

# The rules of feed ban as a factor in the prevention of Transmissible spongiform encephalopathies (TSE)

*PhD hanna Balcerak*

*TAIEX workshop on Export Quality*

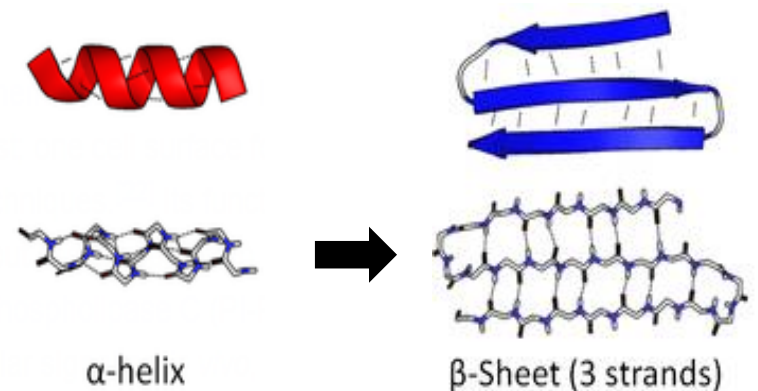
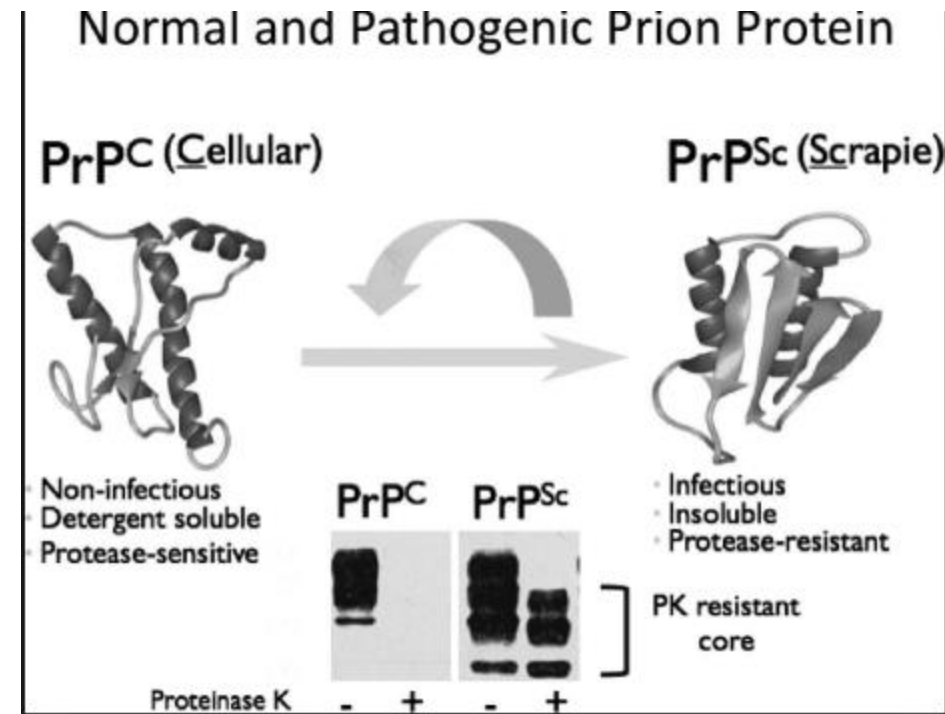
*Bishkek, Osh 23-27 April 2018*

# What are TSEs?

TSEs are neurological diseases , caused by proteinaceous infectious particles, the prion

The infectious isoform of PrP, known as PrP<sup>Sc</sup>, is able to convert normal PrP<sup>C</sup> proteins into the infectious isoform by changing their conformation, or shape

PrP gene sequence may influence susceptibility to deases (intra- and inter species)



# Animal Prion Diseases

Scrapie – **sheep, goat**

Chronic Wasting Disease (CWD) – **deer, elk, moose**

Bovine Spongiform Encephalopathy (BSE) – **cattle**

Transmissible mink encephalopathy (TME) – **mink**

Feline spongiform encephalopathy – **large and domestic cats**

Spongiform encephalopathy of captive **ungulates** – exotic hoof-stock in zoological parks

# Human Prion Diseases

**Kuru**

**Creutzfeldt–Jakob disease (CJD)**

**Gerstmann-Sträussler-Scheinker syndrome (GSS)**

**Fatal familial insomnia**

## Regulation (EC) No 999/2001

In reaction to the BSE epidemic in the EU, [Regulation \(EC\) No 999/2001 of the European Parliament and of the Council of 22 May 2001 laying down rules for the prevention, control and eradication of certain transmissible spongiform encephalopathies](#) was adopted

TSE Regulation represents a uniform legal basis for the control, prevention and eradication of TSE and BSE.

It has been amended more than 50 times since its introduction.

# Preventive and control measures regarding BSE in EU

## **TSE Monitoring**

- Testing of sick and suspected animals (passive surveillance)
- Testing of cattle over 30/24 months (active surveillance)

## **Feed ban**

## **Removal of SRM**

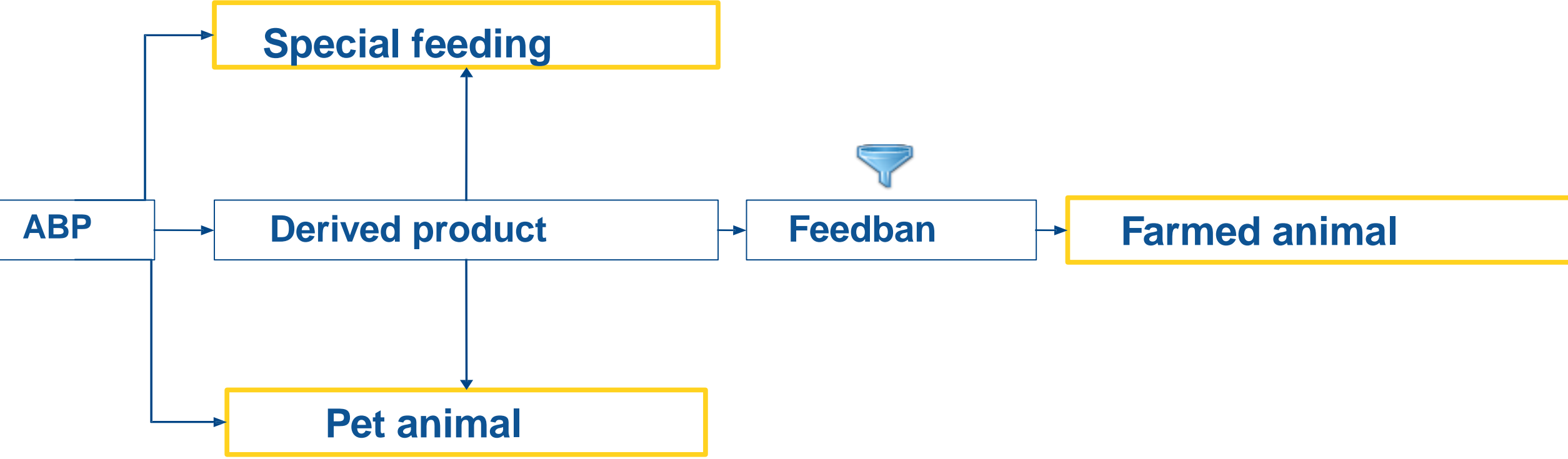
## **Rules for intra-community trade**

## **Import restrictions**

## **Eradication measures after confirmation of BSE/TSE**

## **Identification & Registration system for bovine animals**

# Flowchart Feeding ABP



# Bans for feeding

## Cannibalism ban

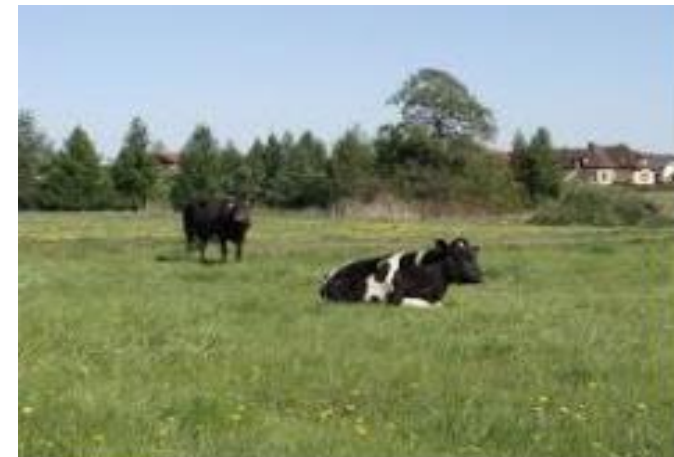
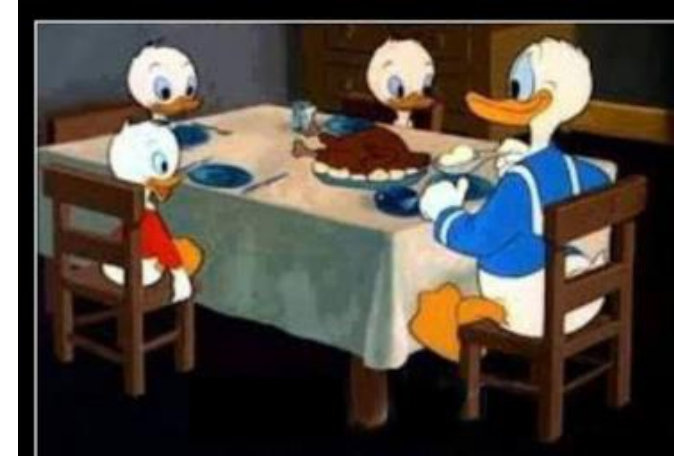
- Terrestrial: PAP species X to species X
- PAP of farmer fish species to farmer fish speciesY

## Catering waste ban

- To farmed animals
- Also derived from catering waste
- Not authorized in commercial petfood

## 21 days waiting period for OF/SI

- Access to pasture land
- Harvest feed materials





**Total feed ban of the use of meat and bone meal in the animal feeding has been introduced**

**1 November 2003**

**(for ruminants from 1999)**

# Definition

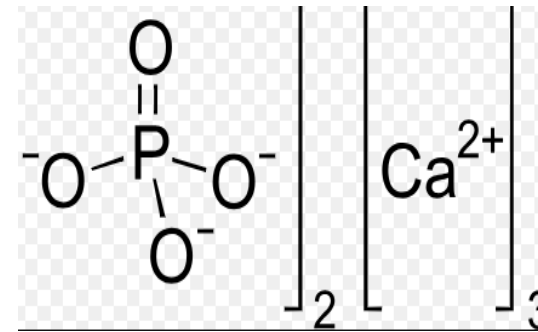
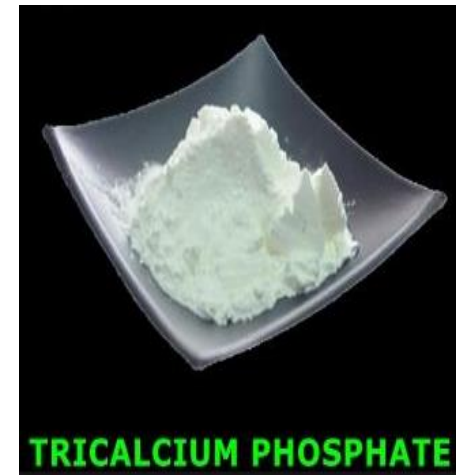
## Processed Animal Protein – PAP, means:

Animal protein derived entirely from category 3 material, including blood meal and fish meal after appropriate processing.

Intended for use in animal feedinf, including petfood, as well as organic fertilisers or soil improvers;

## PAP does not include:

Blood products, milk, milk-based products, colostrum, centrifuge sludge from milk processing, gelatine, hydrolised proteins, di- and tricalcium phosphate, collagen, eggs and ess-products incliding eggshells



# Gelatine

**gelatine** means natural, soluble protein, gelling or non-gelling, obtained by the partial hydrolysis of collagen produced from bones, hides and skins, tendons and sinews of animals;



## Processing standards for gelatine

Unless the gelatine has been produced in accordance with Section XIV of Annex III to Regulation (EC) No 853/2004, it must be produced by a process that ensures that Category 3 material is subjected to a treatment with acid or alkali, followed by one or more rinses.

The pH must be adjusted subsequently. Gelatine must be extracted by heating one or several times in succession, followed by purification by means of filtration and sterilisation.

After having been subjected to the processes referred to in point 1, gelatine may undergo a drying process and, where appropriate, a process of pulverisation or lamination.

The use of preservatives, other than sulphur dioxide and hydrogen peroxide, shall be prohibited.

# PAP

**The following microbiological standards shall apply to derived products:**

**Salmonella: absence in 25 g:  $n = 5$ ,  $c = 0$ ,  $m = 0$ ,  $M = 0$**

**Enterobacteriaceae:  $n = 5$ ,  $c = 2$ ,  $m = 10$ ,  $M = 300$  in 1 g**

## Processing standards for PAP

**Processed animal protein of mammalian origin must have been submitted to processing method 1 (pressure sterilisation);**

**PAP from blood – processing methods 1-5**

**PAP from fish (fish meal) – processing methods 6**



# Collagen

**Collagen** means protein-based products derived from hides, skins, bones and tendons of animals



## Processing standards

Unless the collagen has been produced in accordance with the requirements for collagen set out in Section XV of Annex III to Regulation (EC) No 853/2004, it must be produced by a process ensuring that unprocessed Category 3 material is subjected to a treatment involving washing, pH adjustment using acid or alkali followed by one or more rinses, filtration and extrusion.

After that treatment collagen may undergo a drying process.

The use of preservatives, other than those permitted under Union legislation shall be prohibited..

# Blood products



**blood products** means derived products from blood or fractions of blood, excluding blood meal; they include dried/frozen/liquid plasma, dried whole blood, dried/frozen/liquid red cells or fractions thereof and mixtures

## Raw material

Only blood referred to in Article 10(a) and Article 10(b)(i) of Regulation (EC) No 1069/2009 may be used for the production of blood products.

## Processing standards:

Blood products must have been submitted to:

- (a) any of the processing methods 1 to 5 or processing method 7;
- (b) another method which ensures that the blood product complies with the microbiological standards for derived products

# Hydrolysed proteins

**hydrolysed proteins** means polypeptides, peptides and aminoacids, and mixtures thereof, obtained by the hydrolysis of animal by-products



## Processing standards for hydrolysed protein

Hydrolysed protein must be produced using a production process involving appropriate measures to minimise contamination. Hydrolysed protein derived from ruminants shall have a molecular weight below 10 000 Dalton.

In addition to the requirements of the first paragraph, hydrolysed proteins entirely or partly derived from ruminants' hides and skins shall be produced in a processing plant dedicated only to hydrolysed protein production, using a process involving the preparation of raw Category 3 material by brining, liming and intensive washing followed by exposure of the material to:

(a) a pH of more than 11 for more than three hours at a temperature of more than 80 °C and subsequently by heat treatment at more than 140 °C for 30 minutes at more than 3,6 bar; or

(b) a pH of 1 to 2, followed by a pH of more than 11, followed by heat treatment at 140 °C for 30 minutes at 3 bar.

# List of insects from which it is allowed to produce PAP

PAP production was authorized only from the following insect species, which were considered as safe:

- Black Soldier Fly (*Hermetia illucens*)



- Common Housefly (*Musca domestica*),



- Yellow Mealworm (*Tenebrio molitor*),



- Lesser Mealworm (*Alphitobius diaperinus*)



- House cricket (*Acheta domesticus*)



- Banded cricket (*Gryllodes sigillatus*)



- Field Cricket (*Gryllus assimilis*)





## Larvae at the stage ready for processing



## PAP and oil from insects

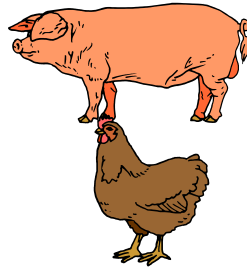


	FARMED ANIMALS (OTHER THAN FUR ANIMALS)			Pets and fur animals
	Ruminants	Non-ruminant (except fish)	Fish	
Egg, eggs products, milk, milk product, colostrum				
Gelatine from non-ruminant				
Hydrolysed proteins from non-ruminants or from ruminant hides and skins				
Fish meal	Only in milk replacers for unweaned ruminants		Cannibalism ban	
Di and tricalcium phosphate of animal origin				
Blod products from non-ruminants				
Blood meal from non-ruminants				
PAP from non-ruminants				Cannibalism ban
Other				Cannibalism ban

SLAUGHTERHOUSE, CUTTING PLANT

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NON-RUMINANTS



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PROCESSING PLANT PRODUCING/EKSPORTING PAP

EXPORT NON-RUMINANT PAP

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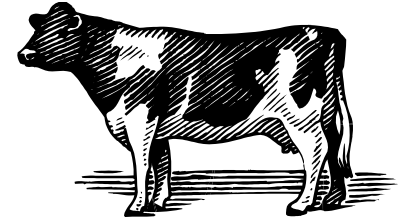
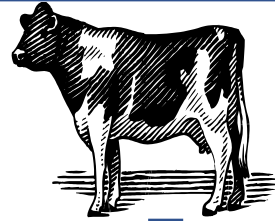
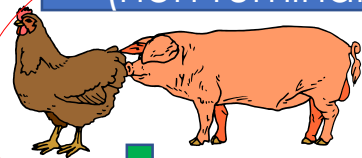
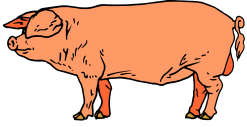
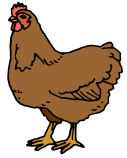
**SLAUGHTERHOUSE, CUTTING PLANT**

**RUMINANTS**

**NON-RUMINANTS**

**A**

**MIXED ACTIVITY**  
(non-ruminants and ruminants)



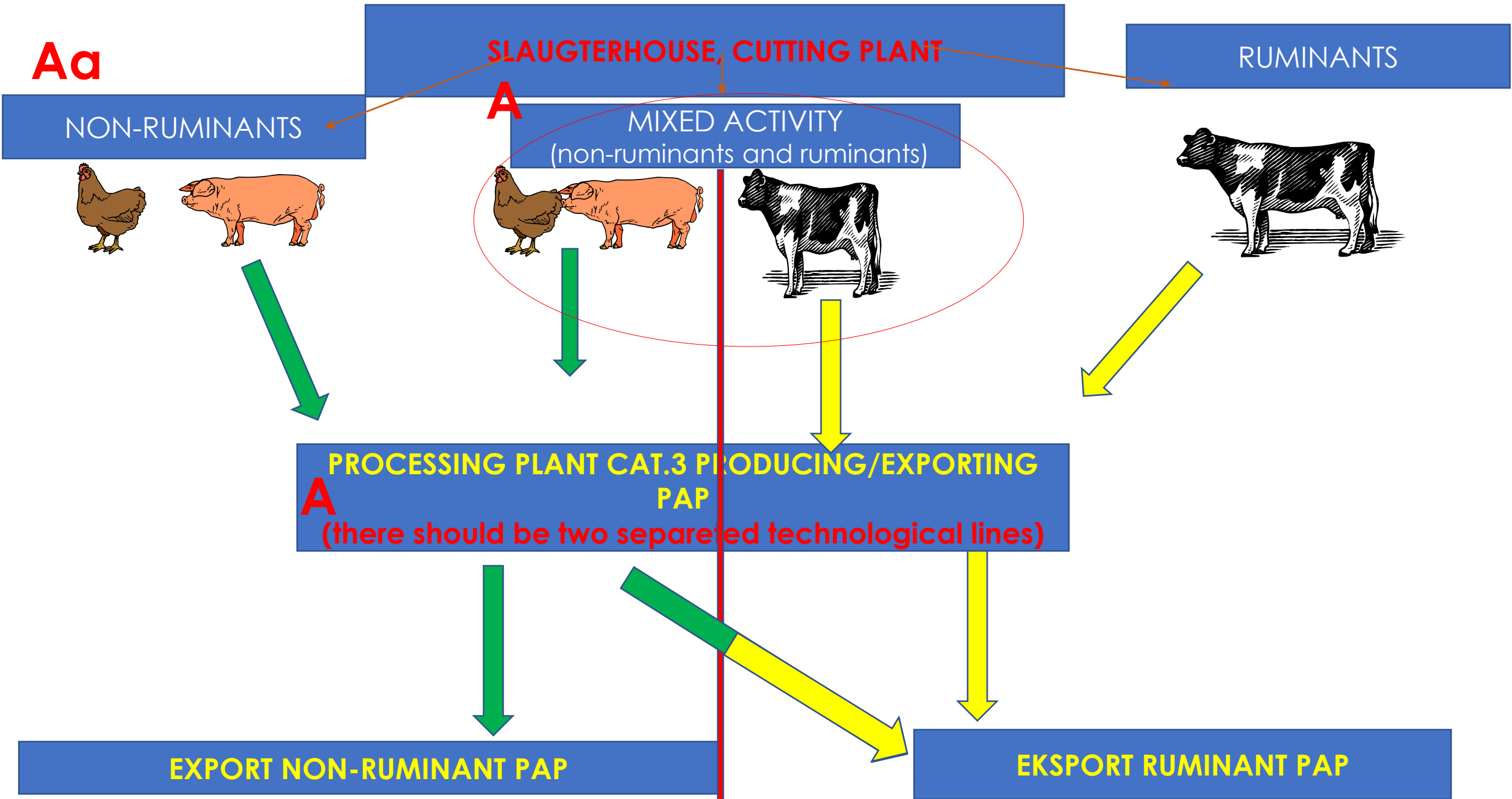
**PROCESSING PLANT CAT.3 PRODUCING/EXPORTING  
PAP**

**A**

(there should be two separated technological lines)

**EXPORT NON-RUMINANT PAP**

**EKSPORT RUMINANT PAP**



# Krok 1





[Return to "Lists of Approved Establishments" page](#)

Sections    Search by name    Search by id number

**Section IV: Processing plants**

No.	App. no.	Name	woj.	Town	Postal code	Cat.	Activities	Product types	TSE Feed ban registrations/authorisations	Associated activities	Remarks
1	02037601	Przedsiębiorstwo Rolno-Spożywczo-Handlowe Kompas Sp. z o.o.	DOL	Głogów	67-200	3	PROCP	FATOL FATF PAP			
2	02097601	SONAC Osetnica Sp. z o.o.	DOL	Osetnica	59-225	3	PROCP	FATF PAP		STORP, INCP, TECHP, TRANS, MEDIAT	
3	04137601	ZPHU ALMOR Alina Lacka ul. Ceynowy 4, 89-500 Tuchola, Zakład Produkcji Mączki Rybnej w Iłowie	KUJ	Iłowo	89-400	3	PROCP	FATF PAP			
4	04147601	Przedsiębiorstwo Produkcyjne POLUTIL Bogdan Budek, Krzysztof Kwiatkowski Spółka Jawna	KUJ	Ostrowite	86-141	3	PROCP	FATF PAP			
5	04187602	Przedsiębiorstwo Produkcyjno-Handlowe HETMAN Sp. z o.o., Florianów 24, 99-311 Bedno Zakład w Falborzu	KUJ	Brześć Kujawski	87-880	3	PROCP	PAP FATF			suspen
6	04027601	Brodnickie Zakłady Żelatyny	KUJ	Brodnica	87-300	3	PROCP	OTHER			
7	04037601	Polfish s.c. Mirosław Cichoradzki, Krystian Cichoradzki	KUJ	Trzeciewiec	86-022	3	PROCP	PAP			
8	04057401	Przedsiębiorstwo Przemysłowo-Handlowe HETMAN spółka z ograniczoną odpowiedzialnością Zakład przetwórczy kategorii 1	KUJ	Olszówka	87-400	1	PROCP	FATOL MBM			
9	04077401	STRUGA S.A.	KUJ	Jezuicka Struga	88-111	1	PROCP	FATOT FATOL MBM			
10	04077404	STRUGA S.A.	KUJ	Jezuicka Struga	88-111	1	PROCP	FATOT FATOL MBM		04077401,04077602,04078102,04079123	
11	04077601	STRUGA S.A.	KUJ	Jezuicka Struga	88-111	3	PROCP	FATOT FATOL FATF PAP			suspen
12	04077602	STRUGA S.A.	KUJ	Jezuicka Struga	88-111	3	PROCP	PAP	PAP	04077401, 04077601, 04078102	
13	06117601	Przedsiębiorstwo Produkcyjno-Handlowe AGRO-TOP Sp. z o.o. z/s w Wiśniewie, 08-112 Wiśniew, ul.T.Kościuszki15, Oddział w Kolonii Grzędówka, Zakład Produkcyjny Kolonia Grzędówka34B, 21-400 Łuków	LBL	Łuków	21-400	3	PROCP	FATF		TRANS	
14	06147401	PRP Beaufit S. Osetnica, T. Osetnica Os. im. J. Piłsudskiego	LBL	Zastawia	24-	4	PROCP	FATOT			





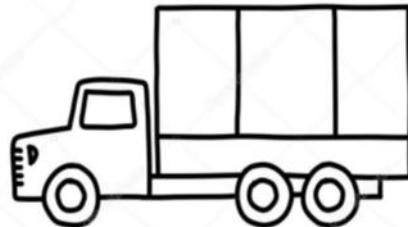
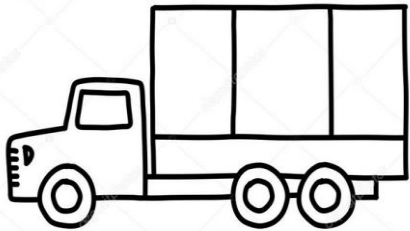
23	10127601	Przedsiębiorstwo JASTA Sp. z o.o. Spółka Komandytowa Zakład Przetwórczy w Danielowie	LOD	Danielów	97-360	3	PROCP	FATF PAP		transport uppz kat.3		
24	10127602	ZPM GAIK	LOD	Niedośpielin	97-525	3	PROCP	FATF			suspended	
25	10147601	General Food Supply Sp z o. o.	LOD	Złoczew	98-270	3	PROCP	FATF PAP				
26	10147602	Ubojnia Drobiu Wyrębski Grzegorz Wyrębisk	LOD	Wróblew	98-285	3	PROCP	FERT			suspended	
27	10157601	Polish Rendering Company Sp. z o.o.	LOD	Pszczonów	99-420	3	PROCP	BLPF	PAP BP	transport ubocznych produktów pochodzenia zwierzęcego kat. 3 (krew surowa drobiowa i wieprzowa) WNI: 10158003		
28	10207601	P.P.H. ALFA, Jan Chrzęst i Marcin Chrzęst, Sp. j.	LOD	Dąbrówka Wielka	95-100	3	PROCP	FATOL FATF PAP		TRANS		
29	10067601	Zakład Przetwórstwa Jaj OVOVITA A.Kurasik	LOD	Prawda	95-030	3	PROCP	EGG			suspended	
30	12107601	Przedsiębiorstwo Przetwórstwa Rolno-Spożywczego BASSO Gołkowice Dolne 201	MAL	Gołkowice Dolne	33-388	3	PROCP	EGG				
31	12137601	Auto-Sprint s.c. Elżbieta Wiesław Linkiewicz, ul. Spacerowa 37, 32-608 Osiek	MAL	Osiek	32-608	3	PROCP	FATF				
32	12157601	Firma Produkcyjno Handlowa S.C. Józef i Tadeusz Świstek	MAL	Maków Podhalański	34-220	3	PROCP	FATOT				
33	12167601	Zakład Produkcyjno-Handlowy EKO-TOCZEK Toczek Franciszek	MAL	Łęg Tarnowski	33-131	3	PROCP	FATOT		symbol działalności: 79, transport w ramach prowadzonej działalności		
34	12107601	Zakład Produkcji Pasz KEMOS M. Jarmuż, M. Karwowski, T. Kurciński Sp. z	MAL	Nieniewice	32-	3	PROCP	FATF PAP	PAP BP			

## TRANSPORT FEED MATERIALS AND COMPOUND FEED

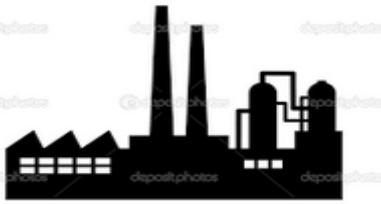
Bulk of fish meal  
2, 3-calcium  
phosphate  
Blood products

Bulk of non-ruminant  
PAP for aquaculture  
animals

Bulk of feed materials  
and compound feed for  
ruminants



**Vehicles and containers which have been previously used for the transport of the products referred to in that point may be subsequently used for the transport of feed intended for ruminants/non-ruminant farmed animals other than aquaculture animals provided that they are cleaned beforehand in order to avoid cross-contamination, in accordance with a documented procedure which has been given prior authorisation by the competent authority.**



**Aa**

# FEED MILL

Compound feed for non ruminants with:  
*fish meal, 2, 3-calcium phosphate, blood products*

Compound feed for aquaculture animals with  
*non-ruminant PAP or processed insected proteins*

Compound feed for ruminant

TRANSPORT

TRANSPORT

TRANSPORT

PRODUCTION

PRODUCTION

PRODUCTION

PACKAGING

PACKAGING

PACKAGING

STORAGE

STORAGE

STORAGE

Records

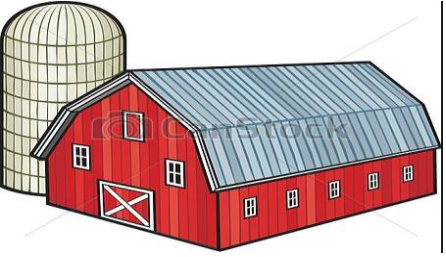
Records

Records

SAMPLING

PCR  
SAMPLING

SAMPLING



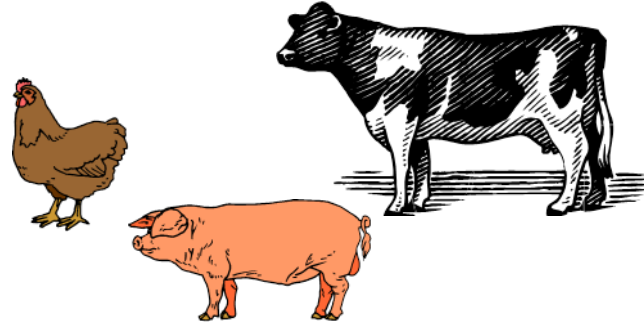
**Aa**

# STOCK FARMING



## Not allowed use and storage on farm:

- Processed animal proteins derived from non-ruminant
- Fish meal
- Processed insect proteins
- 2,3-calcium phosphate
- Blood products
- Compound feed containing a/m materials



**Derogation for compound feed containing these feed materials!**

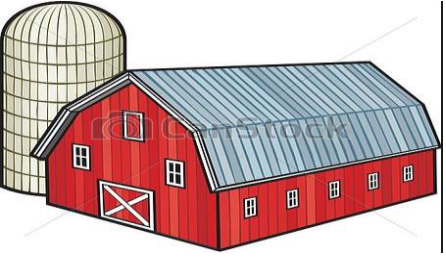
**Provided that on-farm measure are implemented to prevent such compound feed Being fed to an animal species for which is not intended.**

**Competent Authority may authorise!!!**

Manufacturing feed for ruminants  
Storage feed

Storage compound feed for non-ruminant

Manufacturing feed for non-ruminants



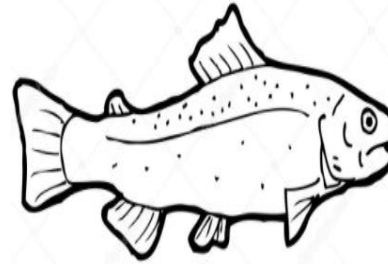
**Aa**

# STOCK FARMING



## Not allowed use and storage on farm:

- Processed animal proteins derived from non-ruminant
- Fish meal
- Processed insect proteins
- 2,3-calcium phosphate
- Blood products
- Compound feed containing a/m materials



**Derogation for compound feed containing these feed materials.  
 Provided that on-farm measure are implemented to prevent such compound feed  
 Being fed to an animal species for which is not intended.**

**Competent Authority may authorise!!!**

**Manufacturing feed for poultry  
 Storage feed**

**Storage compound feed for fish**

**Manufacturing feed for fish**

## Labelling of feed materials

© Oshibō work na buty



***fishmeal — shall not be used in feed  
for ruminants except unweaned  
ruminants***

***di-/tricalcium phosphate of animal  
origin — shall not be used in feed  
for ruminants***

***non-ruminant blood products —  
shall not be used in feed for  
ruminants***

***non-ruminant processed animal  
protein — shall not be used in feed  
for farmed animals except  
aquaculture and fur animals***

***processed insect protein — shall not  
be used in feed for farmed animals  
except aquaculture and fur animals.***

## Labelling of compound feed

contains fishmeal — shall not be fed to ruminants' - on the label of compound feed containing fishmeal intended for non-ruminant farmed animals other than fur animals'

contains dicalcium/tricalcium phosphate of animal origin — shall not be fed to ruminants'

contains non-ruminant blood products — shall not be fed to ruminants'

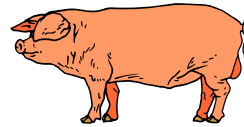
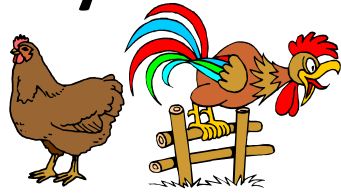
contains non-ruminant processed animal protein — shall not be fed to farmed animals except aquaculture and fur animals'.

© Ondřej Vorek na buty

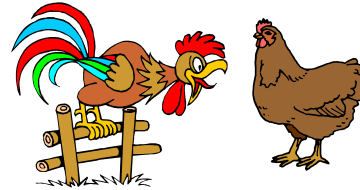
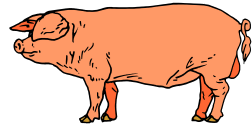


# Lifting feed ban provisions for non-ruminants (pigs, poultry)

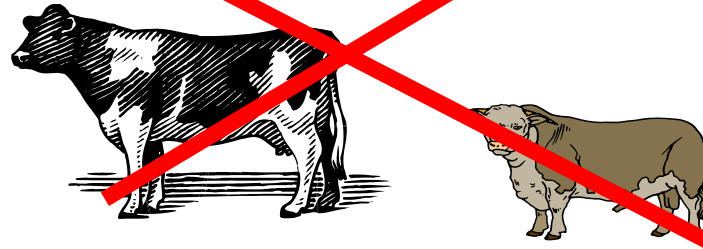
Allow poultry PAP for pig feeding



Pig PAP for poultry feeding



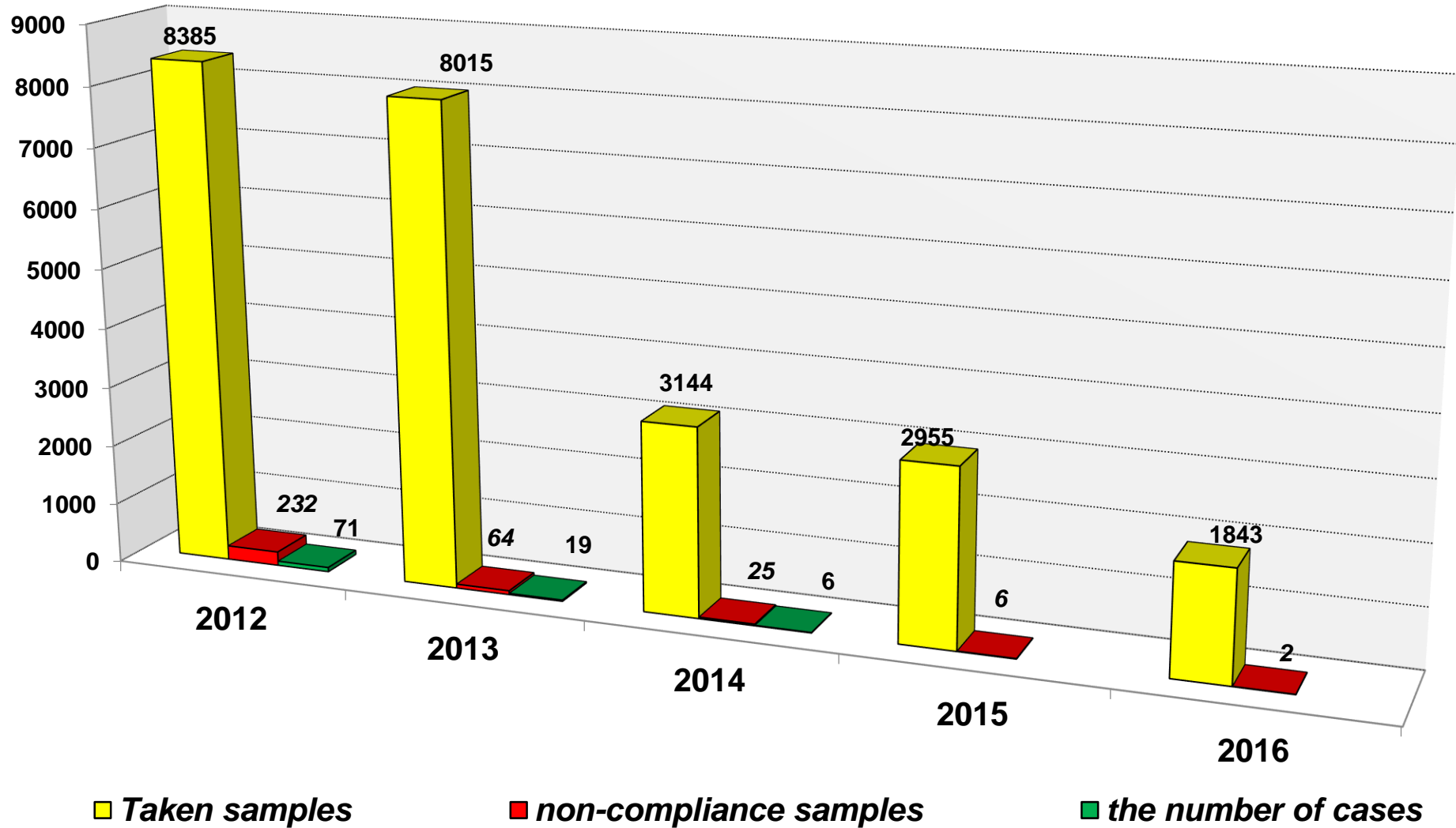
Ruminant PAP



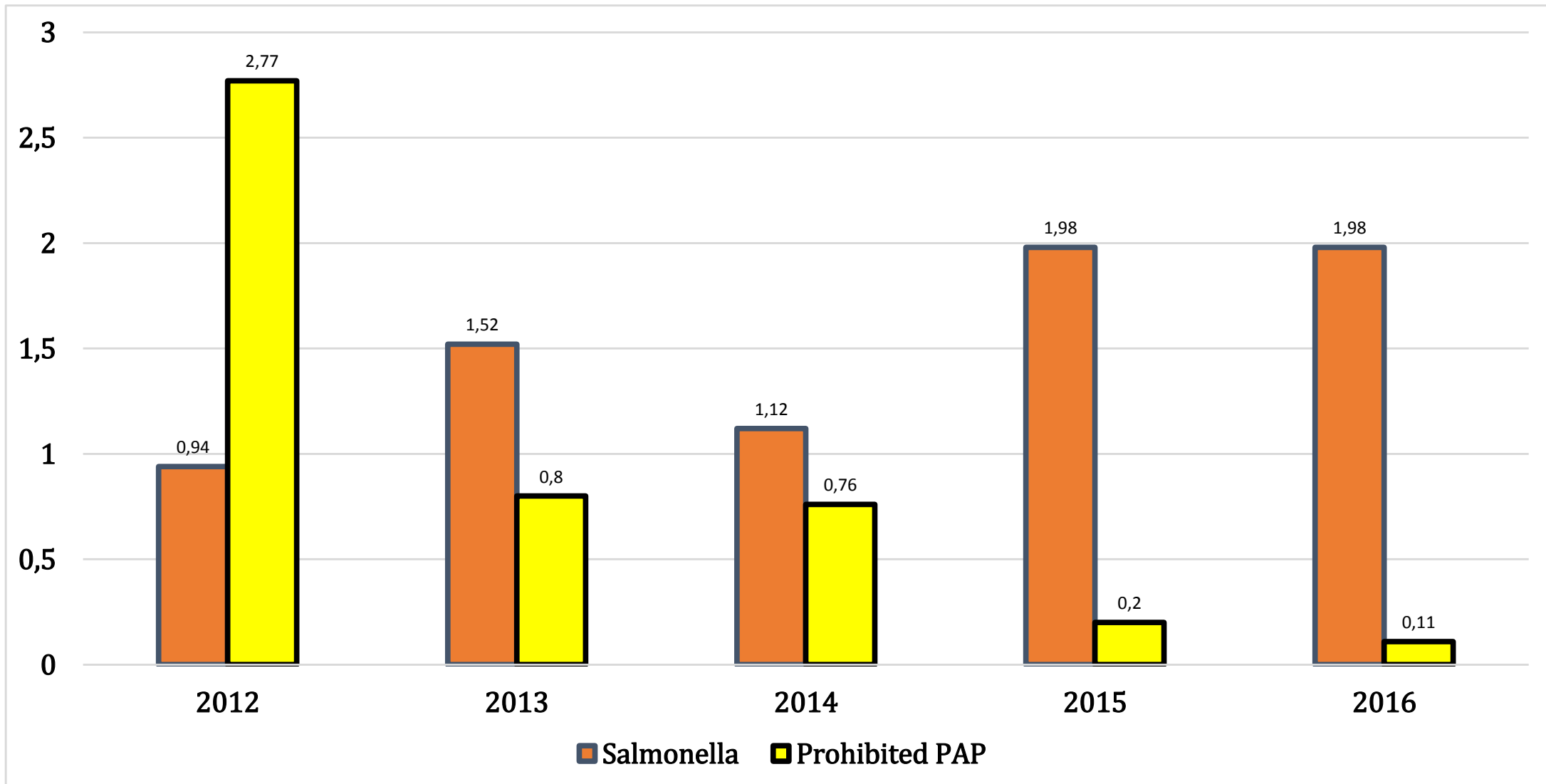
Feedban for  
farmed animals



# The monitoring results - PAP



## The ratio of the percentage non-compliance to all taken samples (%)



# OD 27 LIPCA 2017 POLAND WITH NEGLIGIBLE BSE RISK STATUS SINCE 27.07.2017

## List of Bovine Spongiform Encephalopathy Risk Status of Member Countries

According to [Resolution No. 26](#) (85th General Session of World Assembly, May 2017)

### + Negligible BSE risk

Member Countries recognised as having a negligible BSE risk in accordance with Chapter 11.4. of the [Terrestrial Code](#) :

Argentina	Hungary	Panama
Australia	Iceland	Paraguay
Austria	India	Peru
Belgium	Israel	Poland
Brazil	Italy	Portugal
Bulgaria	Japan	Romania
Chile	Korea (Rep. of)	Singapore
Colombia	Latvia	Slovakia
Costa Rica	Liechtenstein	Slovenia
Croatia	Lithuania	Spain
Cyprus	Luxembourg	Sweden
Czech Republic	Malta	Switzerland
Denmark	Mexico	The Netherlands
Estonia	Namibia	United States of America
Finland	New Zealand	Uruguay
Germany	Norway	

## Controlled BSE risk

Canada	France	Ireland
Chinese Taipei	Greece	Nicaragua



WORLD ORGANISATION FOR ANIMAL HEALTH  
*Protecting animals. preserving our future*

## CERTIFICATE

### Bovine spongiform encephalopathy risk status of Poland

This is to certify that, following a recommendation of the OIE Scientific Commission for Animal Diseases, the World Assembly of Delegates of the OIE approved on 23 May 2017 the proposal that Poland be recognised by the OIE as a country having a negligible risk for bovine spongiform encephalopathy (BSE) in accordance with the OIE *Terrestrial Animal Health Code* (2016).

This recognition is based on the documentation submitted to the OIE by the Delegate of Poland. The OIE Delegate of Poland has the obligation to notify the OIE immediately if there is any change in the epidemiological situation relating to BSE in Poland and to confirm annually that the epidemiological situation has remained unchanged, according to the requirements of the OIE *Terrestrial Animal Health Code*.



Paris, 25 May 2017

  
Dr Botlhe Michael Modisane  
President

  
Dr Monique Eloit  
Director General



**THANK YOU FOR YOUR  
ATTENTION!**