

# Swine industry of the Republic of Belarus

Vilnius, Lithuania, 30 May – 1 June 2012

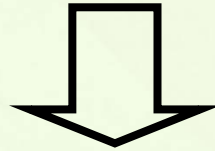


# Swine industry of the Republic of Belarus

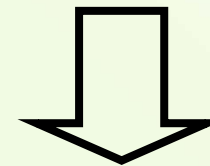
- 96% of farms are governmental property
- All the governmental farms are attached to the regional meat factories that receive the production at the prices set by the Ministry of Agriculture and Food

# Swine industry of the Republic of Belarus

Swine farms



Regional meat factories



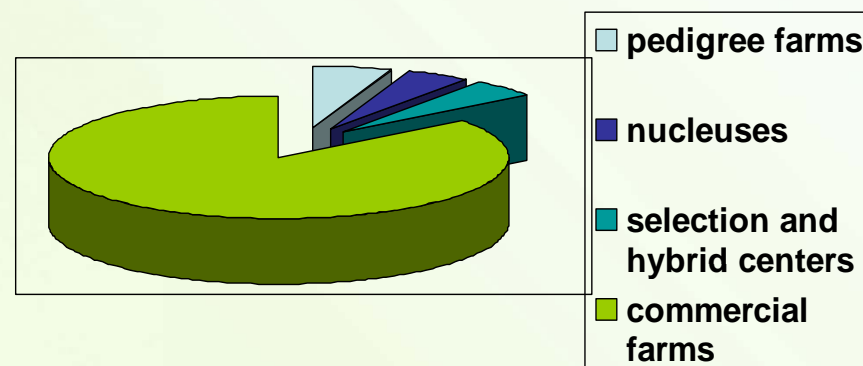
Internal market of the Republic of Belarus

Export (Russian Federation)

# Swine industry of the Republic of Belarus

The structure of the enterprises by function

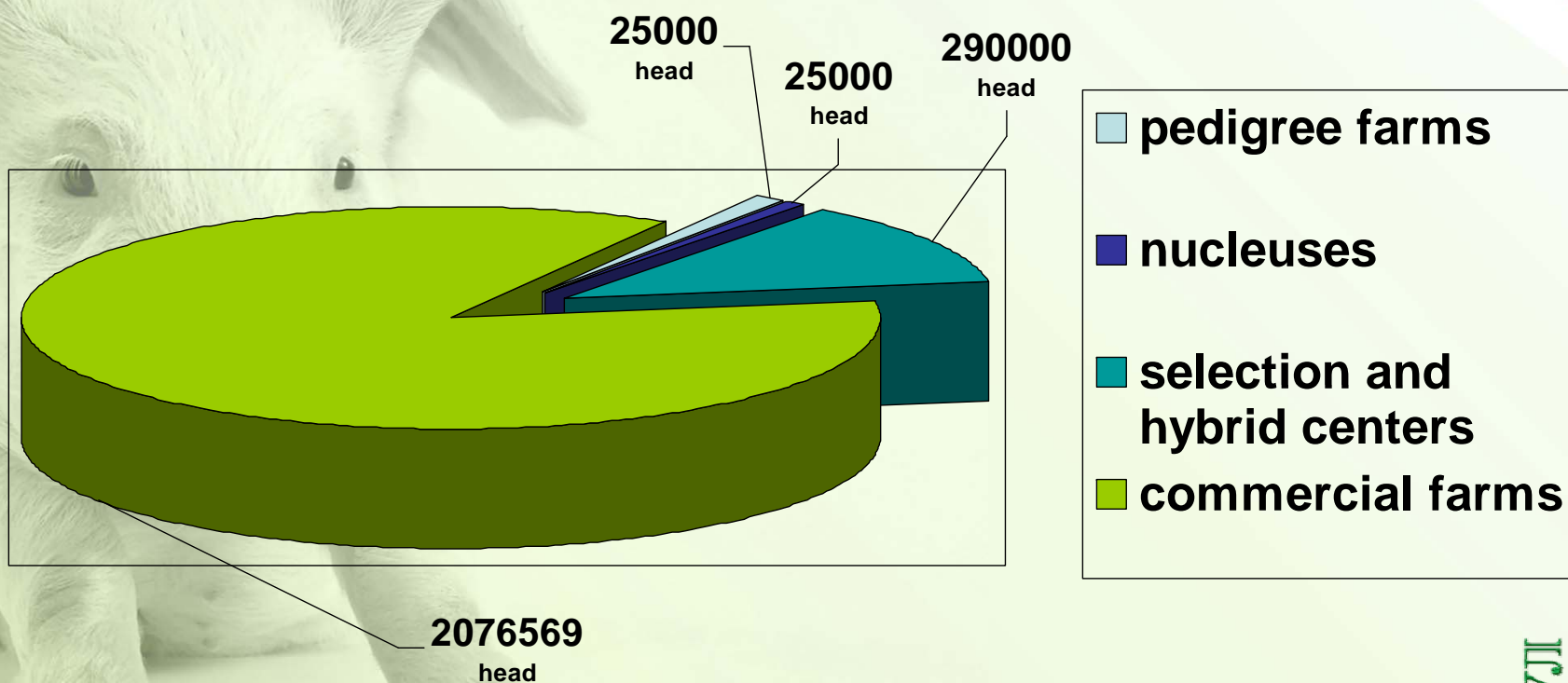
- 6 pedigree farms
- 5 nucleuses
- 5 selection and hybrid centers
- 93 commercial farms



Total of 107 industrial enterprises are under statutory reporting of the Ministry of Agriculture and Food of the Republic of Belarus

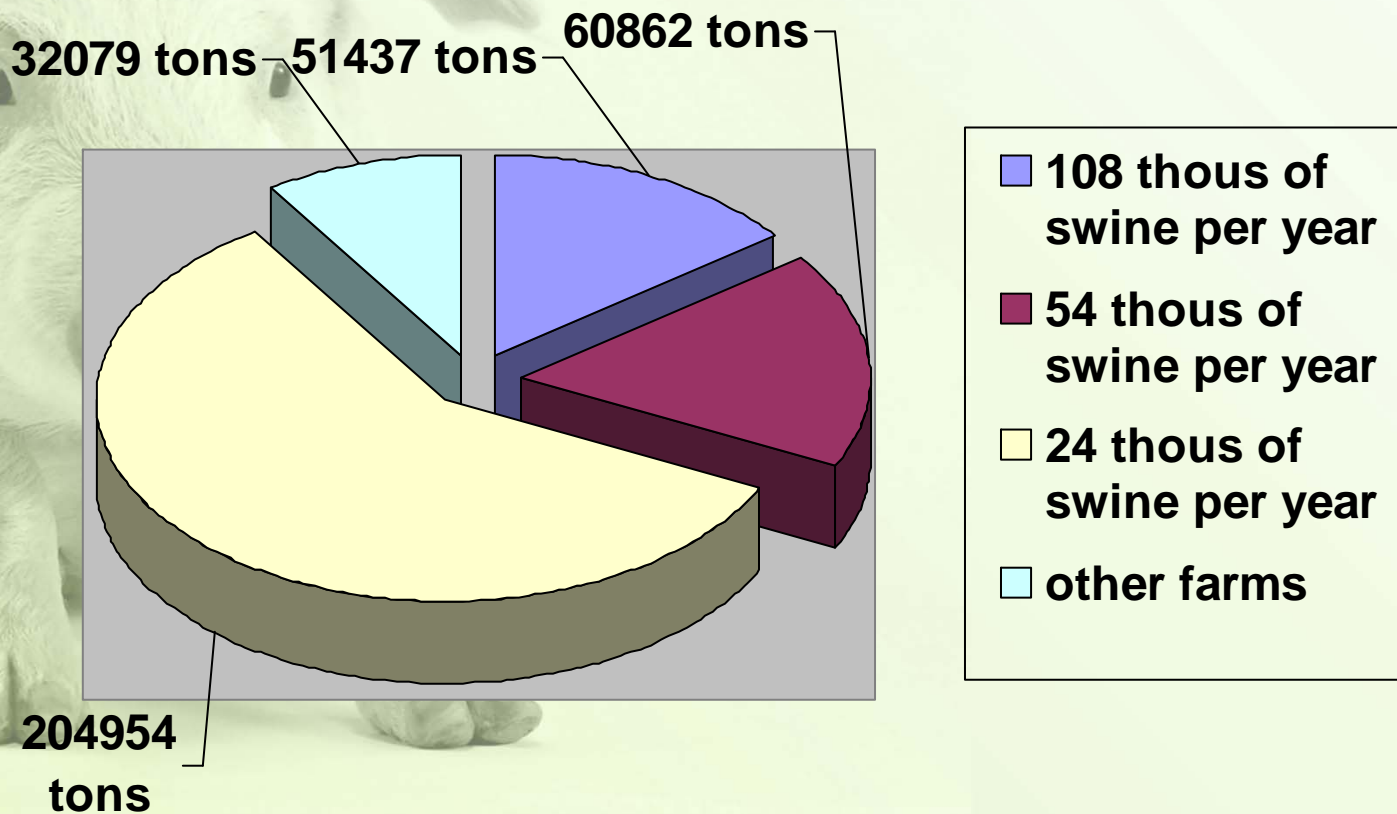
# Swine industry of the Republic of Belarus

The structure of the enterprises by function



# Swine industry of the Republic of Belarus

The share of the enterprises of different capacity  
in the gross output



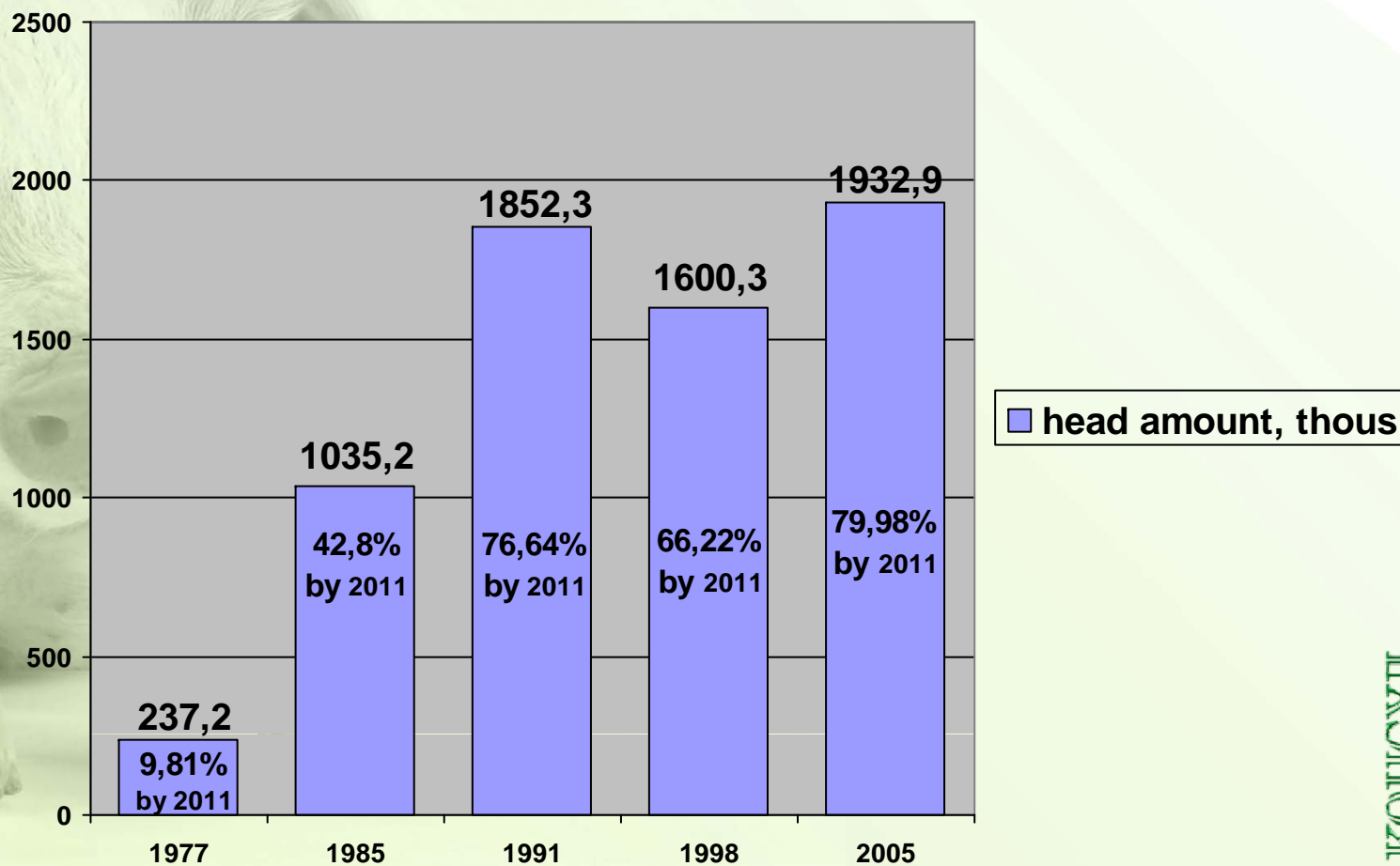
# Swine industry of the Republic of Belarus

All the enterprises are of closed-end type with  
the full production cycle



# Swine industry of the Republic of Belarus

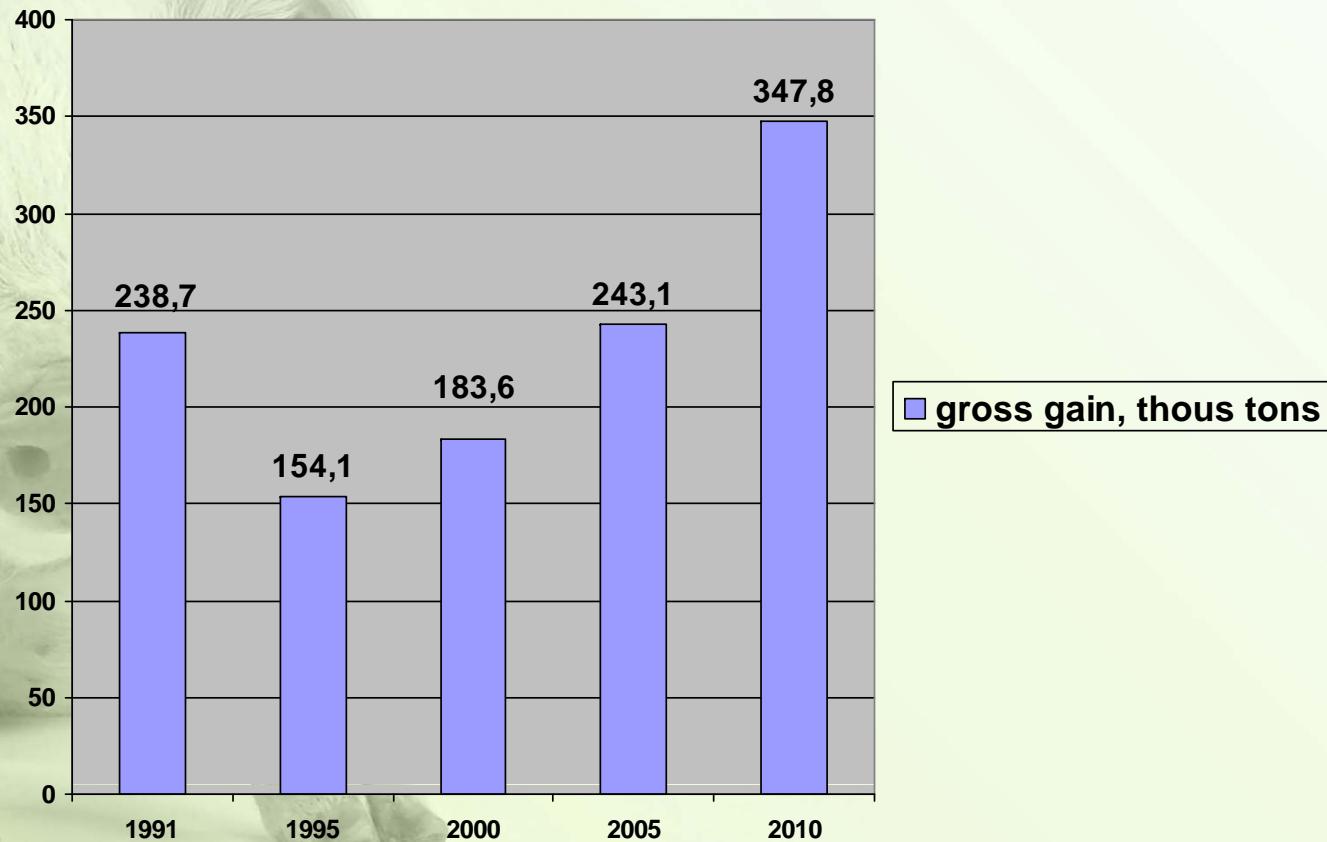
Development of the swine industry





# Swine industry of the Republic of Belarus

Pork production in the modern history of the Republic of Belarus



# Swine industry of the Republic of Belarus

The results of work in 2011:

- In 2011 the enterprises of the Republic of Belarus produced a total of 441,9 thousand tons of pork\*
- Self-cost of 1 kg of pork – 7312 rubles
- Mean selling price made up 8271 rubles per live weight kilo
- Level of profitability in pig production made up - 13,1%, profitability of sales – 10,5%, on best farms – 29% up to 60%

# Swine industry of the Republic of Belarus

- Feed intake per 1 kg of gain in the Republic in 2001-4,52 feed units, best farms – 2,8-2,9 feed units
- Average daily gain of growers and finishers – 530 g
- Average price for 1 kg of compound feed for the growing period – 2700 rubles\*\*

\* Inclusive of small commercial farms, agricultural production cooperative s

\*\* Mean in the Republic

# Swine industry of the Republic of Belarus

Major effectiveness criterion:

Selling of gain per mean livestock since the beginning of the year\*

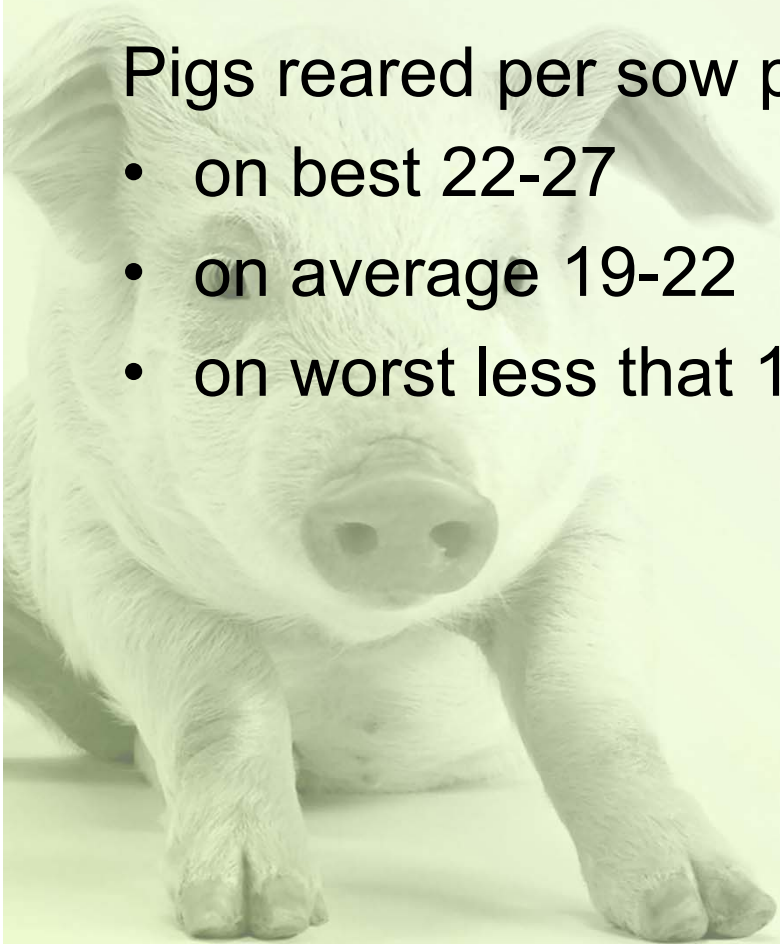
- on best farms – 277,5 kg
- on worst farms – from 86 kg

\* Report data of the Ministry of Agriculture and Food for 2011

# Swine industry of the Republic of Belarus

Pigs reared per sow per year:

- on best 22-27
- on average 19-22
- on worst less that 16



# Swine industry of the Republic of Belarus

Livability indices as for groups of animals

- in group 0-2 (0-35 days) elimination varies in the range of 7 – 10%
- in group 2-4 (35-105 days) elimination varies in the range of 2 – 23%
- during finishing period (80-200) 1,5 - 10% (17%)

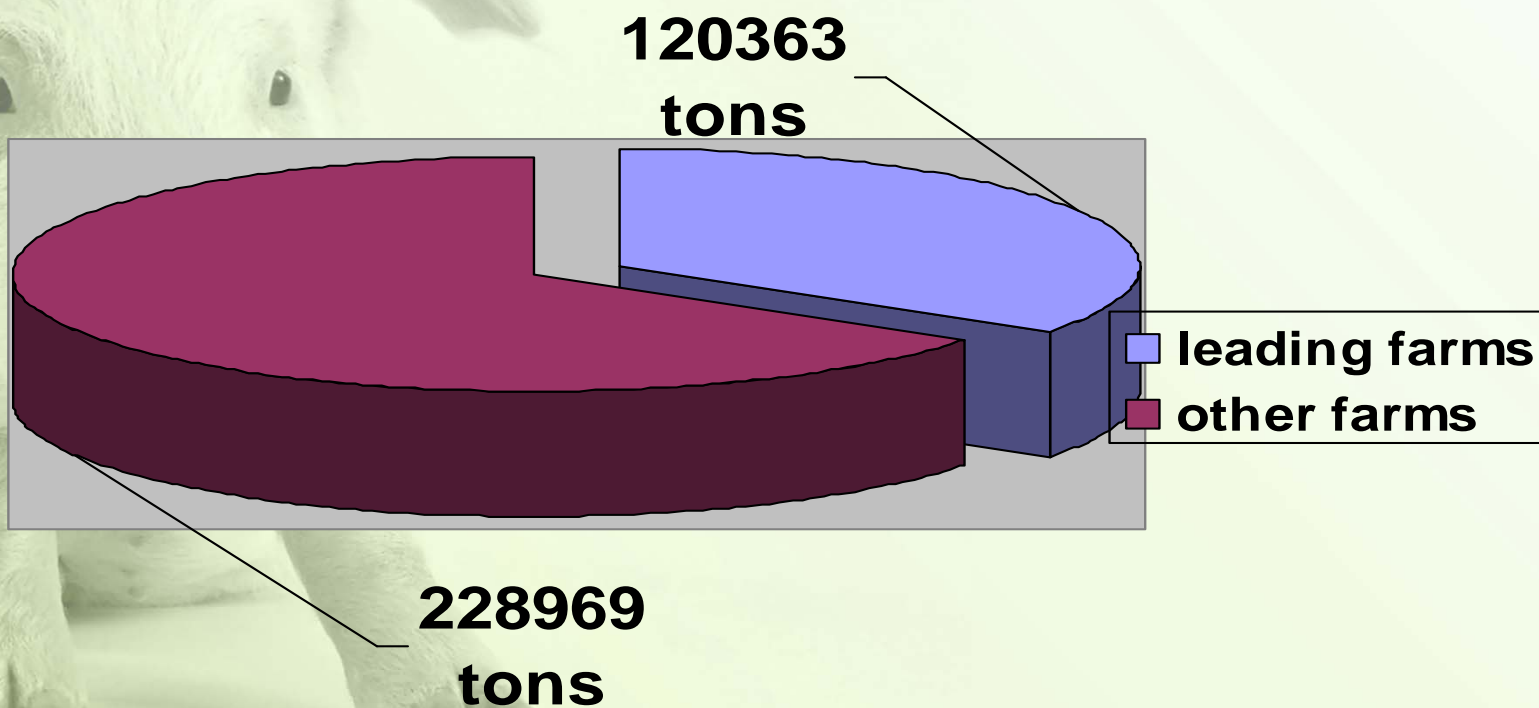
# Swine industry of the Republic of Belarus

Nonproduction elimination for the whole rearing period on farms

- best – 12 – 15%
- average – 15 – 20%
- worst – 25 – 45%

# Swine industry of the Republic of Belarus

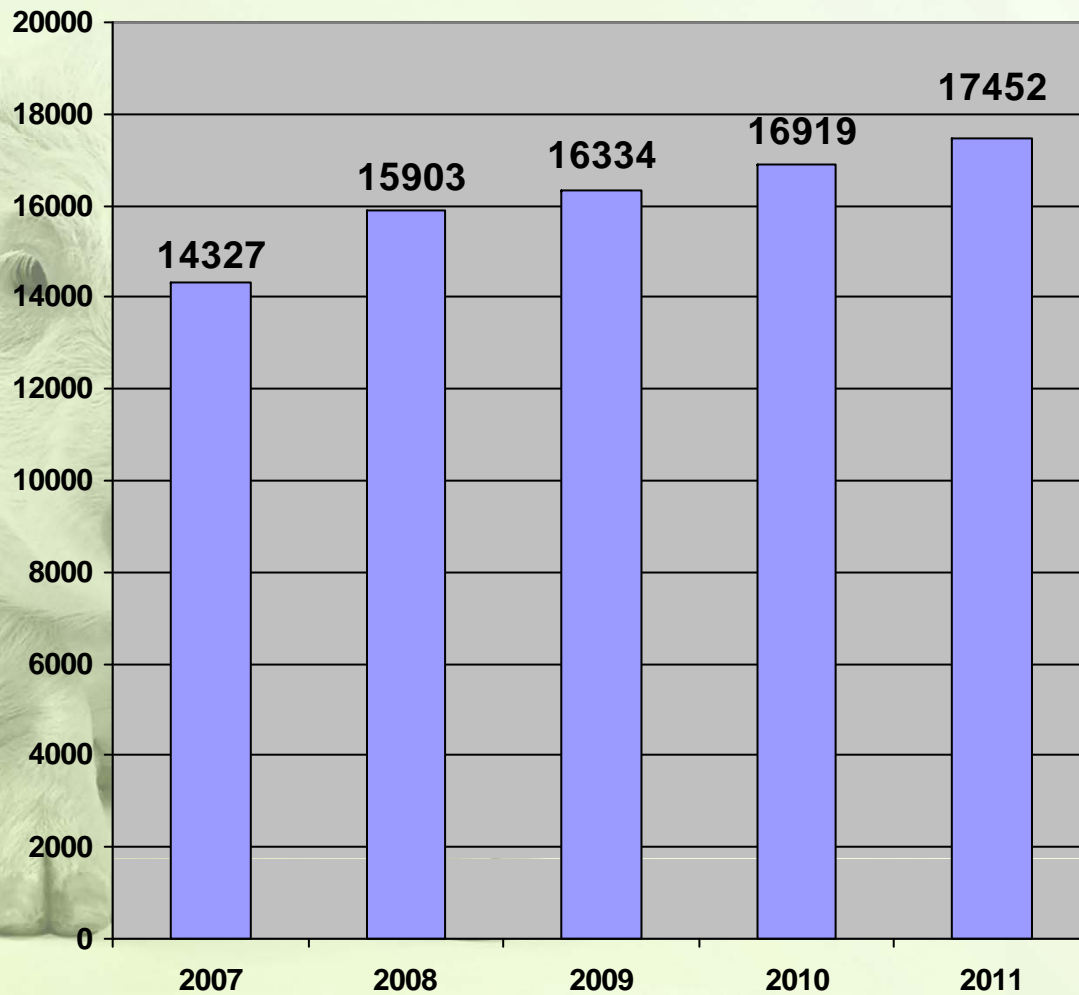
The share of the enterprises  
in the gross output







## OJSC Belovezhskiy, Kamenets region



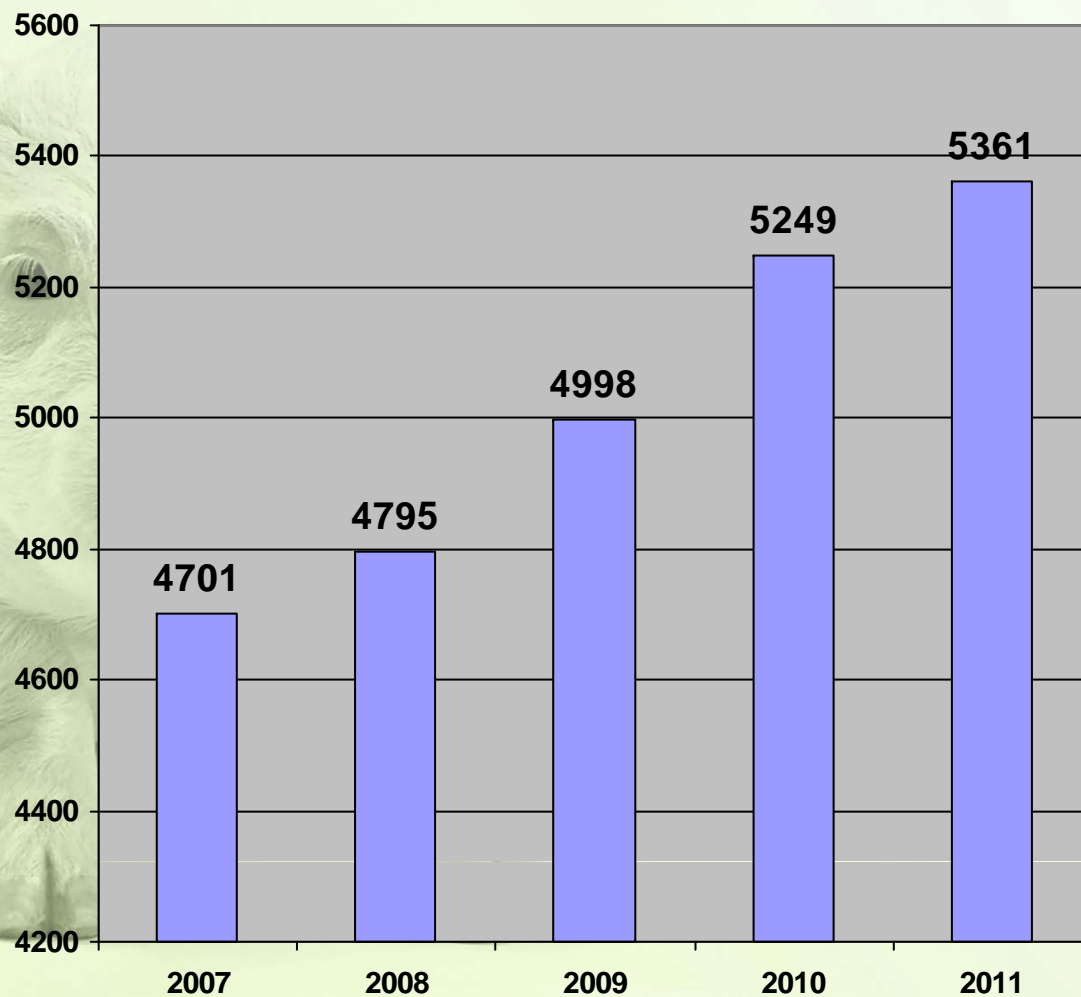
Real livestock availability –  
90203 head

■ achieved gain, tons



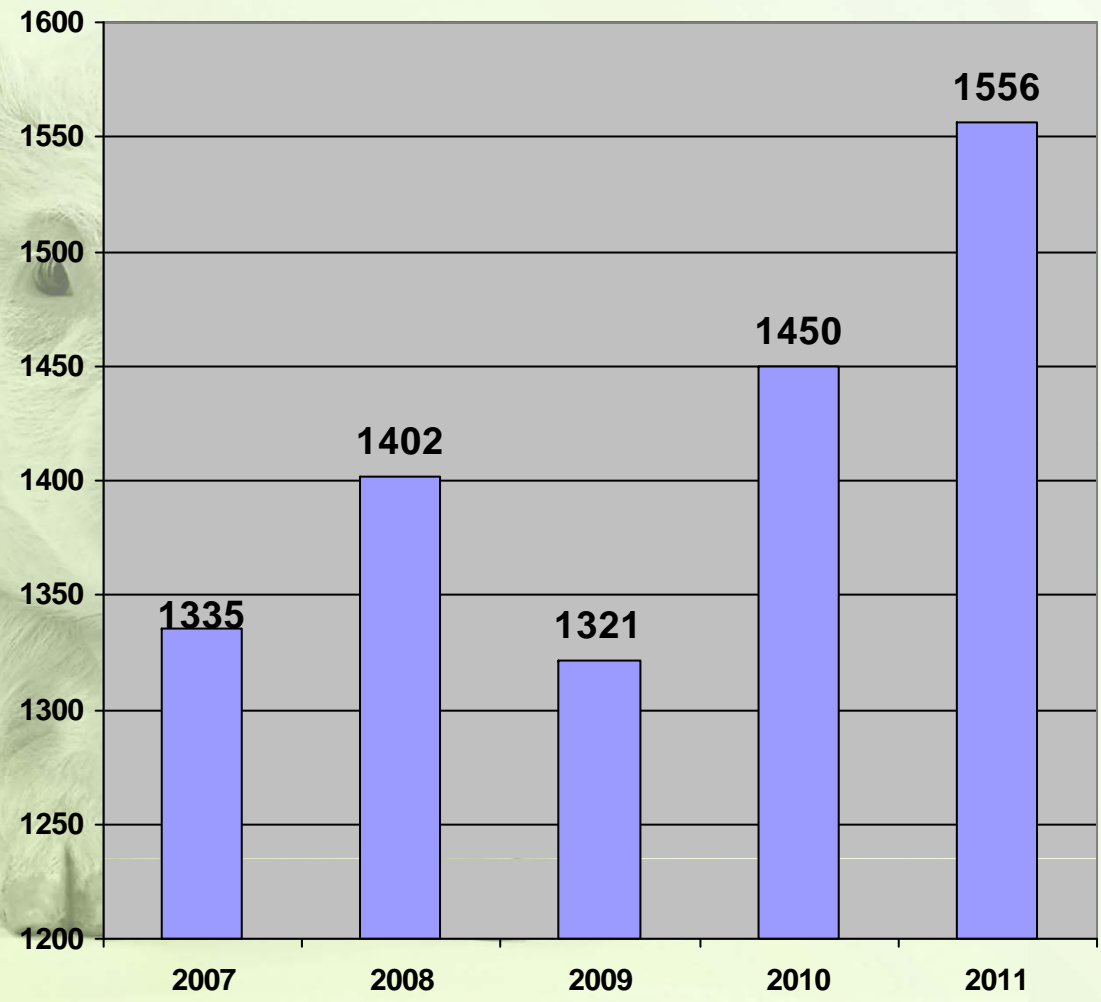


# OJSC Agroplant Voskhod, Mogilev region



Real livestock availability –  
26719 head

■ achieved gain, tons

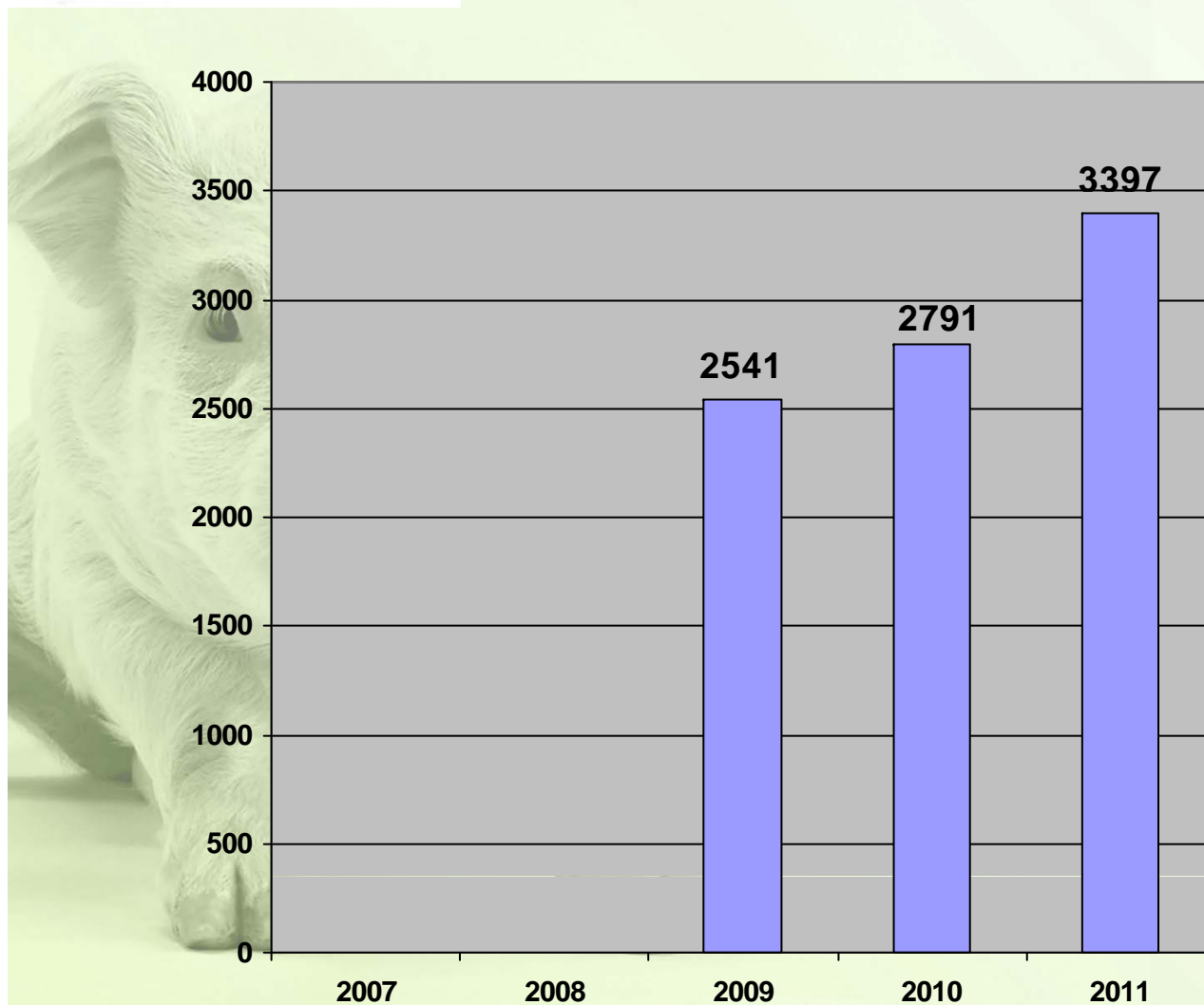


Real livestock availability –  
8031 head

■ achieved gain, tons



# OJSC Aleksandriyskoe, Shklov region

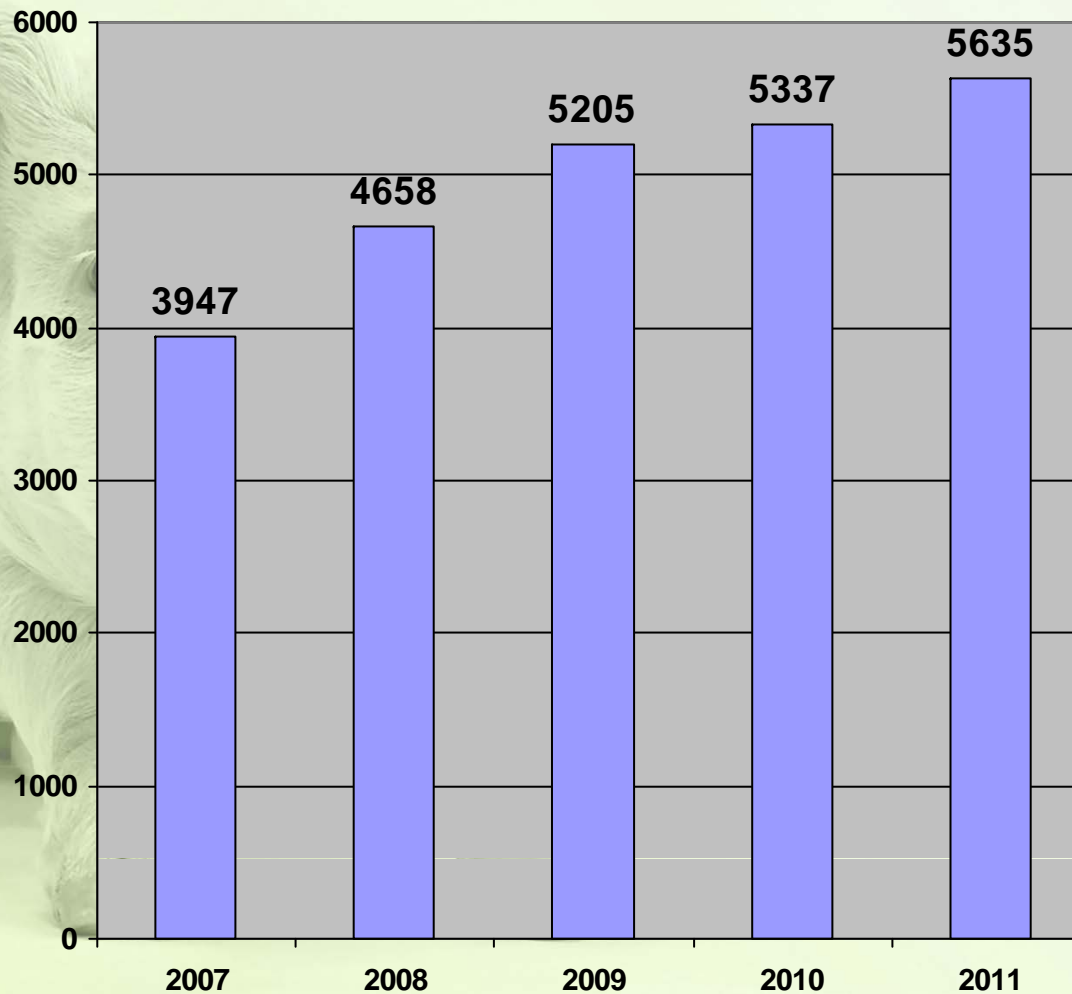


Real livestock availability –  
21174 head

■ achieved gain, tons



# Production private unitary enterprise Rosskiy Feed factory, Volkovysk region



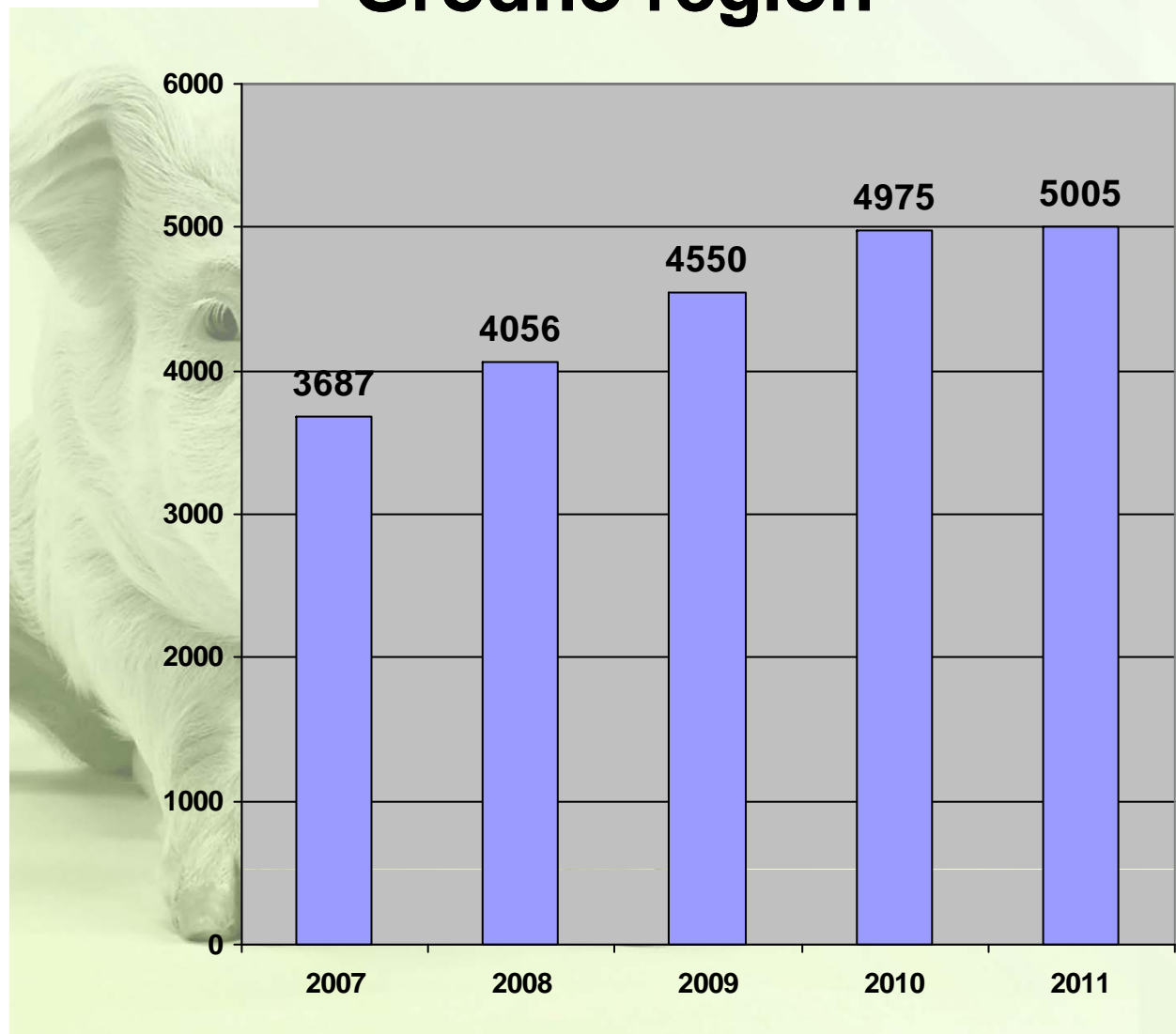
Real livestock availability –  
31214 head

■ achieved gain, tons





# Agricultural production cooperative Obukhovo, Grodno region

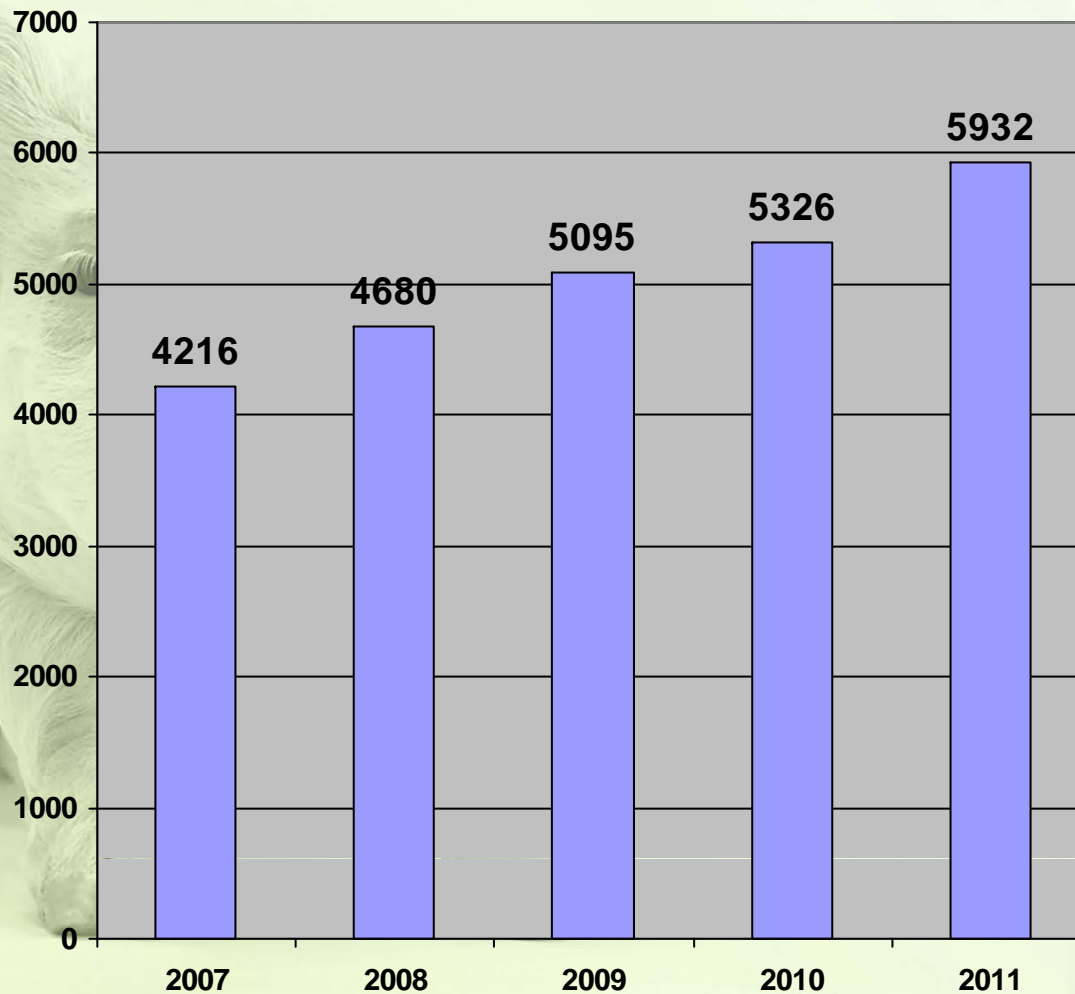


Real livestock availability –  
29844 head

■ achieved gain, tons



# Agricultural production cooperative Ortyabr-Grodno, Grodno region

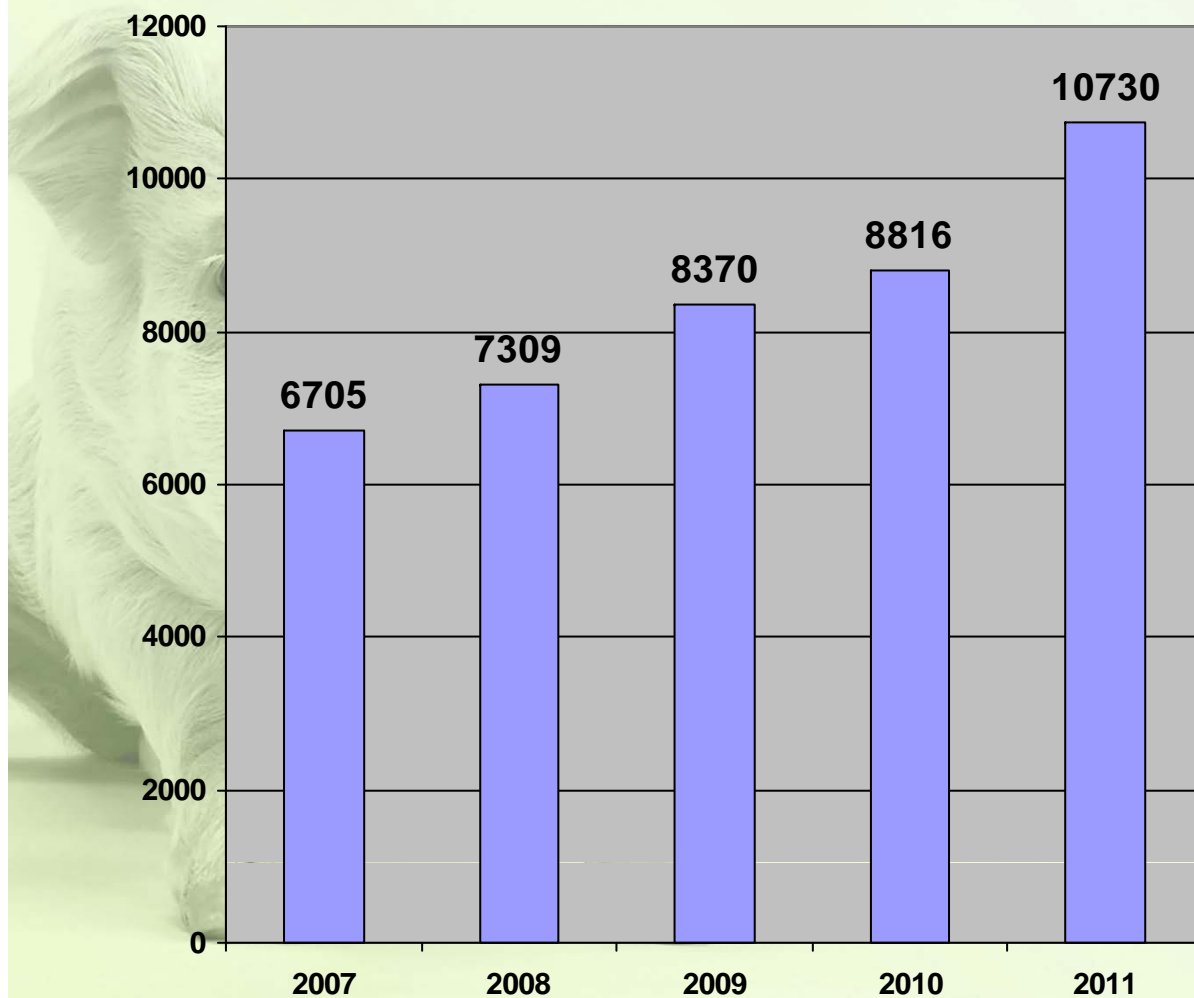


Real livestock availability –  
27440 head

■ achieved gain, tons

ОРО БАСНАЛЫК

# Selection and hybrid center Vasilishki, Shchuchin region



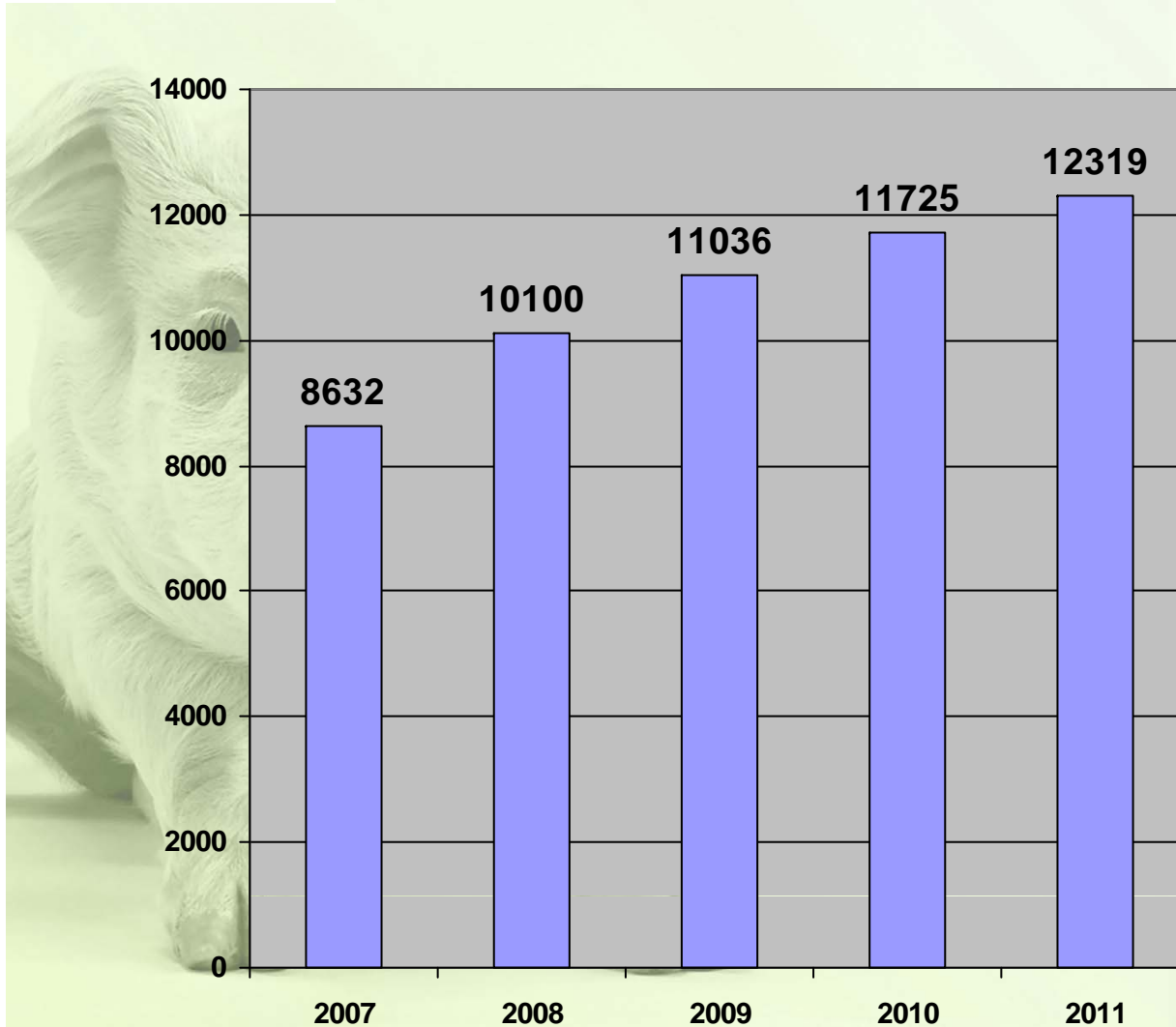
Real livestock availability – 71032 head

■ achieved gain, tons





# OJSC Baranovichi Cereal products plant, Pork production complex Vostochnoe, Baranovichi region



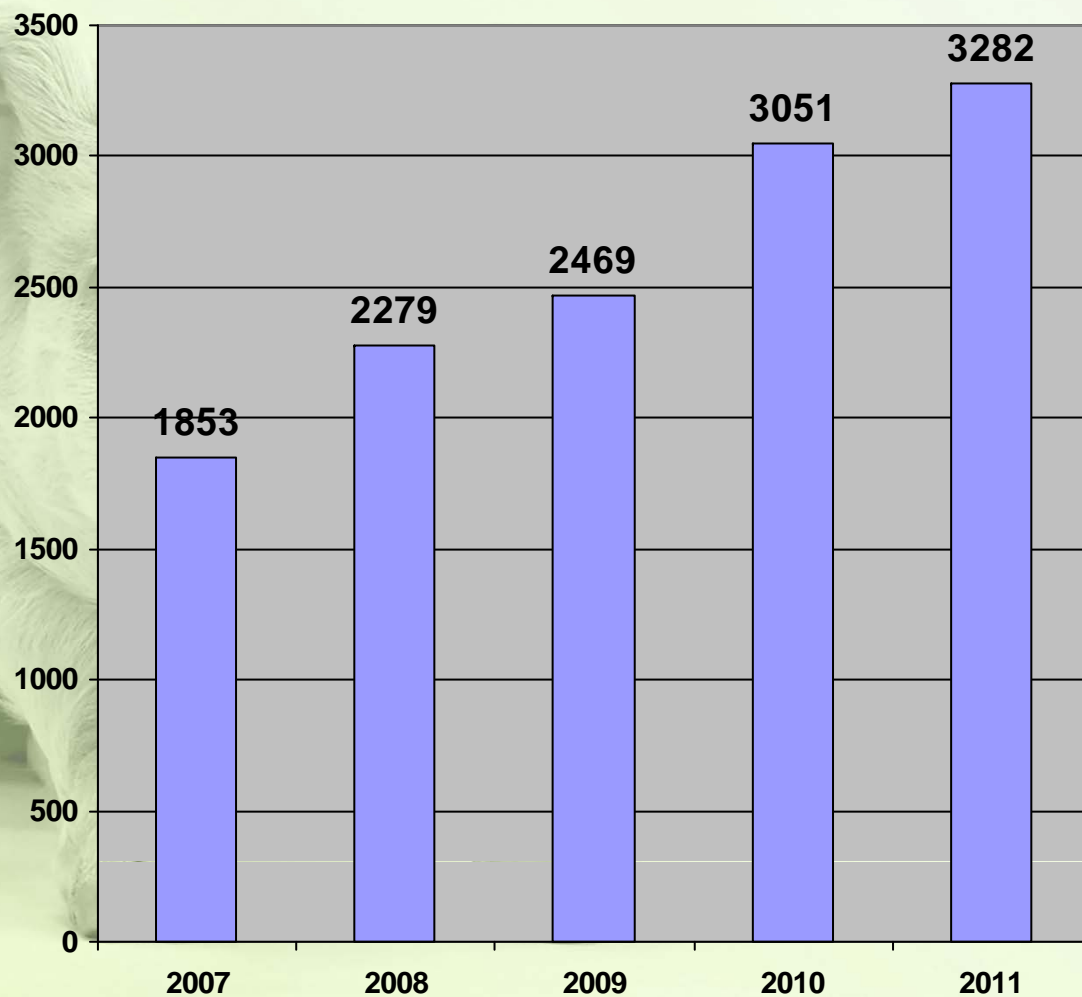
Real livestock availability –  
67635 head

achieved gain, tons





# OJSC Slutsk meat factory

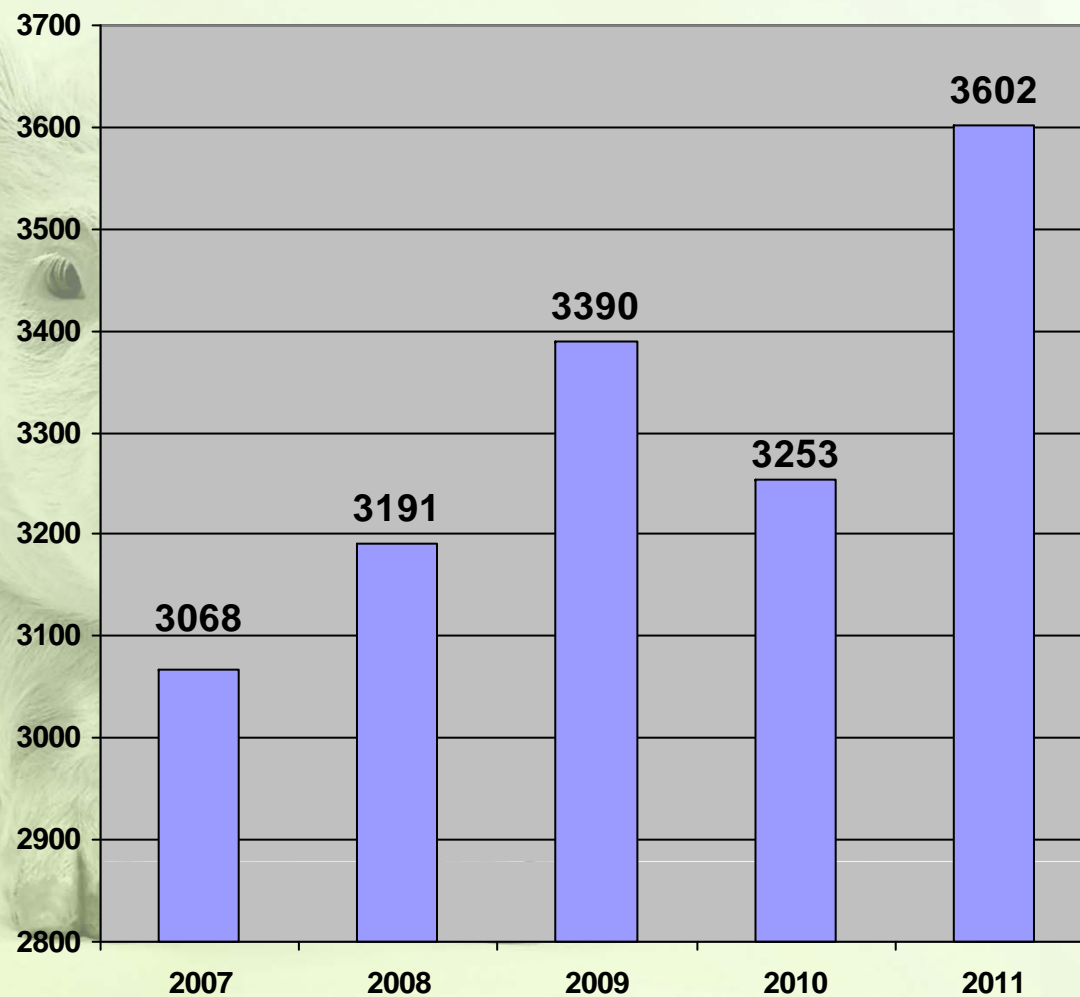


Real livestock availability –  
20600 head

■ achieved gain, tons



## OJSC Zhuravlinoe, Pruzhany region



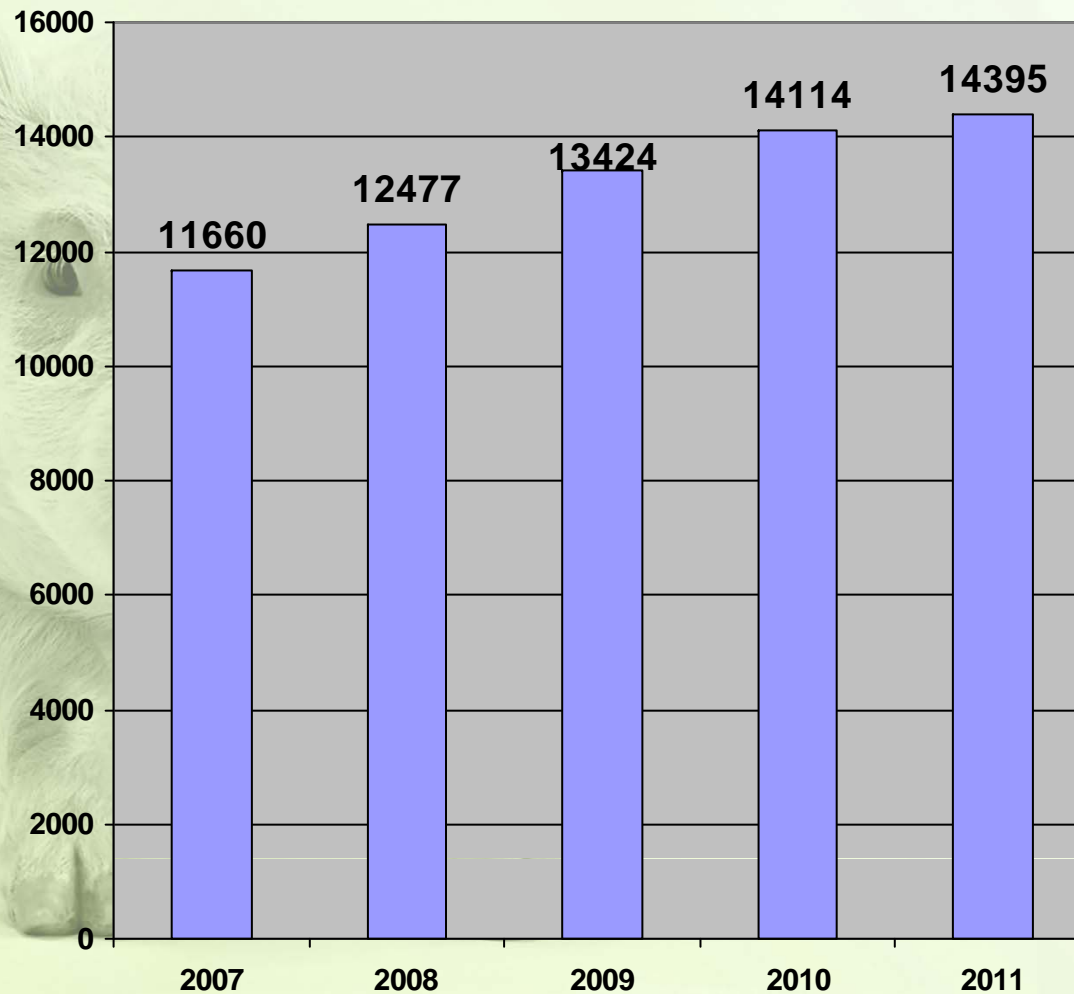
Real livestock availability –  
18453 head

■ achieved gain, tons





# OJSC Combine state farm Sozh, Gomel region



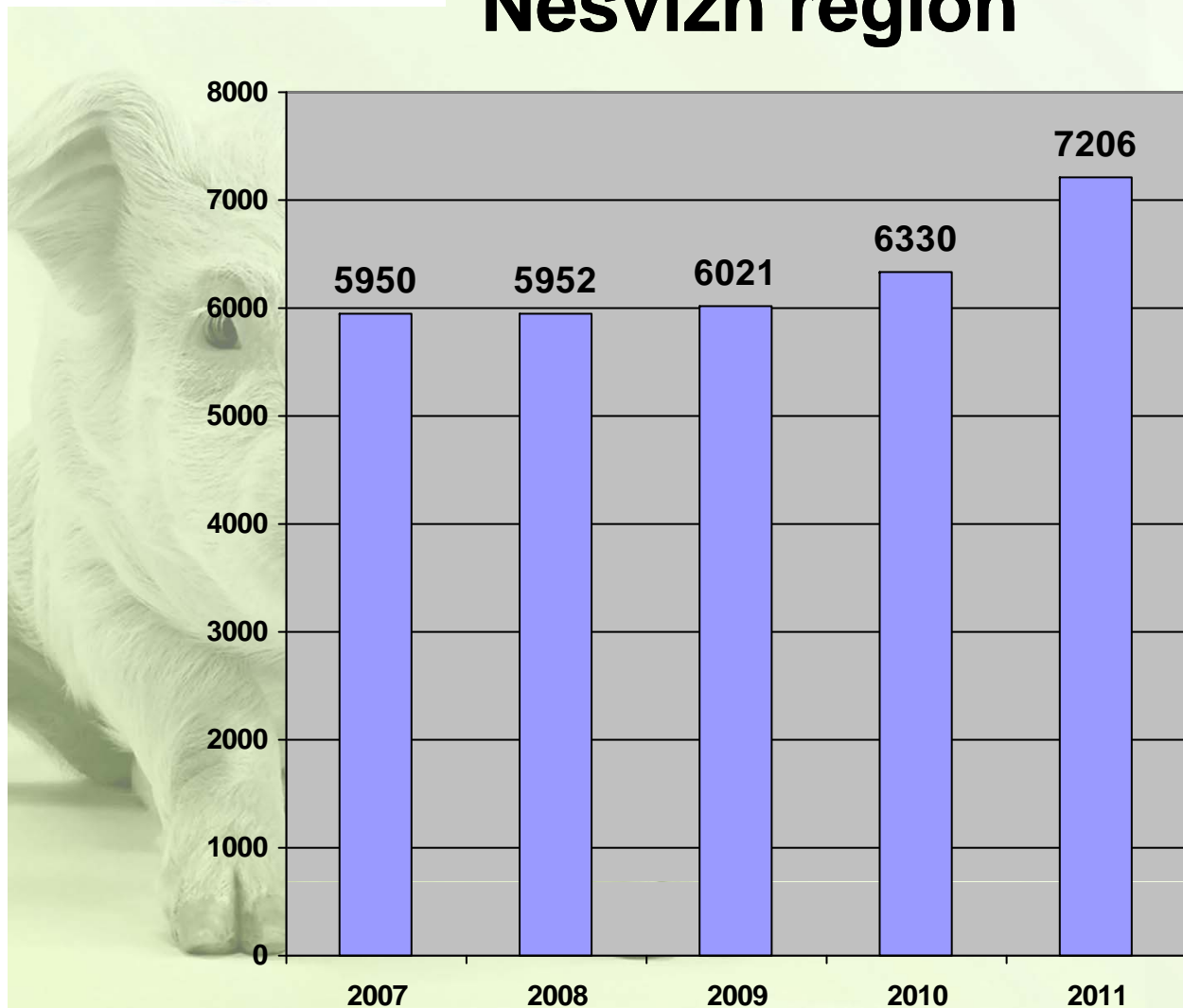
Real livestock availability –  
90250 head

■ achieved gain, tons





# Agricultural production cooperative Agricultural plant Snow, Nesvizh region



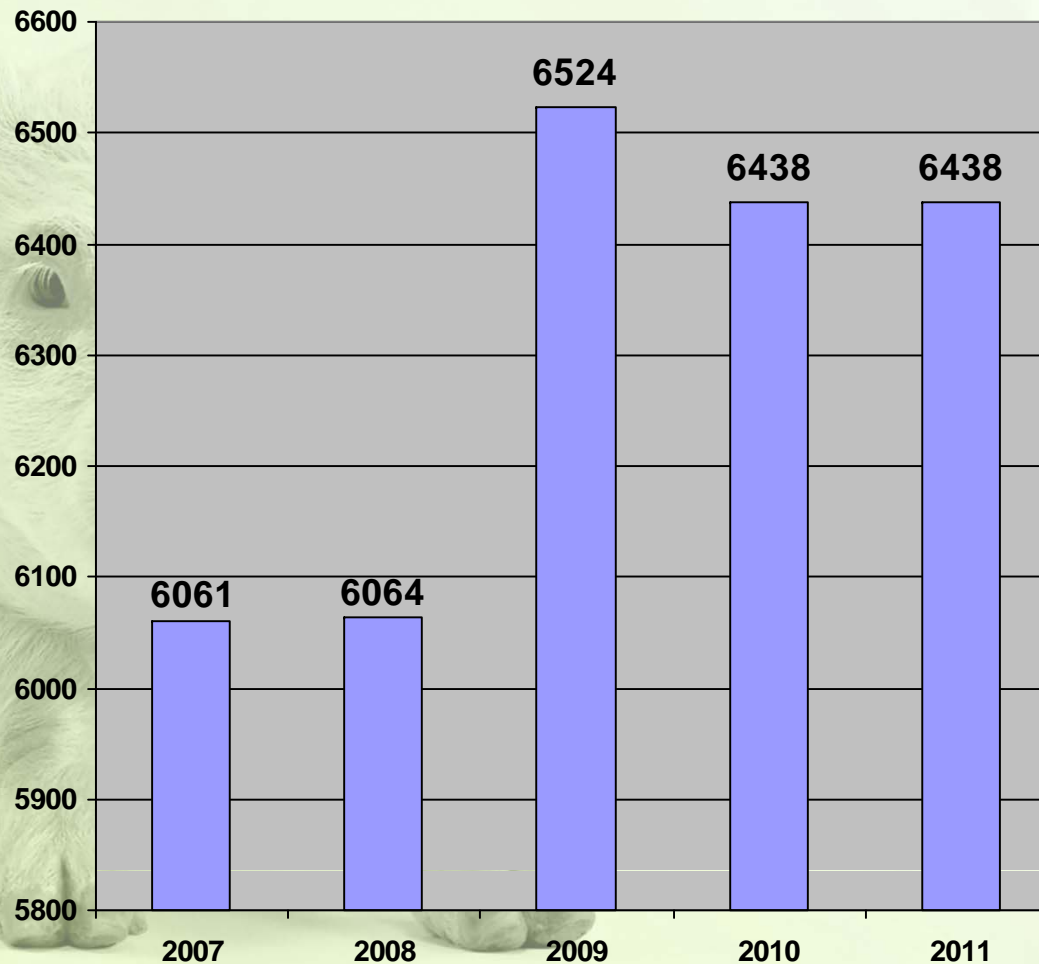
Real livestock availability –  
32400 head

■ achieved gain, tons





# Municipal agricultural unitary enterprise Zarya, Mozyr region

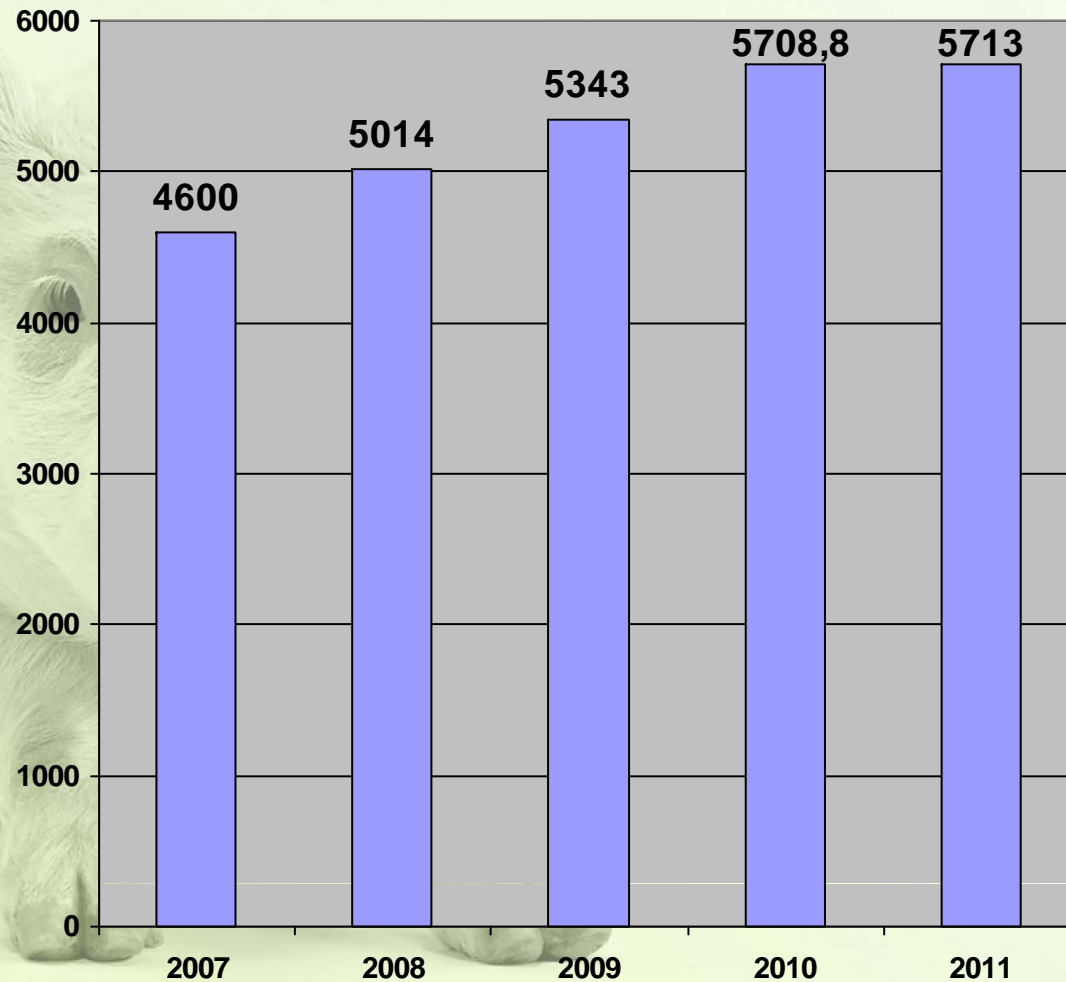


Real livestock availability – 39765 head

■ achieved gain, tons



# Subsiriary Soviet Belarus, Rechitsa region

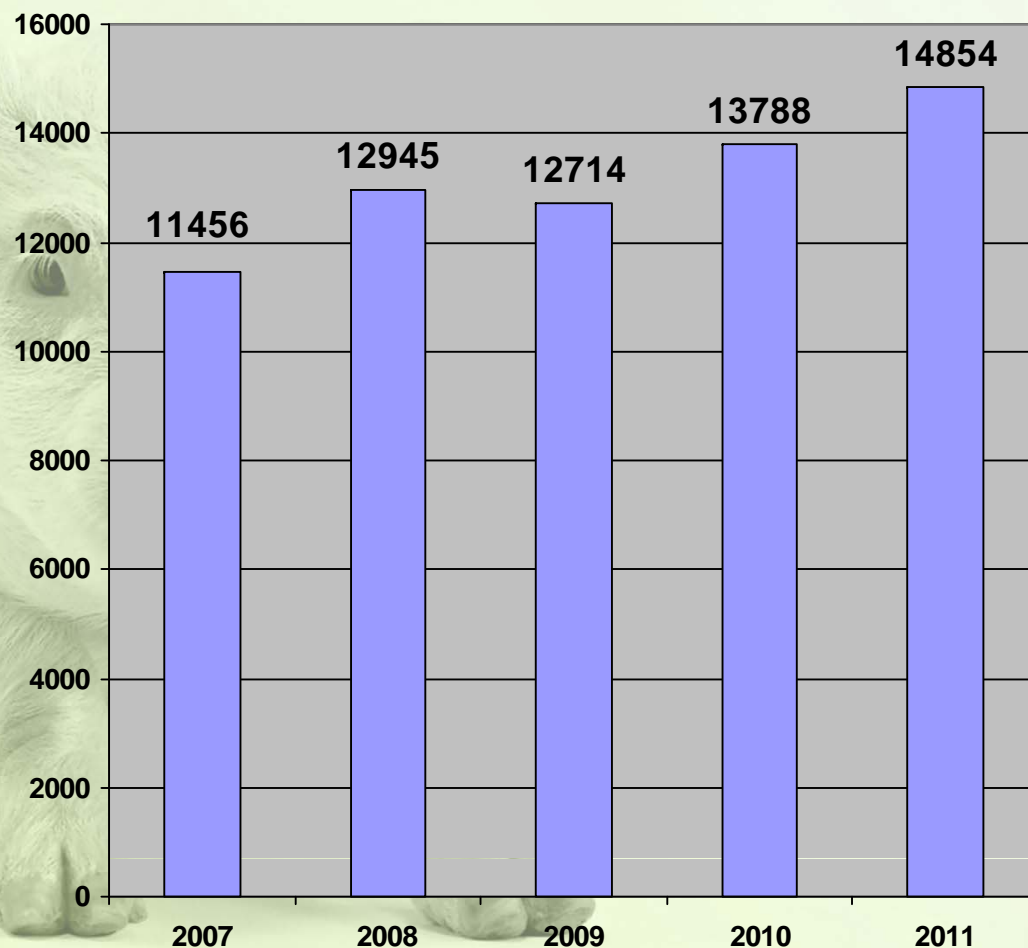


Real livestock availability –  
31012 head

■ achieved gain, tons



# State enterprise Selection and hybrid center Zapadniy, Brest region



Real livestock availability –  
89887 head

■ achieved gain, tons

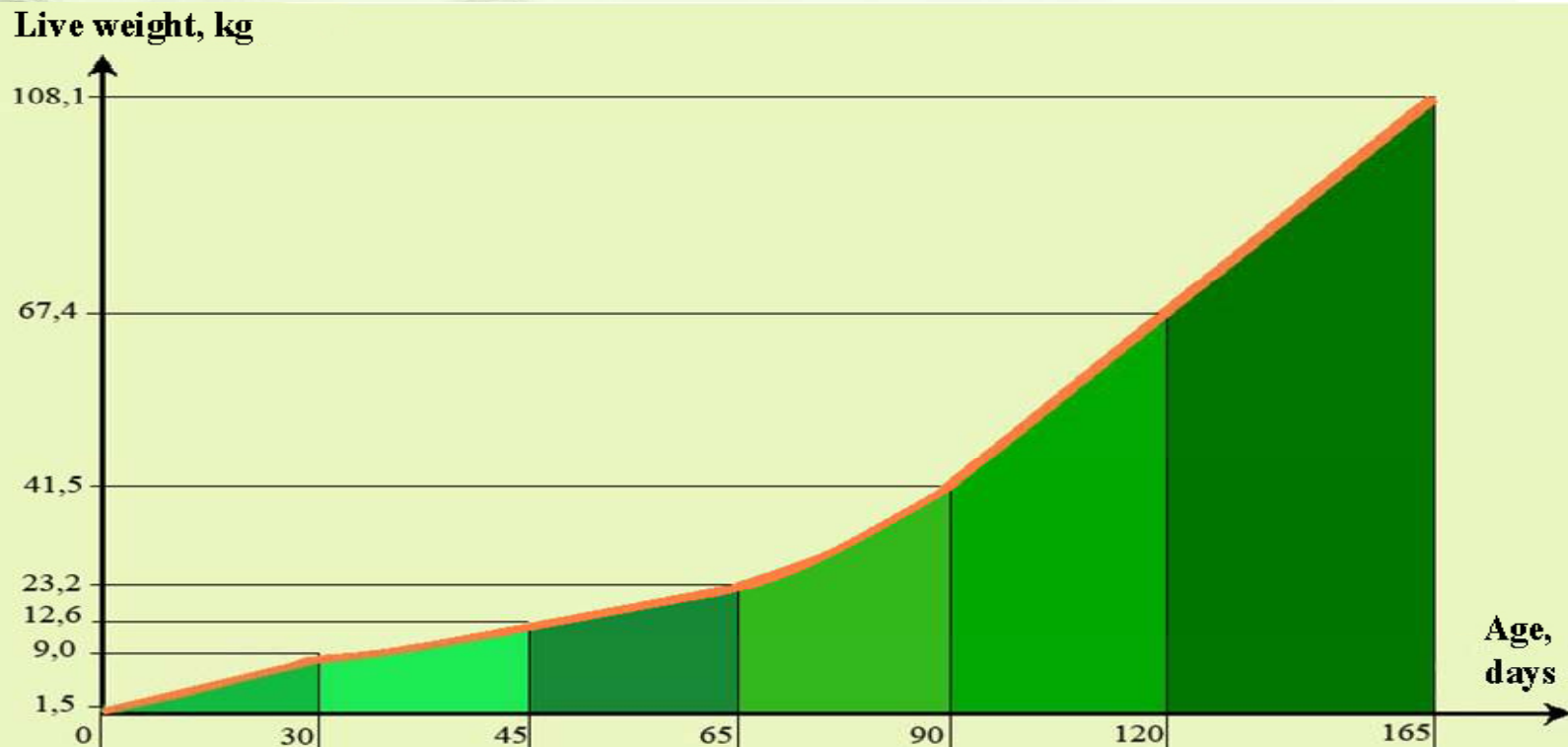


# Swine industry of the Republic of Belarus

## Pedigree work

- Mainly three-breed rotation cross with the use of purebred boars:
- Landrace, Large White and Duroc, less frequently Pietrain
- or four-breed with the use of DxG, DxP twobreed

# Swine industry of the Republic of Belarus



CK-11-1	CK-11-2	CK-16	CK-21	CK-26	CK-31
1,5	5,5	14,0	38,0	65,0	145,0

Feed consumption over a period, kg

# Nutrient indices of major compound feed formulations

Nutrient index	Compound feed formulations							
	CK-11-1	CK-11-2	CK-16	CK-21	CK-26	CK-31	CK-10	CK-1
	piglets 0-25 days	piglets 25-42 days	piglets 42 days – 20 kg	piglets 20-40 kg	young stock 40 - 70 kg	young stock 70-120 kg	suckling sow, empty sows, late pregnant sows	pregnant sows (1 period)
Crude protein %	21,00	19,00	18,50	17,50	16,50	15,50	17,50	14,50
Available energy MJ/kg	14,50	13,75	13,50	13,30	13,00	12,80	13,00	12,00
Crude fiber %	2,50	2,50	3,00	3,50	4,50	5,00	4,00	7,00
Natrium%	0,24	0,22	0,20	0,20	0,20	0,20	0,20	0,20
Calcium %	0,75	0,75	0,75	0,70	0,65	0,60	0,90	0,90
Phosphor digestible, %	0,45	0,45	0,40	0,35	0,30	0,25	0,45	0,45
Lactose, %	6,70	5,00	3,00	0,60	0,60			
Lysine digestible %	1,10	1,10	1,05	0,90	0,80	0,70	0,75	0,55
Methionine+cystine digestible, %	0,66	0,66	0,63	0,54	0,48	0,42	0,45	0,33
Threonine digestible, %	0,72	0,72	0,68	0,59	0,53	0,47	0,50	0,37
Tryptophane digestible, %	0,23	0,23	0,20	0,17	0,15	0,14	0,14	0,11
Vitamine A, IU/kg	20 000,0	20 000,0	20 000,0	20 000,0	8 000,0	8 000,0	10 000,0	10 000,0
Vitamine D, IU/kg	2 000,0	2 000,0	2 000,0	2 000,0	1 600,0	1 600,0	2 000,0	2 000,0
Vitamine E, mg/kg	150,0	150,0	150,0	150,0	60,0	60,0	150,0	100,0

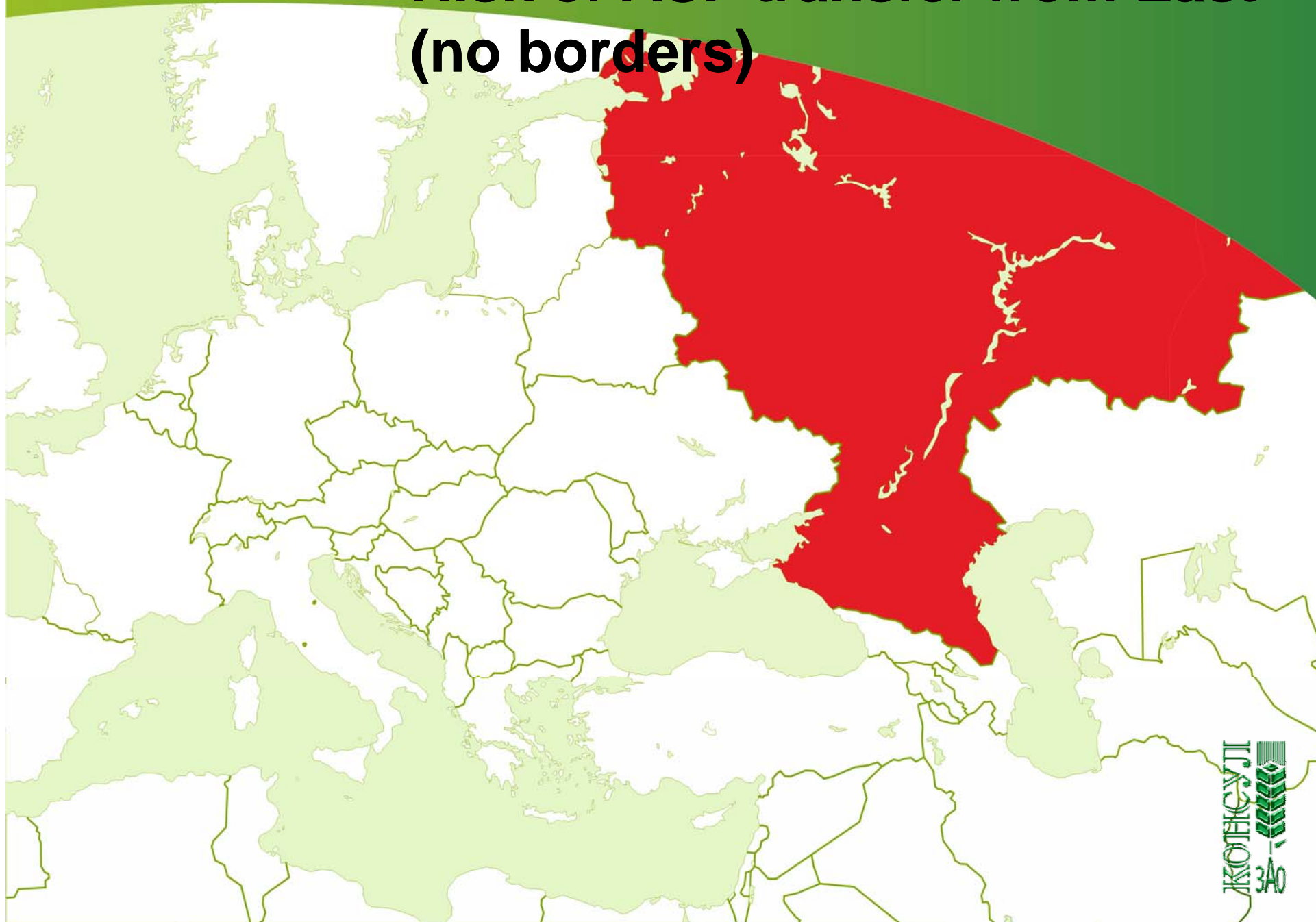


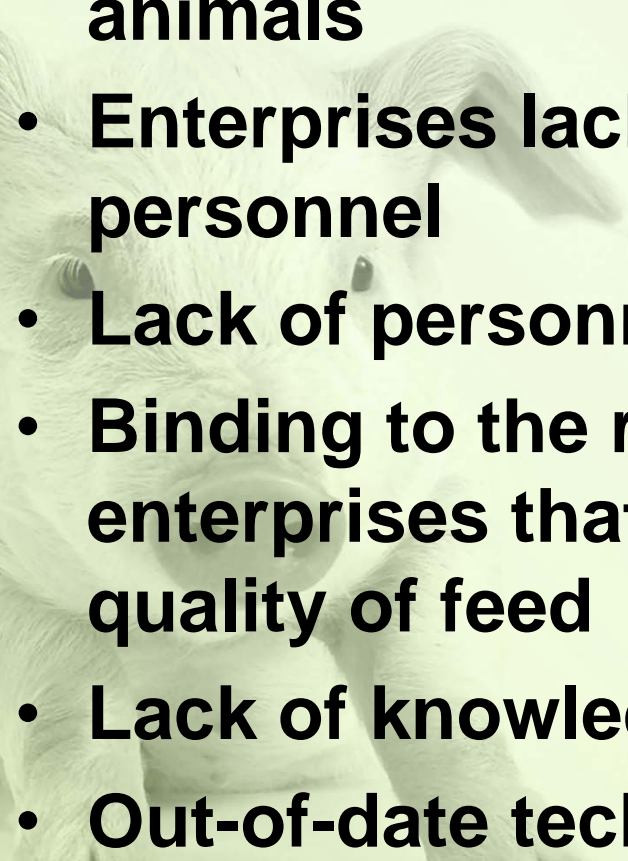
**Major threats to the veterinary state:**

# • Transit location



- Risk of ASF transfer from East (no borders)



- 
- **Constantly increasing susceptibility of the animals**
  - **Enterprises lack specialists and operating personnel**
  - **Lack of personnel motivation**
  - **Binding to the regional feed-milling enterprises that are not interested in the quality of feed**
  - **Lack of knowledge**
  - **Out-of-date technologies of pig rearing**

# Swine industry of the Republic of Belarus

Relatively good epizootic stare is achieved by:

- Relatively small volume of imports of pigs
- Remoteness of the pig-breeding complexes from roads and population
- Closed-end type of production
- Strict requirements to biosecurity
- Animal transfer on the territory of the Republic of Belarus controlled by the government
- Traditional staff tied to the agricultural settlements (villages)



# Swine industry of the Republic of Belarus

## Infectious factors of elimination Respiratory pathology

### Of bacterial etiology

- *Haemophilus parasuis*
- *Actinobacillus pleuropneumoniae*
- *Streptococcus suis*
- *Pasteurella multocida*
- *Bordetella bronchiseptica*
- *Mycoplasma hyopneumoniae*

### Of viral etiology

- PCV-2
- PRRSV
- ADV

# Swine industry of the Republic of Belarus

Diseases caused by:	
one pathogen	opportunistic pathogens (together with the existing environmental factors)
Classical and African swine fever	Respiratory system (PRDS)
	Reproductive and respiratory system, PRRS – pulmonic form
Foot-and-mouth disease; hand-foot-and-mouth disease	Porcine post-weaning diarrhea (PPWD)
Inflammation of the gastrointestinal tract due to coronavirus	Streptococcal infection
Aujeszky's disease*	Mycoplasmal pneumonia
Parvovirus disease	Atrophic rhinitis
Fever*	Pleuropneumonia
Reproductive and respiratory system, PRRS* – reproductive form	Glasser's disease
Brucellosis	Intestinal hyperplasia
Tuberculosis	Colibacteriosis
Anaerobic enterotoxemia in piglets	Rotaviral infections
Dysentery*	
Salmonellosis*	
Leptospirosis*	
Red fever*	

# Swine industry of the Republic of Belarus

Periods of respiratory diseases occurrence

	SUCKLINGS						GROWERS						FINISHERS					
	24 h	48 h	3 d	5 d	10 d	20 d	30 d	40 d	50 d	60 d	70 d	80 d	90 d	100 d	130 d	160 d	190 d	210 d
viral	Aujeszky's disease						Aujeszky's disease											
	PRRS																	
	PMWS						PDNS											
bacterial	<i>Mycoplasma hyopneumoniae</i>																	
	<i>Streptococcus suis</i>																	
	<i>Haemophilus parasuis</i>																	
													<i>Actinobacillus pleuropneumoniae</i>					
													<i>Pasteurella multocida</i>					
							<i>S. choleraesuis</i>											

# Swine industry of the Republic of Belarus


Periods of intestinal diseases occurrence

	sucklings					growers					finishers						
	24 h	48 h	1 week	2 weeks	3 weeks	4 weeks	5 weeks	6 weeks	8 weeks	10 weeks	12 weeks	14 weeks	16 weeks	18 weeks	22 weeks	28 weeks	
viral	Porcine rotaviral infection																
	Coronaviral infection																
	Virus diarrhea																
bacterial					Dysentery <i>Brachyspira hyodysenteriae</i>												
							Spirochetosis <i>Brachyspira pilosicoli</i>										
		<i>Escherichia coli</i>															
		<i>Cl.perfringens</i> C, A															
						<i>Escherichia coli</i>											
							Adenomatosis <i>Lawsonia intracellularis</i>										
						Salmonellosis ( <i>Salmonella choleraesuis</i> , <i>typhimurium</i> )											
				Isosporiasis <i>I.suis</i>													

# Swine industry of the Republic of Belarus

## Factors making it difficult to maintain high health status of livestock

- Presence of many pathogens (stationary)
- Technical condition of rooms
- Not always adequate feed
- Low personnel motivation
- Poor diagnostic and procedural basis
- Administrative pressure by the authorities (import substitution, gross figures, lack of knowledge)



# **Key points for work efficiency improvement of swine enterprises in Belarus**

# 1. Effectiveness improvements of usage of maternal stock, “Program 30”

- Delivery of boars
- Rearing of replacement gilts
- Insemination effectiveness improvement
- Improvement of work in the farrowing area



## 2. Feed effectiveness improvement

- Mycotoxins control
- Stability of formulations
- Quality control of protein and grain raw materials



### 3. Improvement of veterinary well-being of farms

- Timely and quality diagnosis
- Modern preventive measures
- Maintenance of conditions corresponding to the improving genetics
- Knowledge improvement of the personnel



## **4. Reconstruction and re-equipment of farms**

# Old farm



















# Improved old farm









# New farm












A piglet is sitting on a white, curved surface, looking towards the camera. The background is a solid green color. The text "Thanks for your attention." is centered on the right side of the image.

**Thanks for your attention.**