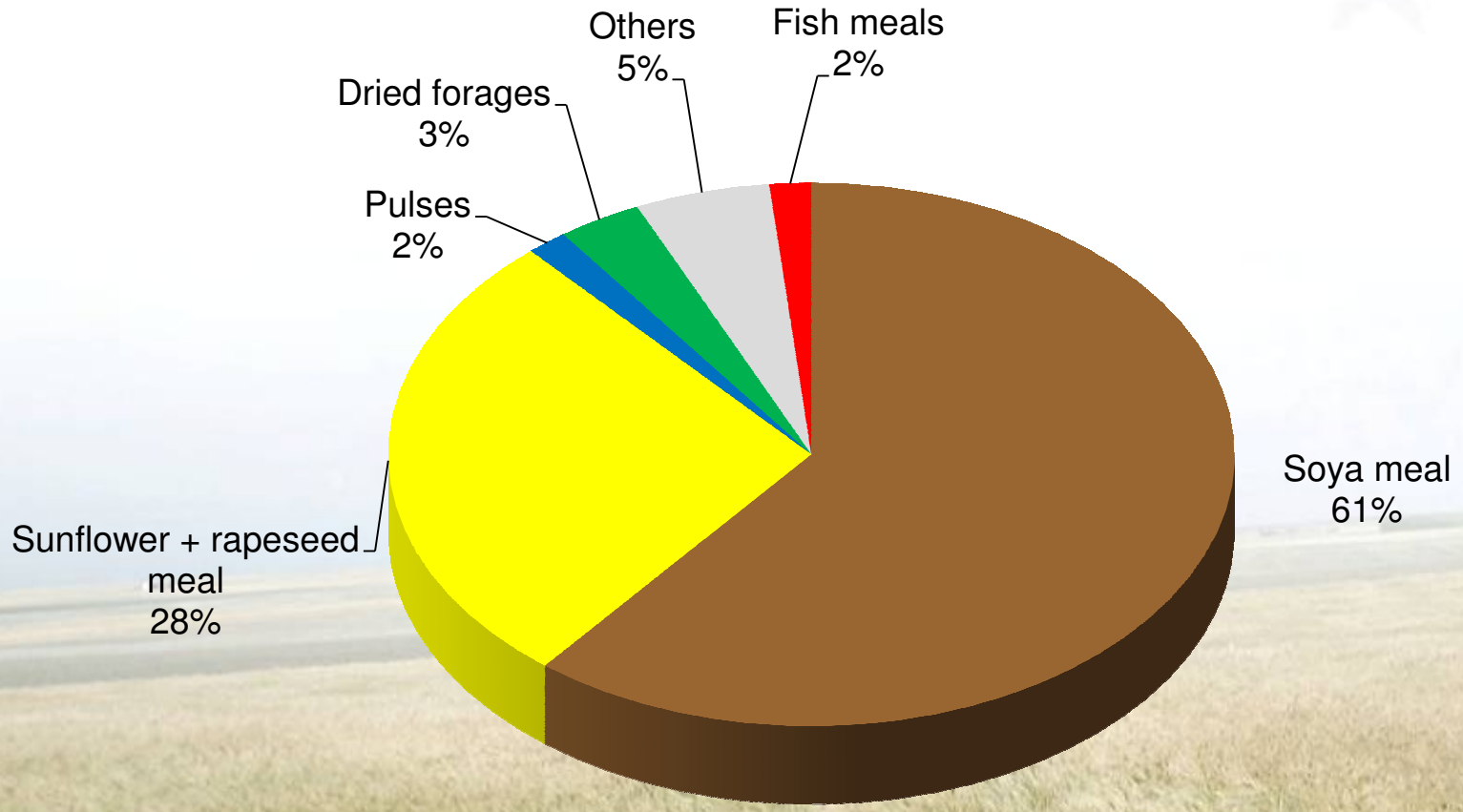
Feed material consumption by the EU-28 feed industry in 2013

Source: FEFAC



Share of soya proteins in the feed use of proteins feed materials rich in proteins in the EU-27 in 2011/12

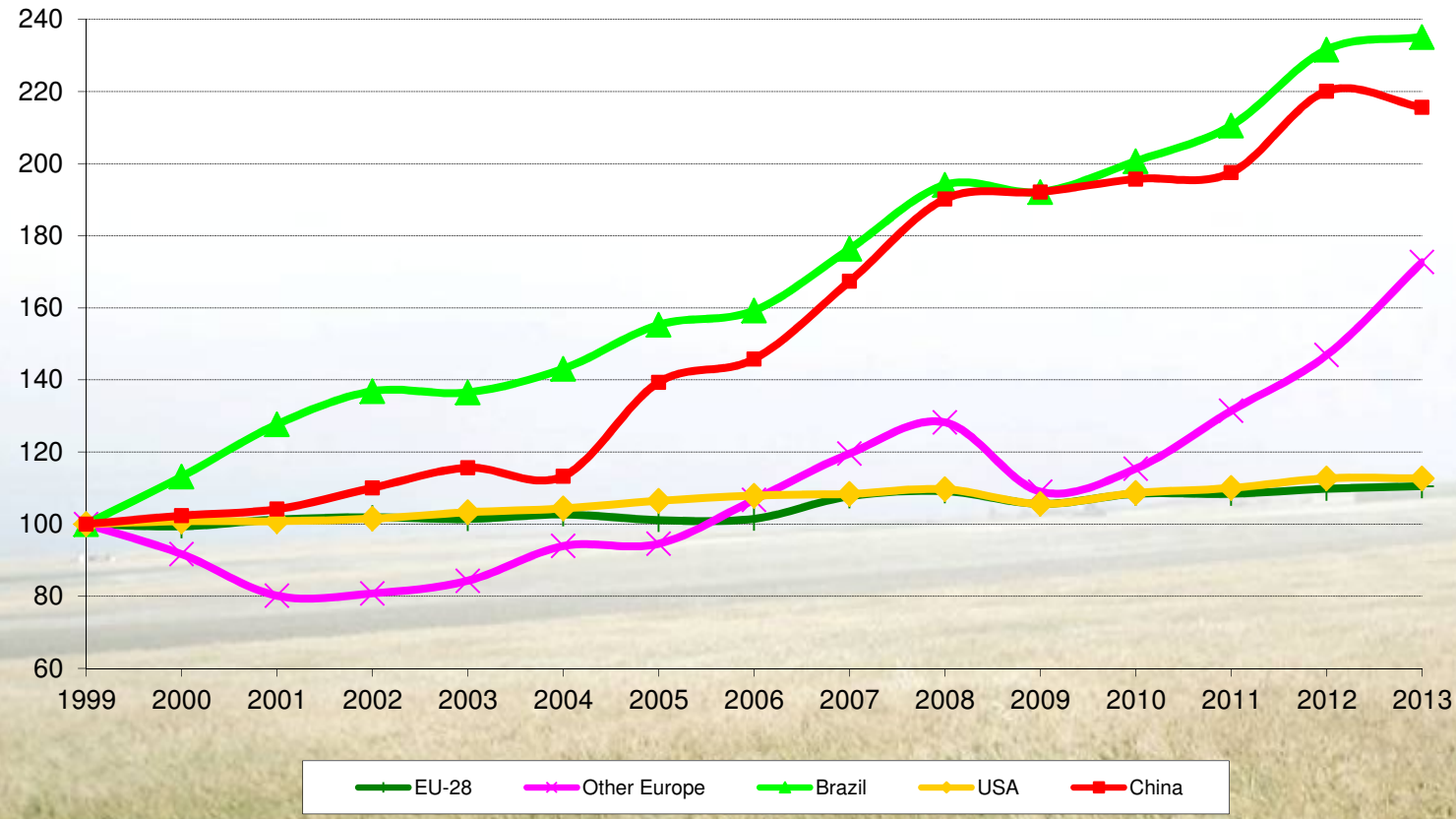
Source: PROLEA



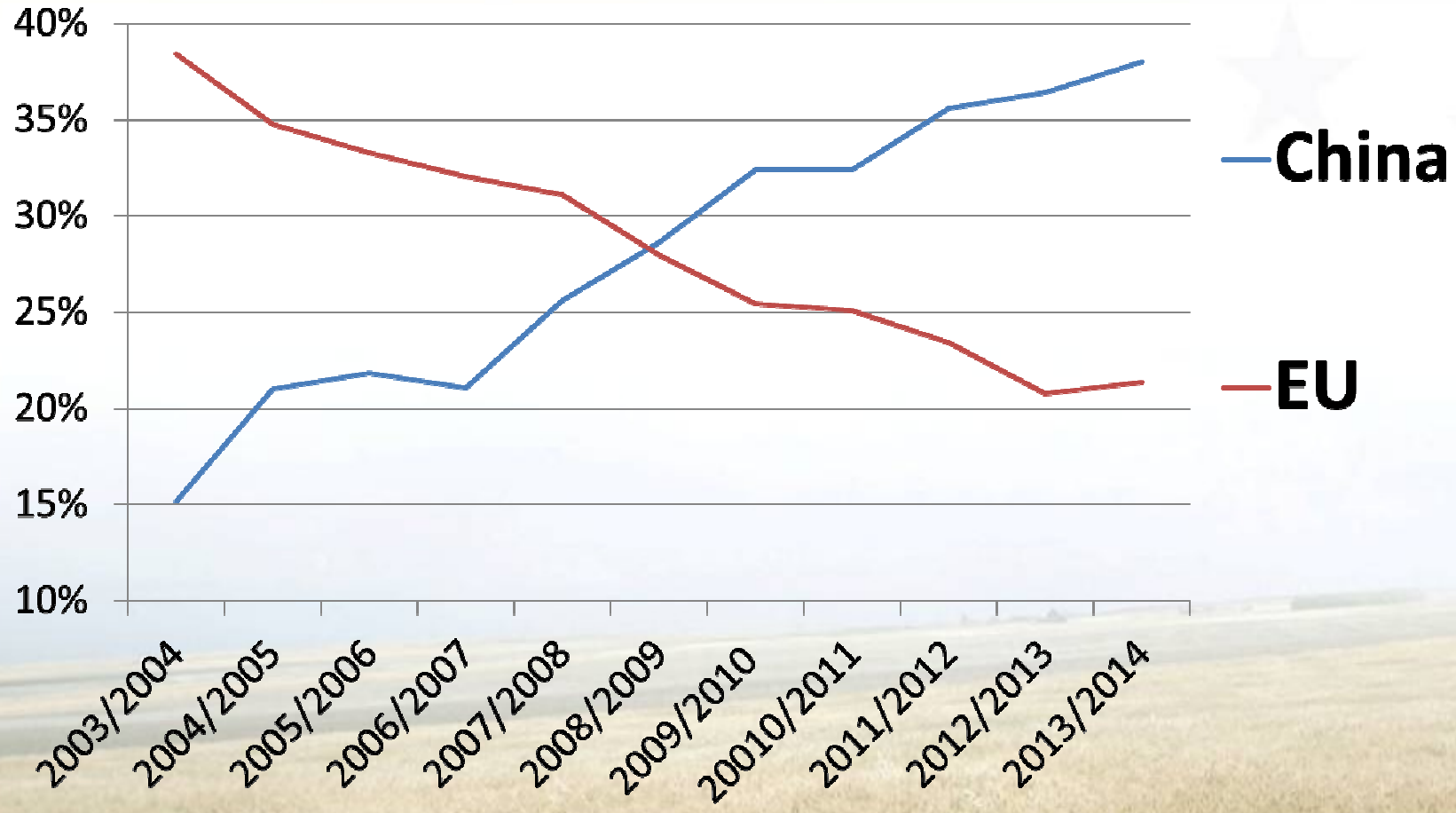
Evolution of global compound feed production

(Index 100 = 1999)

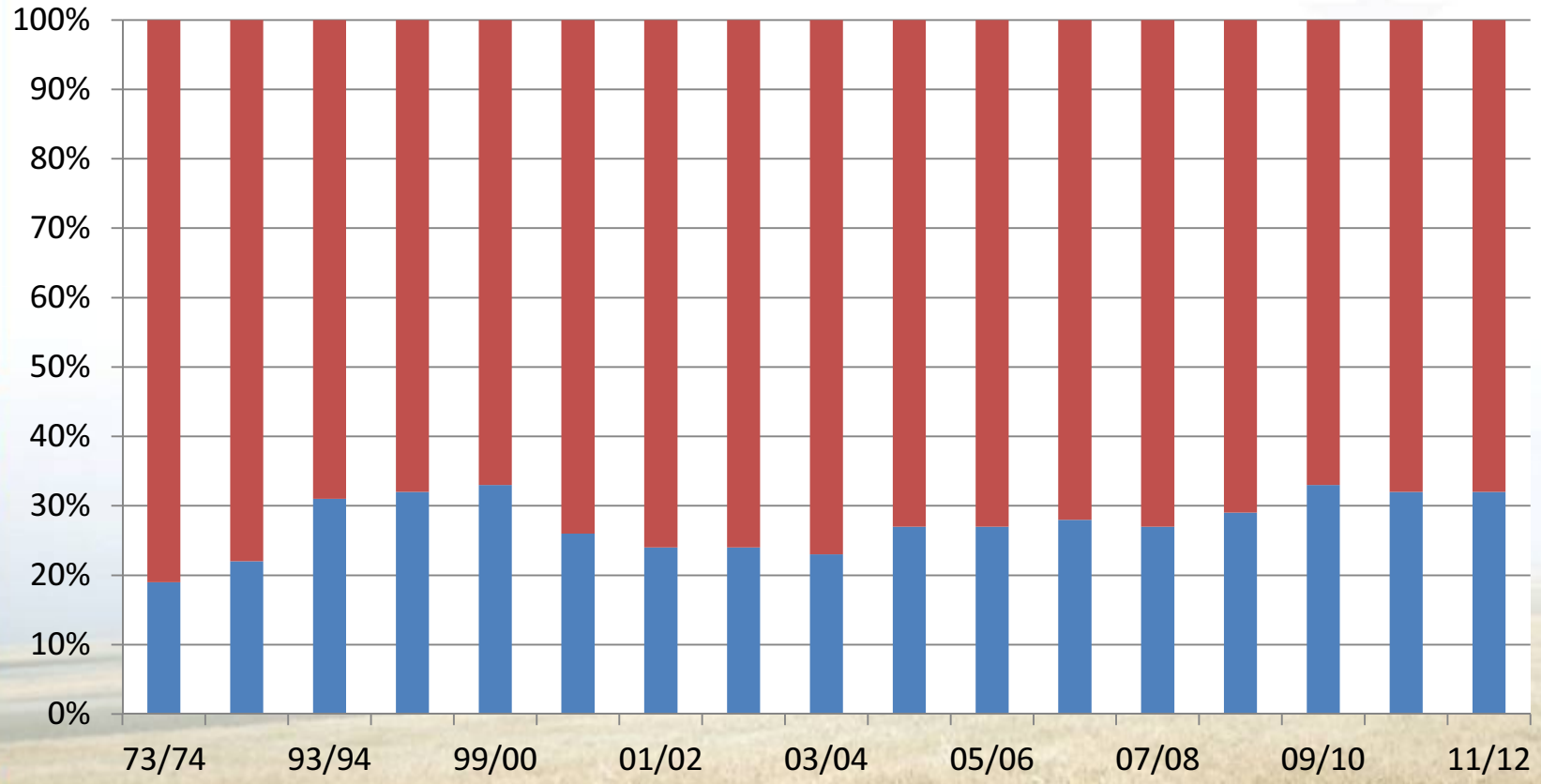
Source: FEFAC / Alltech / Feed International



Evolution of market share of global SBM equivalent imports (source:USDA)



Evolution of EU protein supply dependency (%)



Source: PROLEA

Protein sources alternative to imported soya

Drivers to look for alternatives

- Dependency in protein supply is a risk
- Sustainability (deforestation, LULUC)
- EU no longer most important customer for soya
- Capping of biofuels
- Asynchronous GM authorisations

Protein sources alternative to imported soya

Parameters to consider

- Nutritional value (amino acid profiles, energy value, antinutrients, etc.)
- Safety (toxins, heavy metals, dioxin, etc.)
- Compliance with legislation (process, feedstocks, etc.)
- Sustainability (CFP, land use, etc.)
- Sufficient volumes
- Stable quality

Protein sources alternative to imported soya

Which alternatives?

Alternative	+	-
EU produced soya	High nutritional value	Min 5 t/ha yield required
Rapeseed/sunflower	Well kwown	No growth potential, sustain.
Legumes (peas, etc.)	Used in 80es/90es	Diseases, low protein cotent
Krill	High protein content	Sustainability
PAP from pig and poultry	Highly digestible protein	Social acceptance, volumes
Insect proteins	High yield/ha; high protein	Legal hurdles
Seaweed	No land required	Low digestibility; high harvesting costs; drying
Duckweed	No land; availability of feedstocks (manure); quick growth	Harvesting costs; drying; contaminants; poor in Met and Trp
Microalgae	Low CFP; availability of feedstocks; quick growth; high protein quality	Harvesting costs; drying; contaminants; volumes

Crop and protein yield per hectare

	Protein content	Yield in EU conditions (DM/ha/y)	Protein yield (ton/ha/y)
Wheat (reference)	**11%**	**10 tons**	**1.1 tons**
Oil seeds – soybean	40%	1.5-3 tons	0.6-1.2 tons
Oil seeds – rapeseed	25%	3 tons	0.75 ton
Oil seeds – sunflower	23%	3 tons	0.7 ton
Legumes (pulses) – peas/beans/ lupine	17-35%	4-6 tons	1-2 tons
Legumes (forage) – lucerne	19%	13 tons	2.5 tons
Leaves – grass	12%	10-15 tons	1.2-2 tons
Leaves – (e.g. sugar beet leaves)	12%	4.5 tons	0.5 ton
Cereals – oat	12-15%	3-5 tons	0.4-0.75 ton
Pseudo cereals – quinoa	12-18%	3 tons	0.4-0.5 ton
Macro algae - seaweed	10-30%	25 tons	2.5-7.5 tons
Micro algae	25-50%	15-30 tons	4-15 tons
Duckweed	35-45%	30-40 tons	10-18 tons

Carbon footprint (CO2-eq./kg 88% DM) delivered at a Dutch farmer

- SBM (South America) 622
- SBM (Ukraine) 574
- SBM (Netherlands) 544

- Sunflower meal (S-A) 554
- Sunflower meal (Ukraine) 711
- Sunflower meal (France) 686

- Poultry meat & bone meal 326

- Luzerne 1588
- Maize DDGS 895
- Meal worms 3347
- Algae (oil for bio diesel) 348
  Upstream CFP fully allocated to biodiesel
- Single cell proteins 3989

LIVESTOCK RESEARCH
WAGENINGEN UR

EU feed legislation: new framework structure in 2014

General food law
Regulation 178/2002

Feed & food official controls
Regulation 882/2004

Feed Hygiene Reg.
Regulation 183/2005

Marketing and use of feed
Regulation 767/2009

Medicated feed
Directive 90/167

Undesirable Directive
2002/32

Feed Additives
Regulation 1831/2003

GM feed&food
Regulation 1829/2003

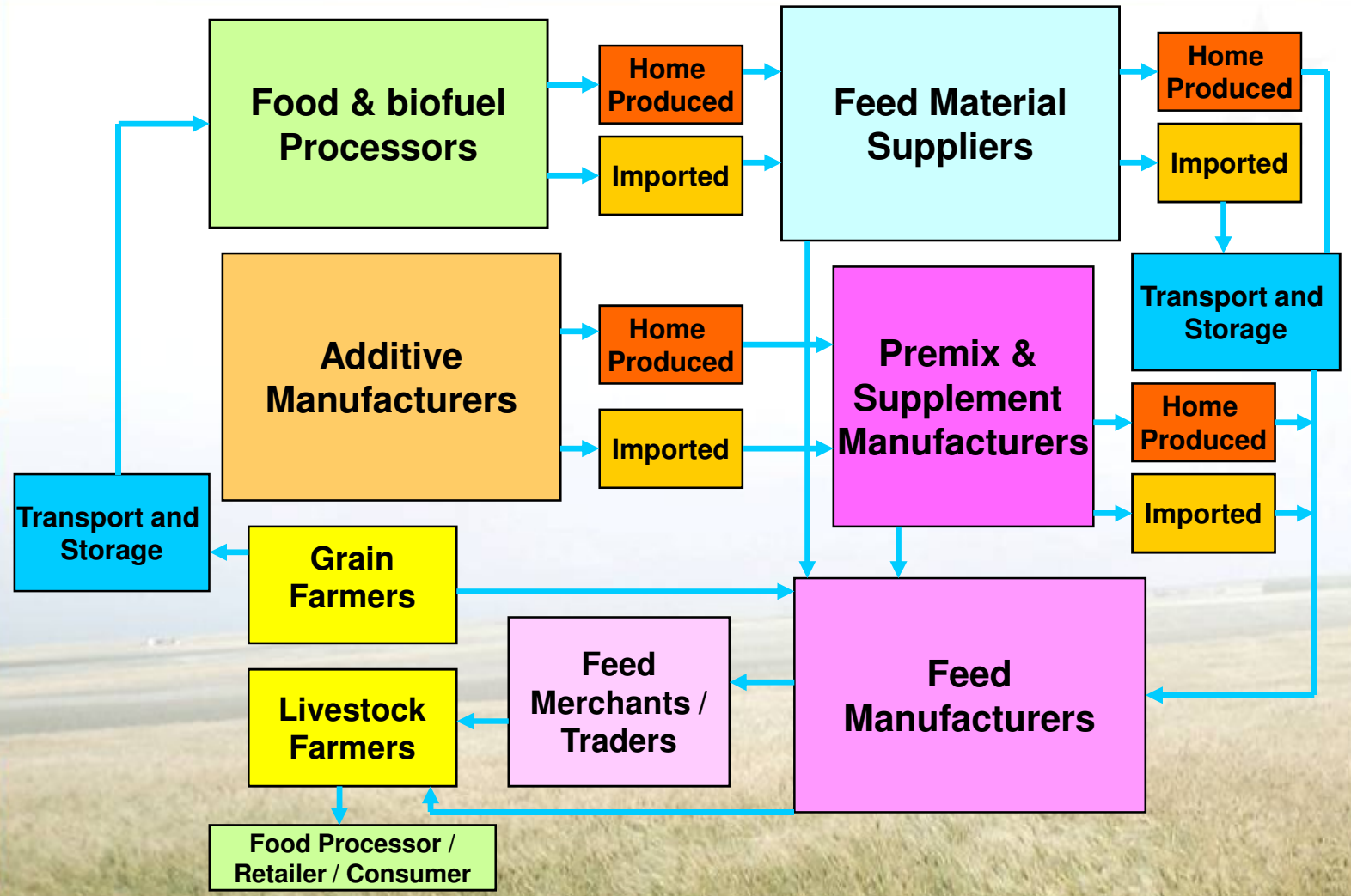
Animal by-products
Regulation 1069/2009

TSE
Regulation 999/2001

Key principles of General Food Law (R178/2002) and Feed Hygiene (R183/2005)

- Status of feed business operators for all people producing, handling, storing, processing etc. feed
- Responsibility of individual operators for safety
- Traceability obligation (one step back- one step forward)
- HACCP for all feed business operators (except farmers being primary producers)

The Supply Chain is Complex

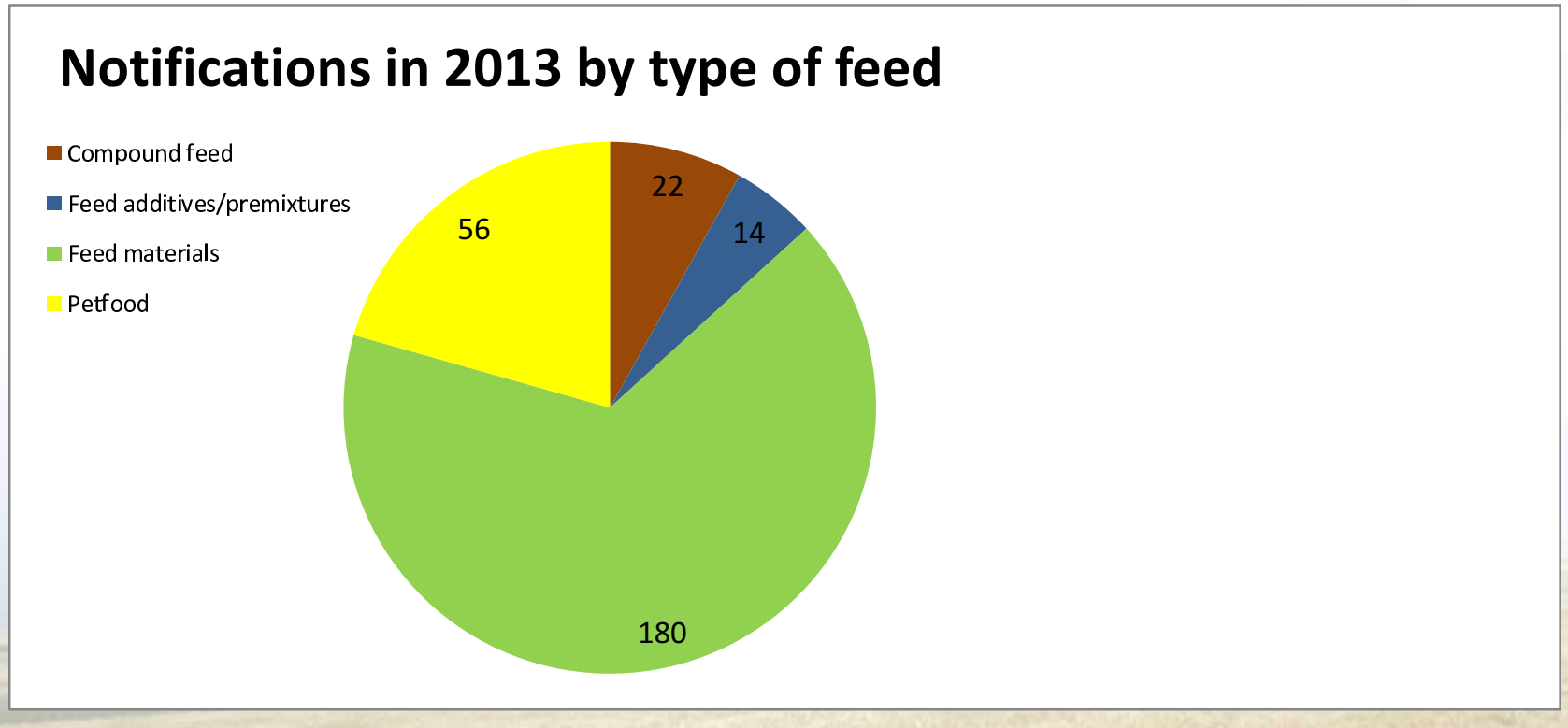


Key areas of risk: Feed ingredients

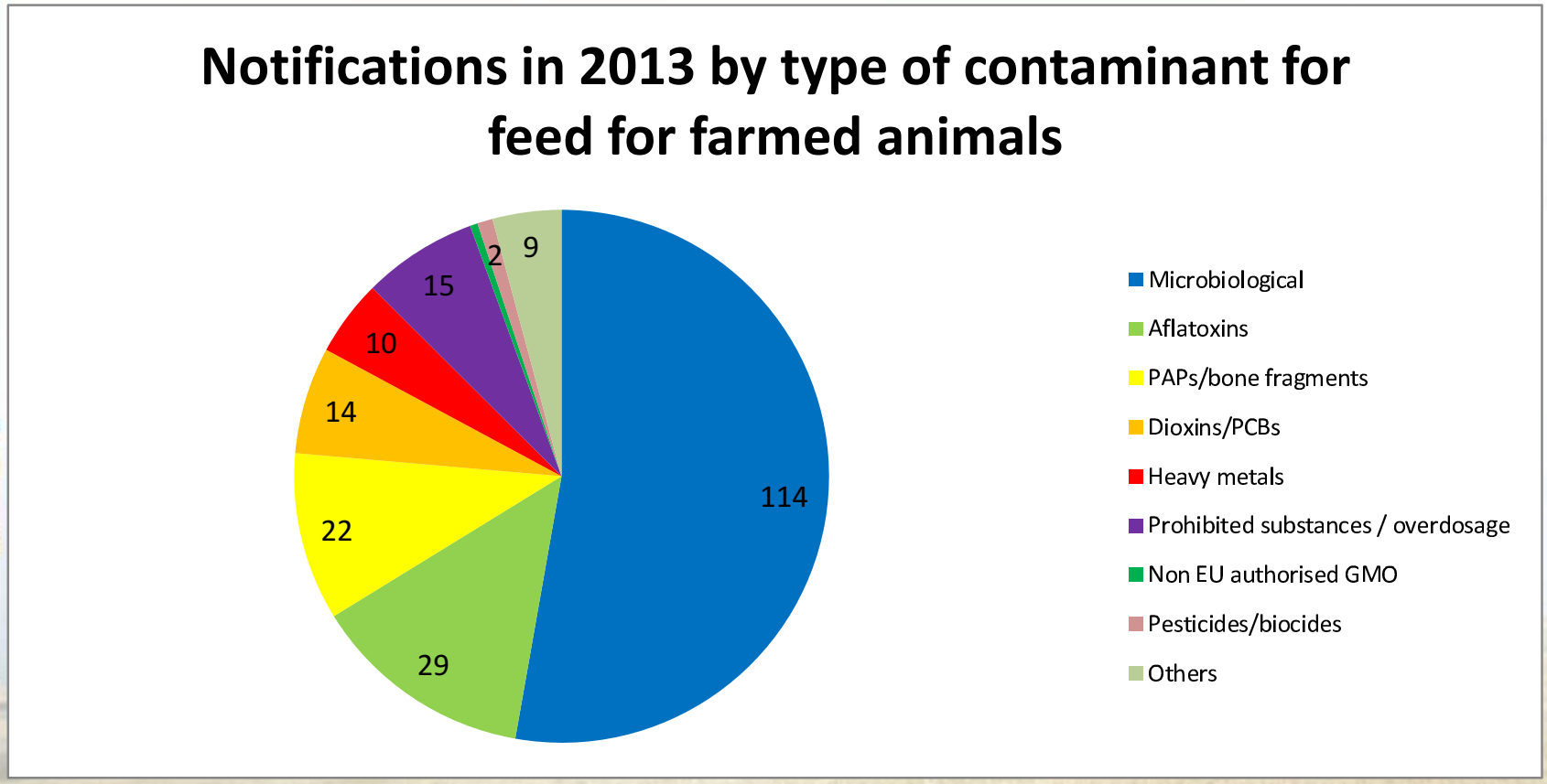
- Experience has shown that many feed / food scares are the result of contamination of feed materials or feed additives. Such contamination can have wide geographical impact

- Prime examples are:
  - Prions in animal proteins – BSE
  - Bone fragments in plant feed materials
  - Dioxins in feed materials and additives
  - Heavy metals in feed materials and additives
  - Pharmaceutical waste (MPA)
  - Melamine
  - Pesticide residues
  - Salmonella - food poisoning
  - Aflatoxin in maize - milk

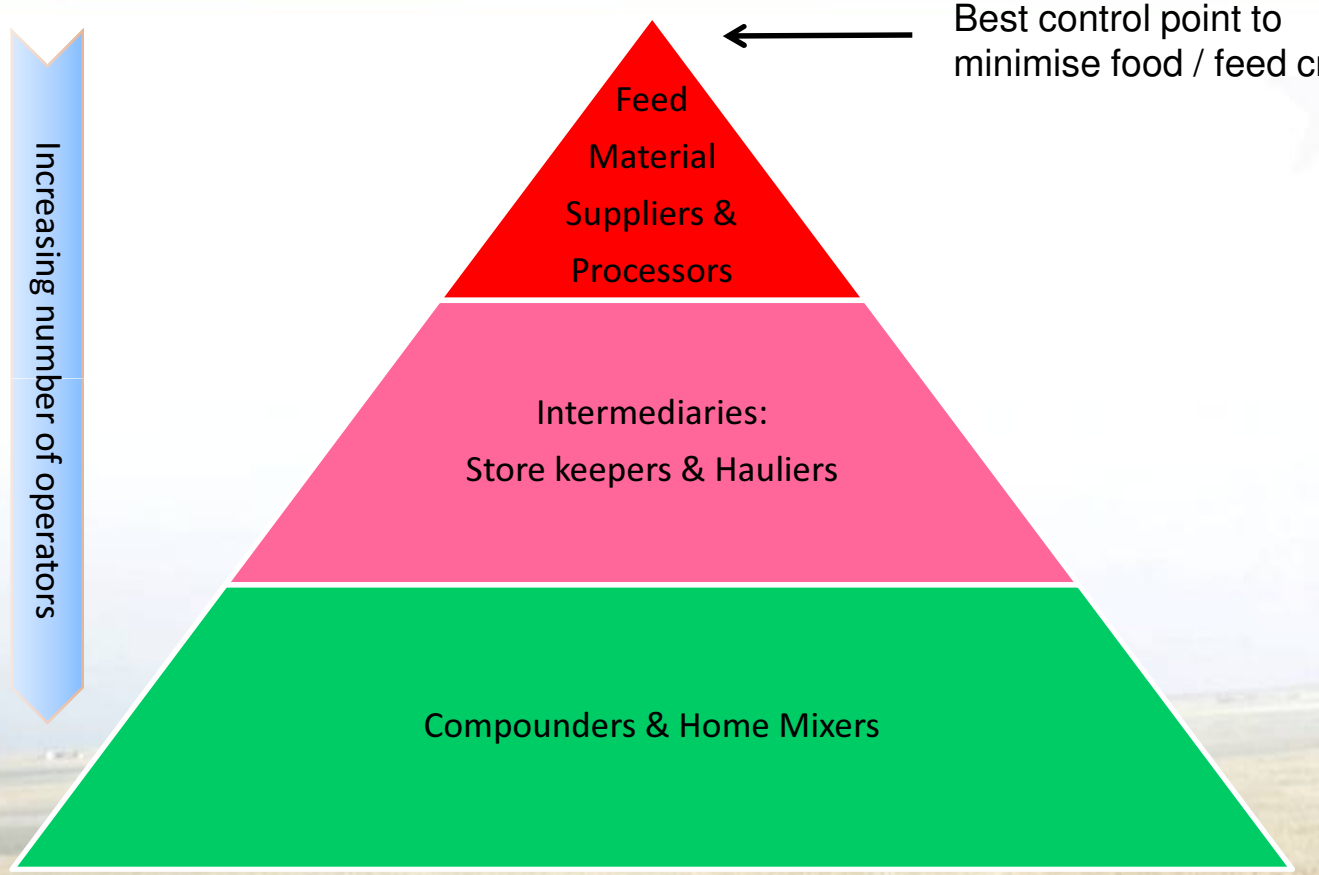
Notifications to the EU Rapid Alert System Feed and Food (RASFF) 2013 – by type of feed



Notifications to the EU Rapid Alert System Feed and Food (RASFF) 2013 – by type of contaminants



Supply chain pyramid: primary testing at supplier level



Conclusions

- Need to find alternatives to soya
- Criteria for alternatives are several
- No « magic » alternative
- Potential for microalgae
- Need to know more about safety / contaminants
- Need that suppliers feel like feed operators

Thank you for your attention

FEFAC

Fédération Européenne des Fabricants d'Aliments Composés

Europäischer Verband der Mischfutterindustrie

European Feed Manufacturers' Federation

www.fefac.eu