African swine fever in Poland
Management of wild boar population

General Veterinary Inspectorate

Data on animal population
Wild boar

Wild boar in Poland

The competent authorities for wildlife managament in Poland are:

Polish Hunting Association (PHA) and State Forests (SF)

The information on wild boar population in Poland was prepared based on the data collected from hunting districts leased by hunting clubs of the PHA, that is from 93% of the existing hunting districts in the country, as well as the Directorate General of State Forests (DGSF) whose direct management covers the remaining percentage of hunting districts .

Data on animal population
Wild boar

Population of wild boar in Poland in the years 2000-2013 [PHA+DGSF]

Year	Population of wild boar, in thousands
2000	118.3
2005	173.5
2009	251.0
2010	249.9
2011	267.8
2012	255.8
2013	282.3

A slight, but steady, increase of the wild boar population has been registered during the past 10 years

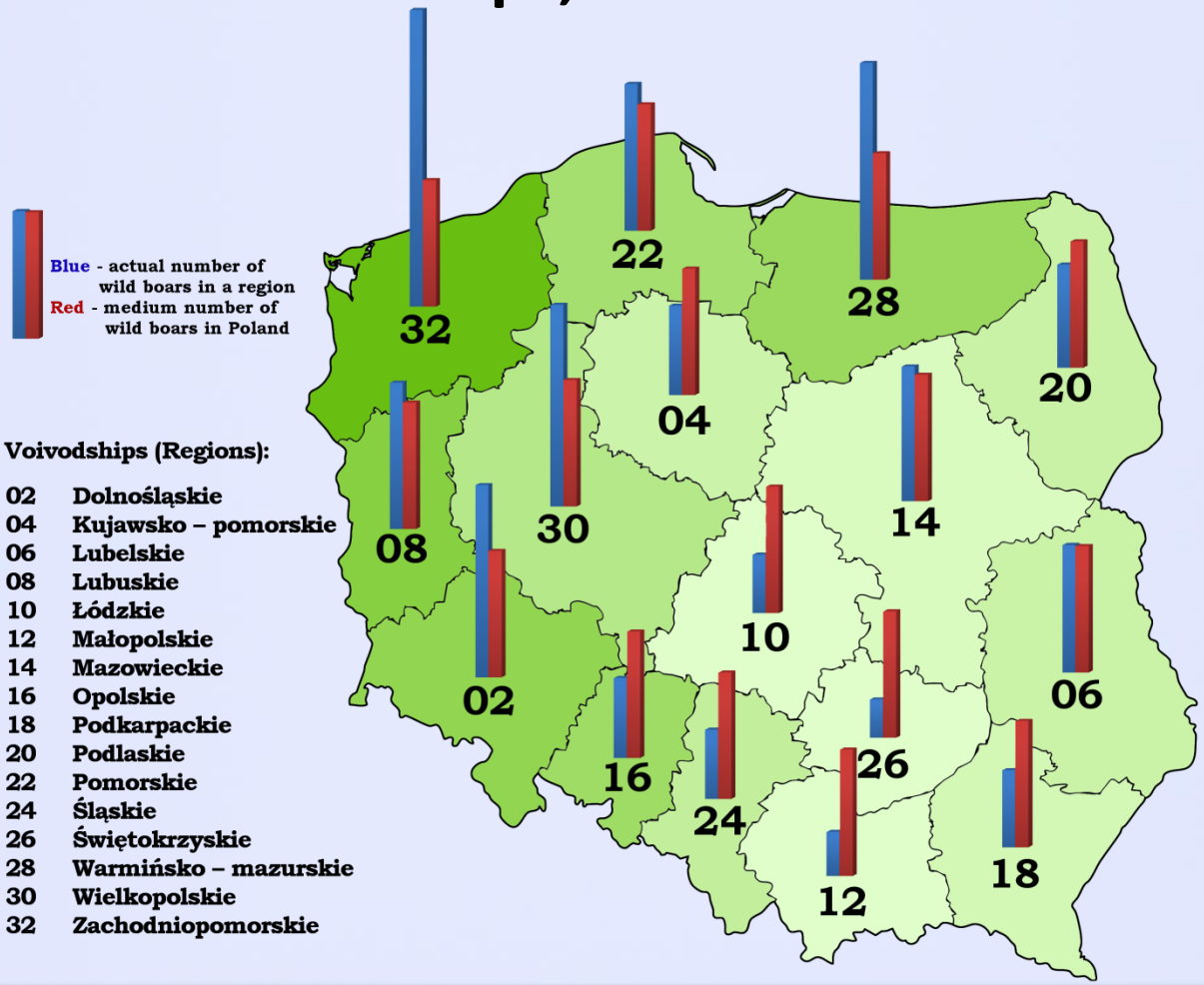
Data on animal population
Wild boar

The number and density of the wild boar population in the Polish voivodeships, as of 10 March 2013 (rounded figures) [PHA+DGSF]

Voivodeship	Population of wild boar [heads in thousands]	Voivodeship area [km²]	Density of wild boar population in the voivodeship [heads per km²]	Hunting districts in a voivodeship [km²]	Density of wild boar population in the hunting districts [heads per km²]
Dolnośląskie	26,8	19 946,74	1,34	17 321,32	1,55
Kujawsko-pomorskie	12,5	17 971,34	0,7	15 949,73	0,78
Lubelskie	17,8	25 122,49	0,71	21 910,53	0,81
Lubuskie	20,4	13 987,88	1,46	12 590,67	1,62
Łódzkie	8,2	18 218,95	0,45	16 648,69	0,49
Małopolskie	6,2	15 182,87	0,41	12 219,29	0,51
Mazowieckie	18,8	35 558,47	0,53	30 408,29	0,62
Opolskie	11,2	9 411,87	1,19	8 199,10	1,37
Podkarpackie	10,8	17 845,66	0,61	13 879,12	0,78
Podlaskie	14,4	20 187,02	0,71	18 423,96	0,78
Pomorskie	20,5	18 310,34	1,12	17 251,11	1,19
Śląskie	9,7	12 333,09	0,79	9 688,62	1,00
Świętokrzyskie	5,4	11 710,50	0,46	10 525,50	0,51
Warmińsko-mazurskie	30,2	24 173,17	1,25	22 780,43	1,33
Wielkopolskie	28,1	29 826,51	0,94	25 660,19	1,10
Zachodniopomorskie	41,3	22 892,48	1,8	20 244,59	2,04
Total/average	**282,2**	**312 679**	**0,9**	**273 701,14**	**1,03**

Data on animal population
Wild boar

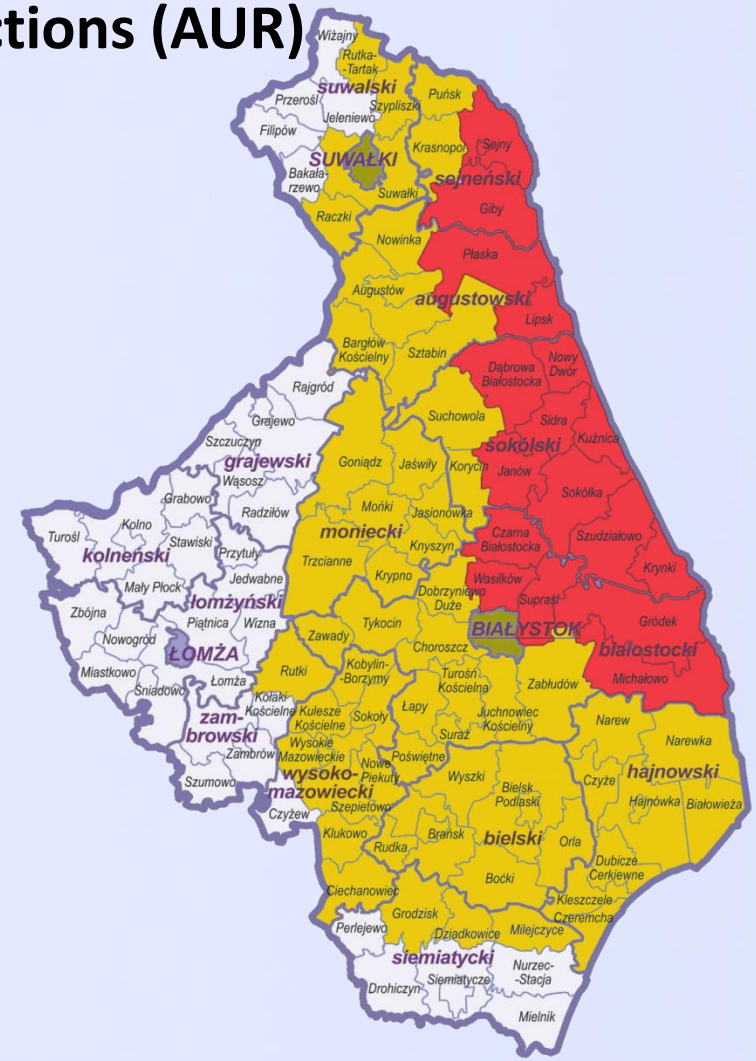
The number and density of the wild boar population in the Polish voivodeships, as of 10 March 2013.



Data on animal population
Wild boar

Wild boar population in Area Under Restrictions (AUR) and Protection Area (PA)

Wild boar population and population density in parts of podlaskie voivodeship, as of March 2014 [PHA+DGSF]			
Zone	**Wild boar population [heads]**	**Hunting district area [km²]**	**Wild boar population density [heads/km²]**
(1) AUR	5000	4400	1,13
(2) PA	7000	~7000	1,00
(1+2) Total	12000	~11400	1,05



Data on animal population
Wild boar

Wild boar management system in Poland

The applied wildlife management in Poland, and in particular the wild boar hunting system, is in line with the central European practices; pre-reproductive wild boar densities are relatively low with an average of:

- density in a whole region: 0,9 animals/km^2 (from 0,41-0,71 in central and Eastern part of Poland up to 1,80 in Western Pomerania voivodeship);
- density in the hunting districts of a region: 1,03 animals/km^2 (from 0,49-0,81 in central and eastern part of Poland up to 2,04 in Western Pomerania voivodeship).

The hunting quota is set at about 50% of the post-reproductive population in order to maintain the size of the whole population stable. 80-90% of the expected hunting quota is normally achieved.

The wild boar hunting season lasts for the whole year, with the exception of adult females, which can be shot in the period from 15 August until 15 January.

Data on animal population
Wild boar

Wild boar management system in Poland

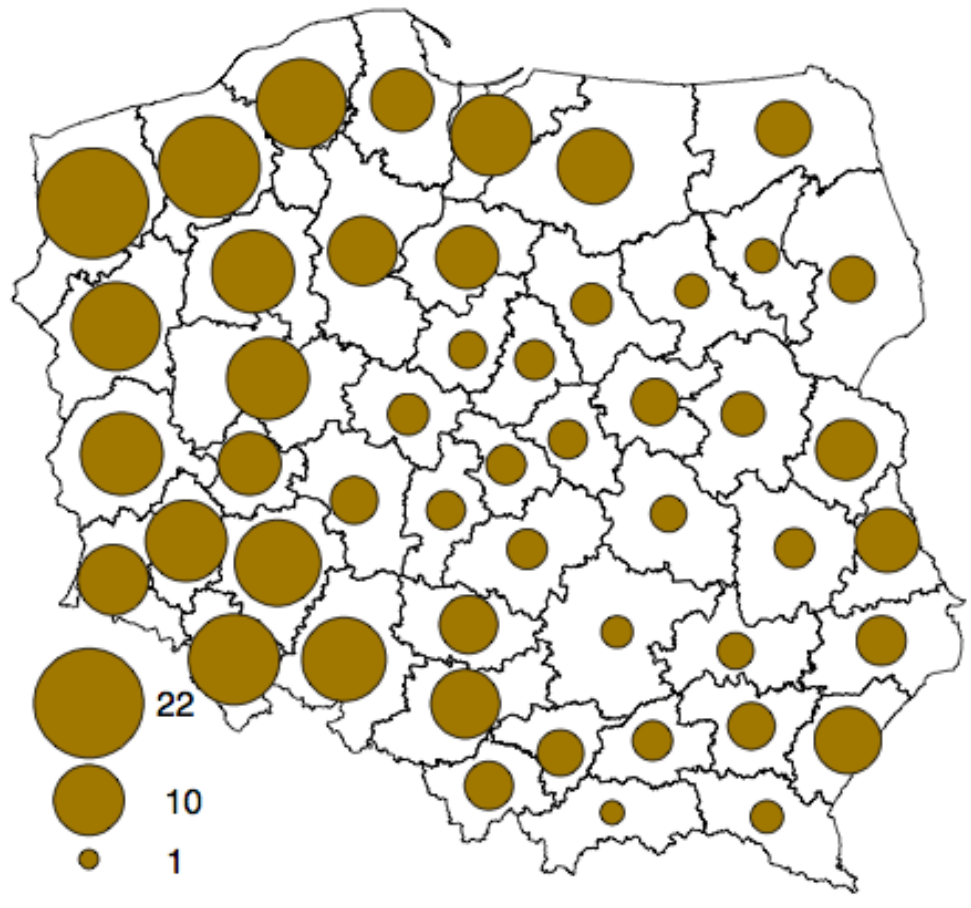
During a year, typically the hunting quota consists of the following age groups of wild boar:

- subadults under 1 year of age: 40 – 60%,
- young wild boar between 1 and 2 years of age: 20 – 40%,
- adults (more than 2 years of age): up to 20%.

Typically the proportion of sexes of wild boar in the hunting quota is 1:1 (or with slightly higher number of male wild boar shot)

Data on animal population
Wild boar

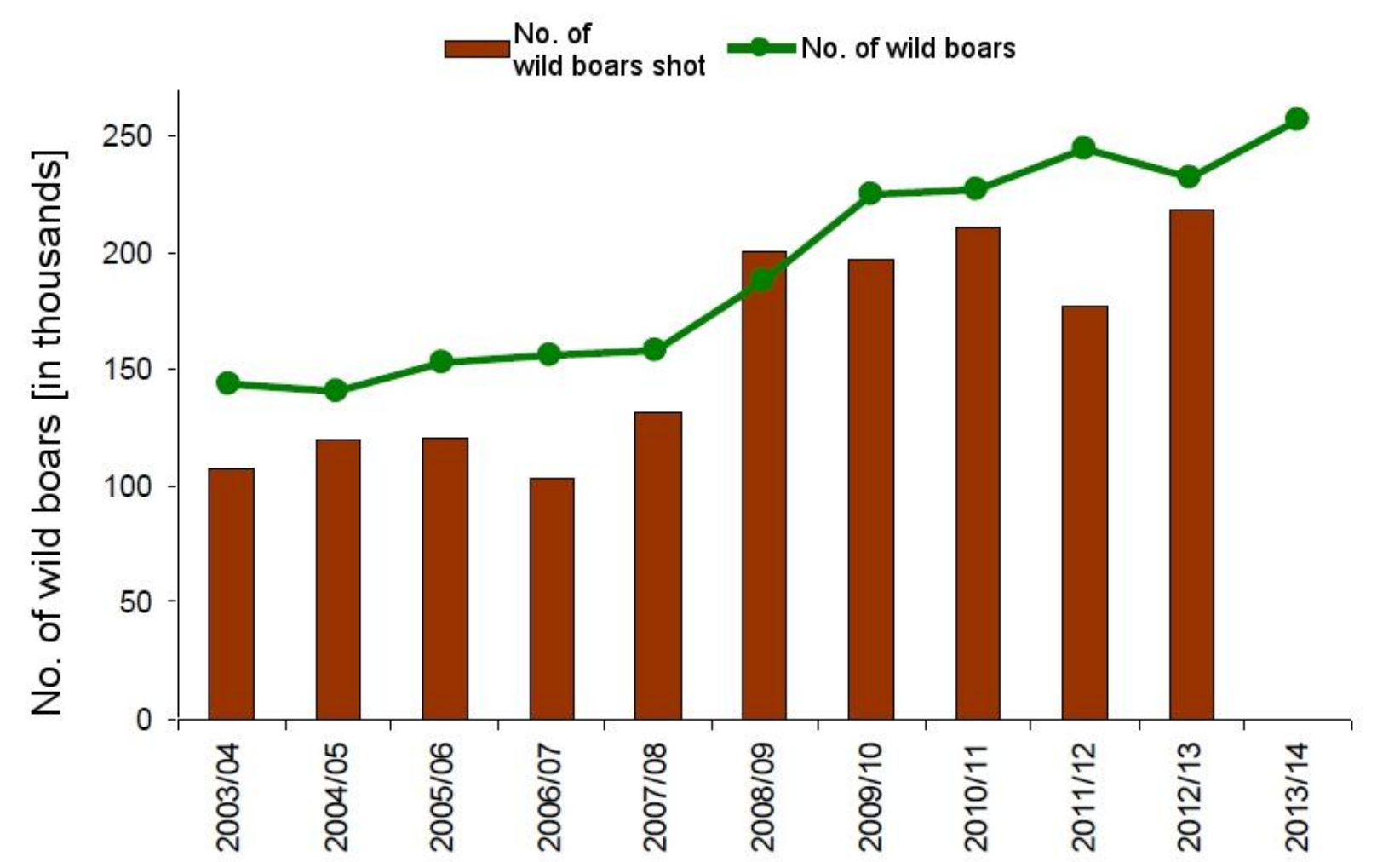
Wild boar management system in Poland



Wild boar acquisition in hunting districts in the 2010/2011 hunting season (wild boar shot per 10 km^2) [PHA]

Data on animal population
Wild boar

Wild boar management system in Poland



The populatioan of wild boar in Poland & the number of wild boar shot [PHA]

Estimation of wild boar population

Trail drive away – counting of animals driven away from a forest area surrounded by observers (direct method) with silent beater:

- on 10% of the area covered by animals' counting;
- with a use of observers and beater (app. 50-70 persons);
- calculation error – around 20%;
- experienced personel (discipline – extremly important) – to avoid double counting of the same animals;
- in winter – lack of leaves on the trees – good vision;
- additional infromation on animals age and sex can be obtained.

Estimation of wild animals population

Other estimation methods:

- indirect :
  - snow traces calculation,
  - feaces groups calculation (mooses);
- direct :
  - annual observation,
  - counting in habitats,
  - counting of animals entering open areas,
  - aerial surveys (opean areas),
  - thermal counting (deers and mooses),

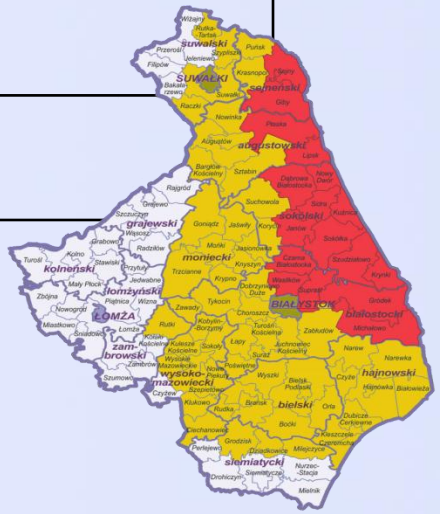
Data on animal population
Wild boar

Wild boar management system in Poland

- In a typical situation, wild boar are not fed throughout the year;
- Feeding of wild boar occurs only in winter – when food sources for wild boar are scarce;
- However, in the area under restrictions, feeding is banned all year long;
- Only baiting of wild boar (using small quantities of feed - no more than 10 kg/km^2/month) is going to be allowed in the area under restrictions.

Surveillance activities in the area under restrictions and in the protection area

Zone	Planned wild boar hunting quota for 2014/15 [PHA+DGSF] [in thousands of animals]
AUR	4628
PA	5435
Total	10063



Surveillance activities

Wild boar

Surveillance activities in the area under restrictions and in the protection area

Since (2011) 2013 ASF surveillance has been implemented in Poland – in 2014 intensified in the regions currently affected with the disease.

Currently in the area under restriction and in protection area all shot and found dead wild boars are sampled, while the number of wild boars to be shot during the year is established in the Hunting Plan for 2014/2015 hunting season.

Surveillance activities

Wild boar

Surveillance activities in the area under restrictions and in the protection area

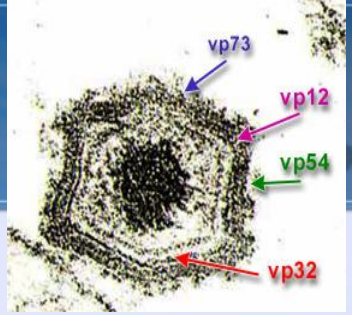
Area under restrictions and protection area:

- all sick and dead wild boar (road-kills incuded): RT-PCR and, if possible ELISA;
- all shot wild boar: qRT-PCR and additional one for antibodies detection.

Surveillance activities - area under restrictions and protection area

The number of animals subject to tests (data as of 30 October 2014)					
2011-2013		2014		2011-2014	
pigs	wild boar	pigs	wild boar	pigs	wild boars
2 124	13 063	18 534	11 789	20 658	24 852
				Total	45 511

NRL

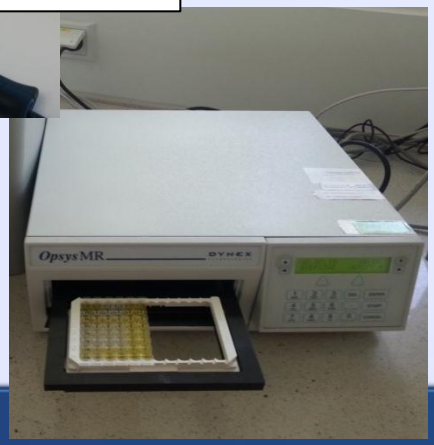


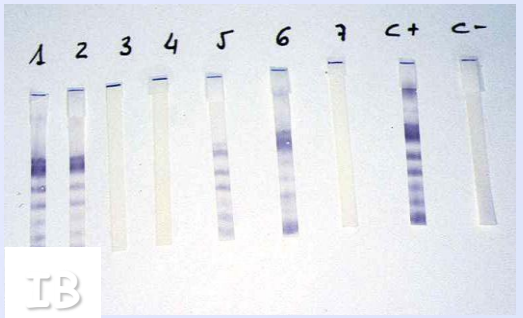
BSL 3+ for ASF diagnosis
In total 10 persons involved

Laboratory capacity: Serology

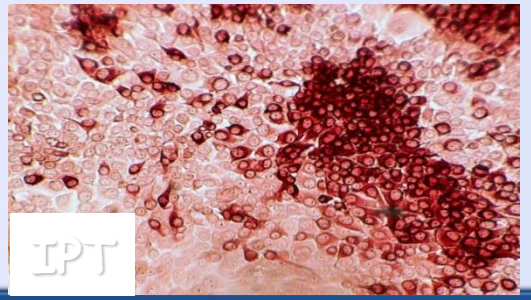
- Monitoring - commercial ELISA,
- Confirmatory diagnosis - IB and IPT tests.
- Laboratory diagnostic capacity: 600 sera/day.

ELISA





IB



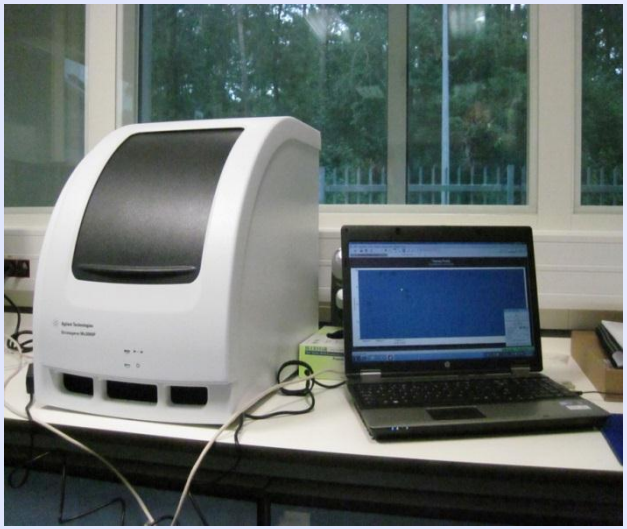
IPT

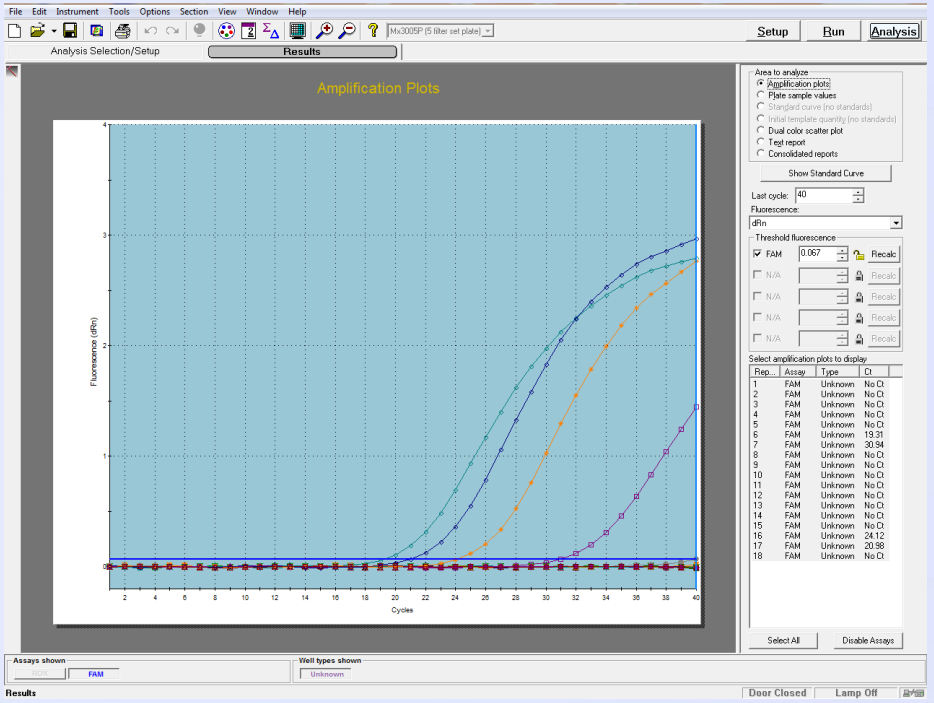
Laboratory capacity: PCR

- Laboratory diagnostic capacity: 200 organs or 1000 blood samples/day.

Fernandez-Pinero J. et al. 2012;
FastStart Universal Probe Master Kit (Roche)

King DP et al. 2003; (Qiagen)





Estimation of ASF prevalence in wild boar in Poland

- Total number of wild boar (WB) tested in Poland in 2014 (till November 20): 13.184
- Total number of WB tested in Podlaskie voivodeship in 2014: 5786
- Total number of positive results in WB (all positive WB in Podlaskie voivodeship – till November 20):
  - dead: 44
  - hunted: 2

Estimation of ASF prevalence in wild boar in Poland

- sensitivity and specificity of PCR used for testing: ~ 100%
- real prevalence of ASF in WB in Poland: ~ 0.35% (95% probability confidence interval (CI) = 0.25 - 0.45%.
- prevalence of ASF in WB in Podlaskie voivodeship: 0.8% (95% CI= 0.57-1.02%).

Epidemiological investigation

Source of infection for the first cases

First occurence in wild boar

- ASF viruses isolated in the cases that underwent additional testing in the EURL belong to genotype 2 and are identical with the viruses isolated in Lithuania and Belarus, showing 100% homology;
- all ASF cases (21) in Poland are located in proximity of Eastern border (not exceeding the distance of app. 17 km);
- until July 2014 no evidence of infection in pigs has been found (intensive surveillance in place since 2013) - the first wild boar could not have got infected from pigs;
- in accordance with available information, in Belarus, near the border area, intensive wild boar hunting was carried out in 2013/2014.

Epidemiological investigation

Currently:

- limited circulation (in two districts) in wild boar – the area in which ASF has been detected:
  - is 17 km in land deep (from the border with BY) and app. 30 km long (along the border with BY).
  - covers Eastern part of 4 municipalities which are located in 2 districts. Neverthelss, ASF outbreaks were found in 2 backyard holdings situated at the territory of only one commune;
- the most probable source of infection of pigs in 2 outbreaks were - indirectly - wild boar (poor biosecurity, human factor).

Epidemiological investigation

Source of infection for the first cases

The source of infection in wild boar could not be determined with 100% certainty; however, the most probable source of entry of ASF to Poland were infected wild boar crossing the border. Epidemiological findings support this hypothesis.

Wild boar management strategy

Hunting activities in the areas under restrictions

In accordance to the recent EFSA (European Food Safety Authority) scientific opinion:

-**Drastic hunting is not a tool to reduce the risk for introduction and spread of ASFV in wild boar populations**.

-Attempts to drastically reduce wild boar populations may even increase transmission and facilitate progressive geographical spread of ASFV, since intensive hunting pressure on wild boar populations leads to dispersion of groups and individuals.

Bearing in mind that Opinion, hunting pressure in the area under restrictions and in the protection area in Poland will not be increased. The aim is to maintain the wild boar population at the current level.

Hunting is to be organised in such a way that reduces the risk of dispersion of animals on large distances – currently only individual hunting is allowed, in the future, however, it is foreseen to also permit stationary group hunting with a beatter limited to few people without using sound signals.

Wild boar management strategy

Hunting activities in the areas under restrictions

Before ASF occurrence in Poland, hunting in the areas under restrictions was not controlled by the VI;

However, after cases of ASF in wild boar were found in Poland, the following rules were implemented:

- District Veterinary Officers issue authorisations for hunting activities in the area under restrictions;
- hunters - after receiving training – provide samples for ASF testing;
- results of the hunts are under surveillance of the DVO;
- carcasses of wild boar found dead, as well as shot wild boar that are not meant for consumption are destroyed;
- hunters must apply proper biosecurity measures;
- introduction of restrictions concerning movement of wild boar meat.

Cooperation

Coopertaion with other institutions in Poland

- In Poland the competent authorities for wildlife management are the Polish Hunting Association (PHA), and State Forests (SF) (although the VI does not perform hunts, it does have control over them due to the ASF situation);
- Hunters from those institutions provide (after receiving training) samples for laboratory testing for ASF, as well as deliver the carcasses of shot wild boar to cold stores;
- Members of PHA, SF, Border Guard are additionally tasked with notifying the VI cases of finding dead wild boar by their members; special epidemiological investigation documents are also filled in by those individuals;
- Experts from the PHA and SF are members of the Group of Experts on ASF that advises the CVO on the ASF eradication strategy;
- The VI shares extensive information (guidelines, notifications, queries) with all the services and institutions that might be involved in any way in ASF eradication.

Cooperation

Coopertion with other countries

Polish VI was involved in various meetings with other Veterinary Services with the aim to devise a widely renown ASF eradication strategy:

- 30 July 2014, Vilnius (Lithuania);
- 1 September 2014, Puławy (Poland);
- 8-10 October 2014, Vilnius (Lithuania);

Those meetings resulted in developing a common strategy for ASF eradication.

-27 July 2014, Białystok (Poland) – meeting with the VS of Belarus (exchange of information on ASF situation in both countries)

Challanges

Challanges concerning ASF control in wild boar

- Can the current limited virus circulation be sustained and eventually suppressed?
- Will the coming winter prove to be helpful in limiting the spread of ASF in a wild boar population?
- Detailed, precise communication on the transboundry movement of wild boar;
- Adoption of different strategies for ASF eradication and wild boar management by various Veterinary Services.

International support

The international community could give its support to:

- sharing and dissemination of the new epidemiological data;

- scientific research on:
  - survival rate of the affected animals;
  - probability of virus transmission by feed of plant origin (produced from contaminated plants, e.g. corn contaminated with blood/urine);
  - changes in wild boar ecology due to climate changes and the availability of food;
  - wild boar management – what is the threshold of density, below which ASF will decline in the wild boar population?

Thank you for your attention