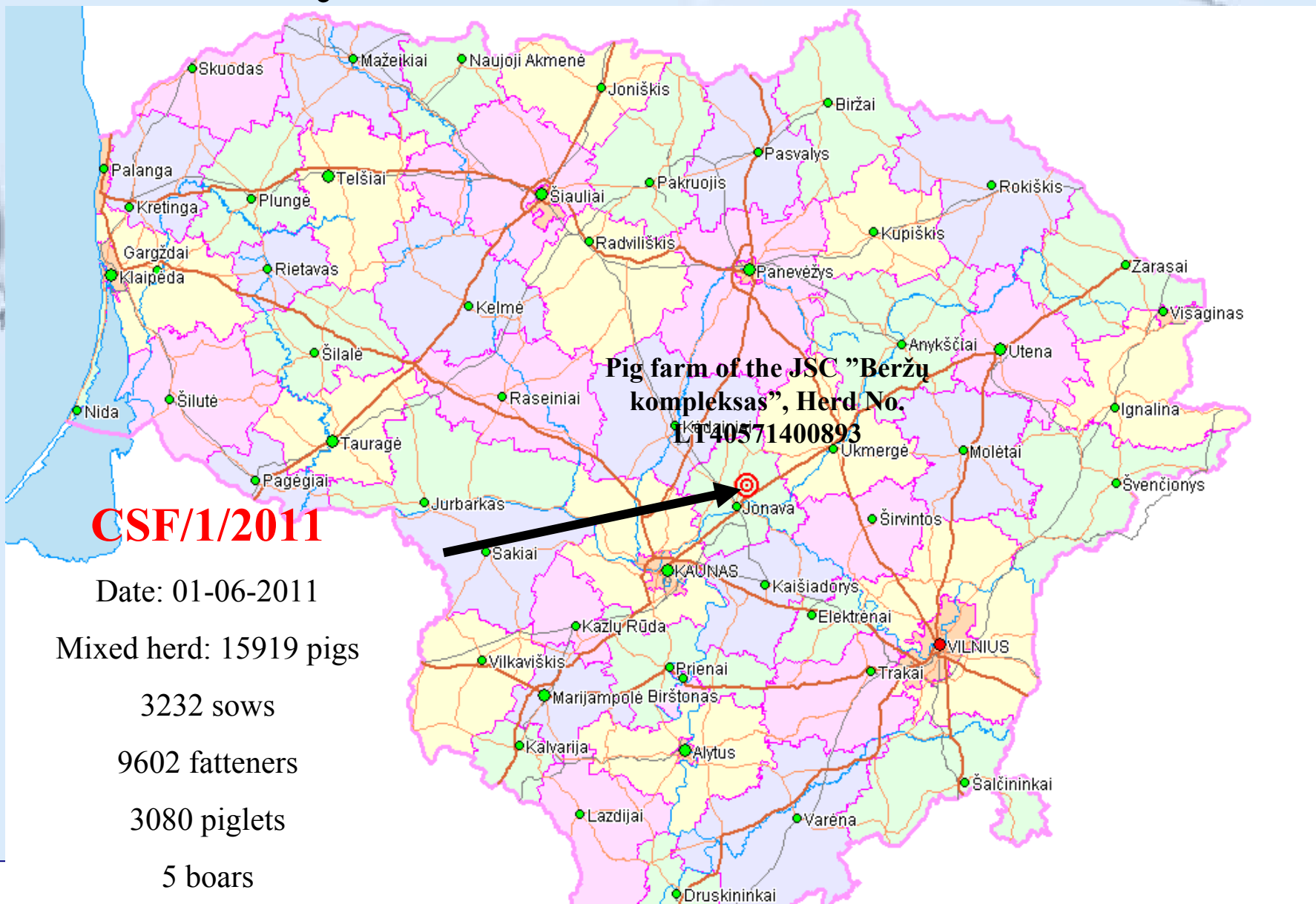




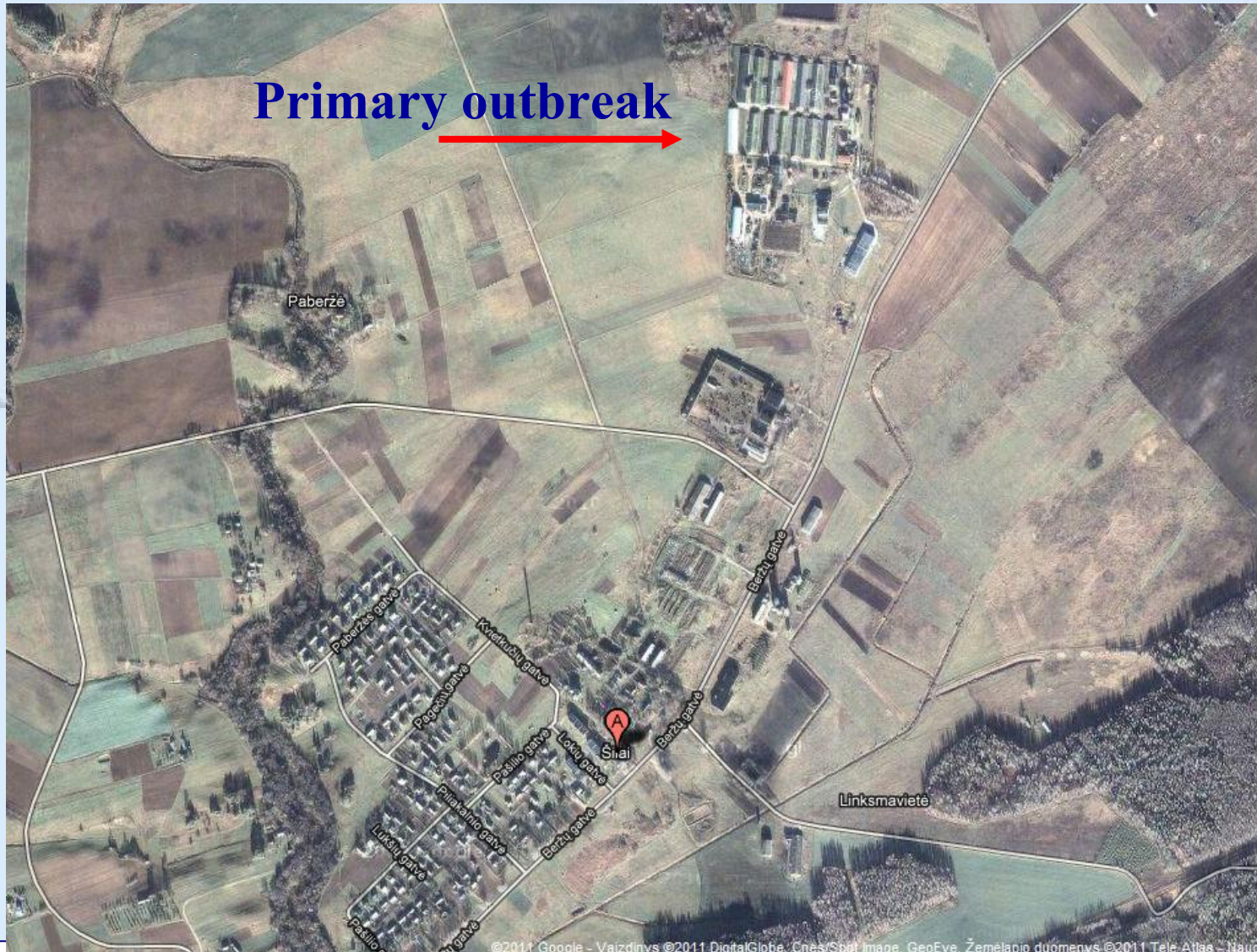
# **Classical swine fever in Lithuania in 2011**

**SCoFcAH  
7–8 September 2011,  
State Food and Veterinary Service,  
Lithuania**

# Primary outbreak of CSF in Lithuania



# Location of farm (CSF/1/2011)



# Location of farm (CSF/1/2011)





# Farms belonging to the same company

4 farms in Jonava district belong to the JSC “Beržų kompleksas”:  
in Šilų, Praulių, Blauzdžių and Trakų villages

No.	Farm name	District/Village	No. of pigs
1.	UAB „Beržų kompleksas“ LT 40571400893	Jonavos r., Šilų sen., <b>Šilų k.</b>	15919
2.	UAB „Beržų kompleksas“ LT 40570600562	Jonavos r., Šilų sen., <b>Praulių k.</b>	3082
3.	UAB „Beržų kompleksas“ LT 40552800042	Jonavos r., Žeimių sen., <b>Blauzdžių k.</b>	4606
4.	UAB „Beržų kompleksas“ LT 40558700109	Jonavos r., Šilų sen., <b>Trakų k.</b>	1504
<b>Total:</b>			<b>25111</b>

Last **introduction of pigs**: 10 years ago from Denmark.



# History of CSF/1/2011

- **General information (1)**
  - **Increased mortality of pigs around 17<sup>th</sup> of May 2011.**
  - **Feed borne toxicosis was suspected.**
  - **Postmortem examination did not show typical symptoms for CSF.**
  - **Local Veterinary Service of Jonava district was informed about increased mortality on 23<sup>rd</sup> of May 2011**
  - **Blood samples were taken and tested negatively for CSF, ASF and Aujeszky's disease on the 24<sup>th</sup> of May 2011**
  - **Morbidity and mortality of pigs continued to increase. Treatment of pigs remained unsuccessful.**



# History of CSF/1/2011

- **General information (2)**

- **Emergency team of the Animal Disease Control Centre went to the farm on 31<sup>st</sup> of May 2011.**

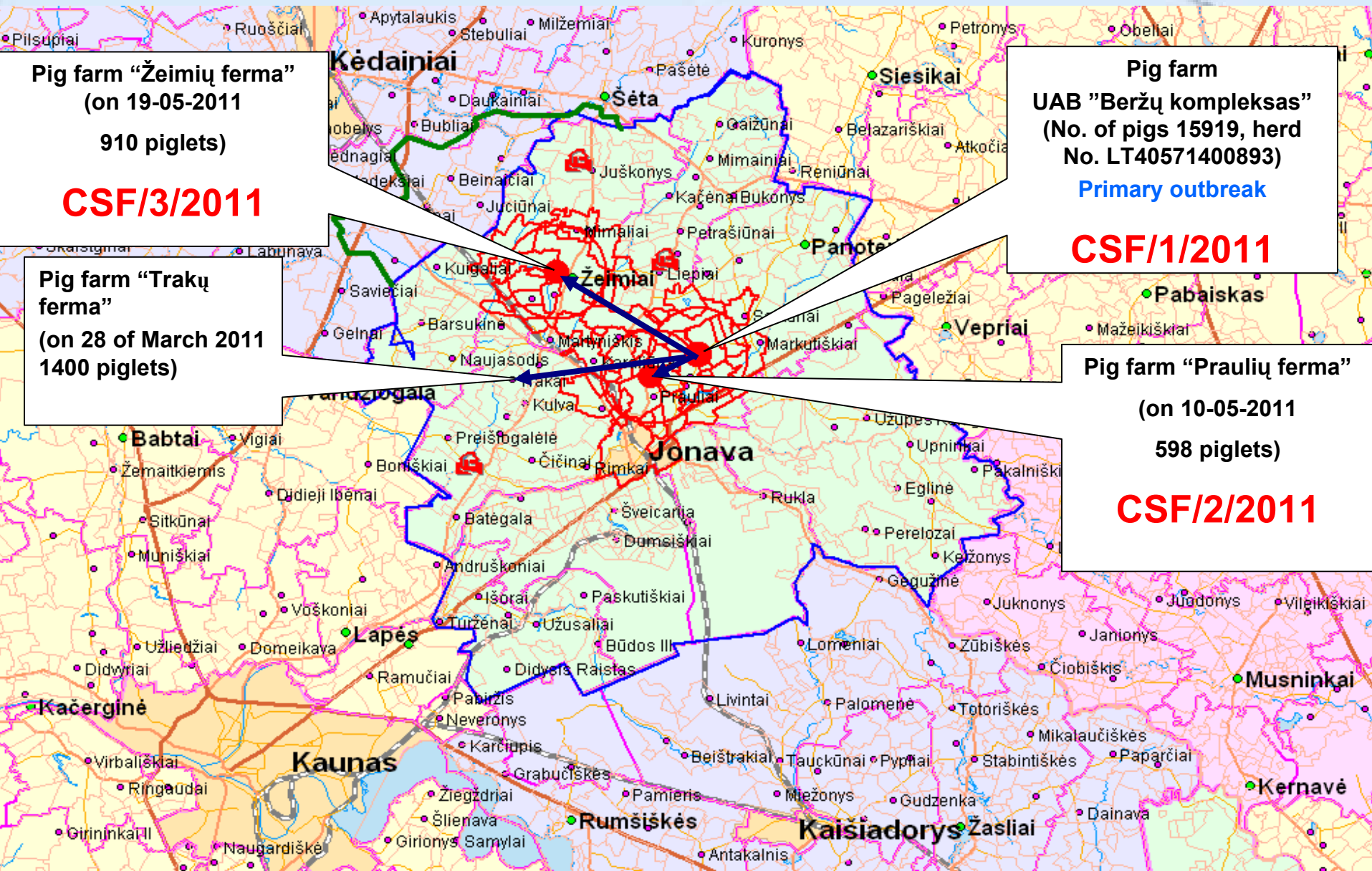
- **Clinical signs were typical for CSF: fever, conjunctivitis, sudden death, some slight diarrhea, disturbance of the CNS, e.g. tremor, swimming movements, etc.**
- **Post mortem lesions were classical for CSF: hyperemia and cyanosis of the skin, and hemorrhages in skin, subcutaneous tissues, muscles, mucous membranes, pleura, peritoneum, cardiac sack, lymph nodes, kidneys, myocardium, urinary bladder, acute inflammation of lungs, lymph nodes, stomach, small and large intestines, pleuritis, peritonitis, enlarged spleen and infarcts in some cases**
- **Tissue and blood samples were taken for laboratory analysis**

# History of CSF/1/2011

- **General information (3)**
  - **First lab results obtained on 1<sup>st</sup> of June 2011:**
    - **Antibody results: 36 positive**, 13 inconclusive, 14 negative
    - **Antigen from blood: 3 positive**
    - **RT-PCR from tissues: all positive (63 samples)**
    - **Blood and tissue samples were sent to CRL for confirmation**
  - **Outbreak of classical swine fever was confirmed and European Commission, OIE and neighboring countries were informed (1<sup>st</sup> of June 2011)**
  - **From 1<sup>st</sup> of June 2011 stand still on movement of pigs (in and out of Lithuania) introduced by the Order of the Director of SFVS**
  - **Further outbreaks (CSF/2/2011 and CSF/3/2011) were confirmed on 2<sup>nd</sup> of June 2011 on 2 fattening pig farms belonging to the same company located within surveillance zone**



# Movement of piglets from CSF/1/2011



Pig farm "Žeimių ferma"  
(on 19-05-2011  
910 piglets)

**CSF/3/2011**

Pig farm "Trakų ferma"  
(on 28 of March 2011  
1400 piglets)

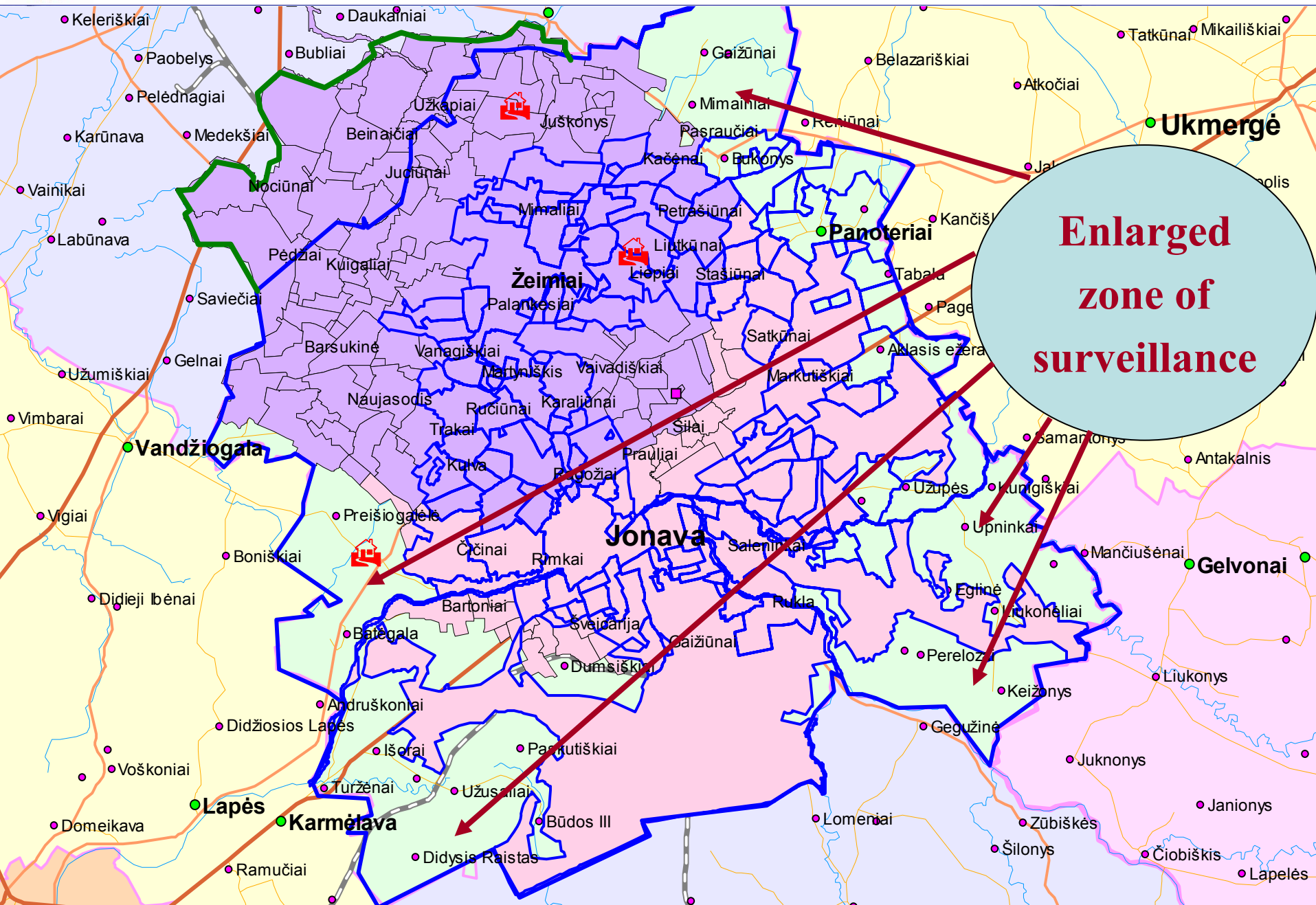
Pig farm  
UAB "Beržų kompleksas"  
(No. of pigs 15919, herd  
No. LT40571400893)

Primary outbreak

**CSF/1/2011**

Pig farm "Praulių ferma"  
(on 10-05-2011  
598 piglets)

**CSF/2/2011**



**Enlarged  
zone of  
surveillance**

**Jonava**

**Žeimiai**

**Vandžiogala**

**Lapės**

**Karmėlava**

**Ukmergė**

**Panoteriai**

**Gelvonai**

Keleriškiai

Daukainiai

Gaižūnai

Belazariškiai

Tatkūnai

Mikailiškiai

Paobelys

Bubliai

Atkočiai

Pelėdnagiai

Užkapiai

Mimainiai

Pasraučiai

Reniūnai

Karūnava

Medekšiai

Beinačiai

Juškonys

Kačėnai

Bukonys

Jal

Vainikai

Nociūnai

Juciūnai

Petrašiūnai

Kančiškiai

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Gelnai

Barsukinė

Vanagiškiai

Martyniškis

Satkūnai

Atlasis ežeras

Vimbarai

Naujasodis

Ruciūnai

Karaliūnai

Markutiškiai

Vigiai

Preišiogalė

Boniškiai

Trakai

Šilai

Užupės

Kumigiškiai

Didieji bėnai

Bartoniškiai

Cičinai

Rimkai

Saleninkai

Upninkai

Mančiūšėnai

Voškoniai

Didžiosios Lapės

Andruškonai

Šveidarija

Rukla

Eglinė

Irkonėliai

Domeikava

Didysis Raistas

Išorai

Panutiškiai

Gaižiūna

Perelozė

Keičonys

Ramučiai

Turžėnai

Užusilai

Būdos III

Lomeniai

Gegužinė

Juknony

Janionys

Didysis Raistas

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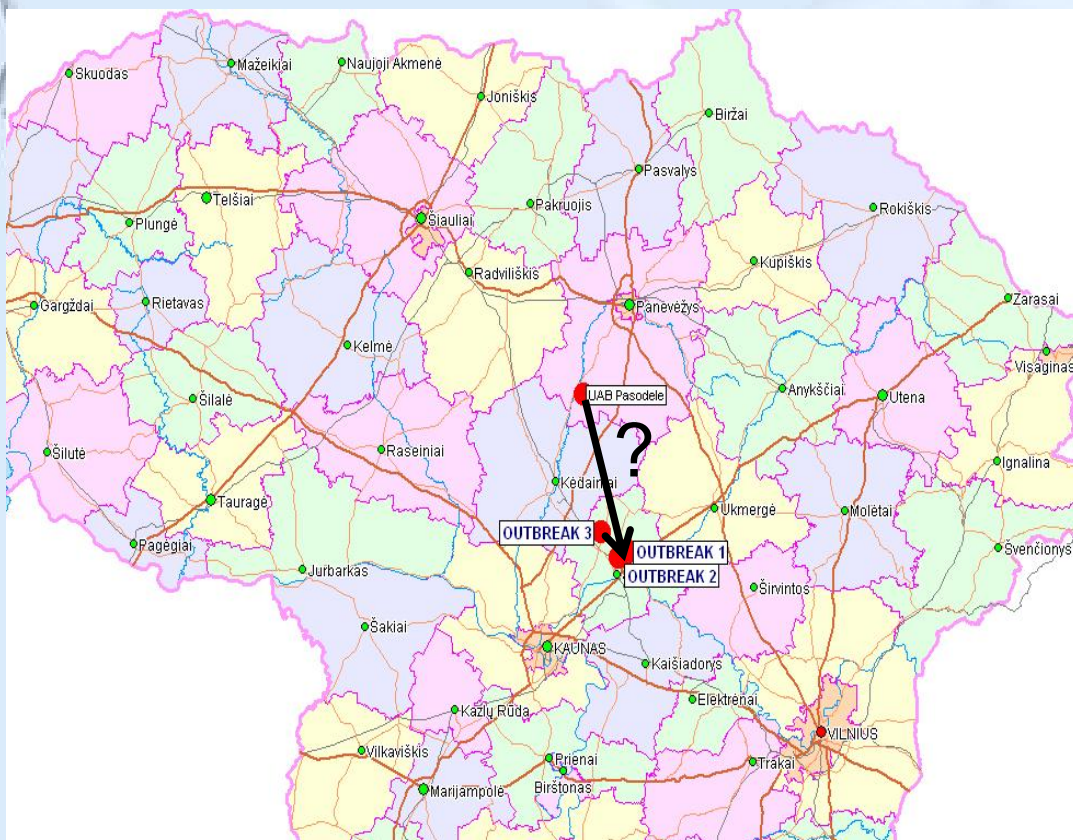
Keičonys

# Primary outbreak (**CSF/1/2011**)

- Time period of probable virus introduction:  
End of February – beginning of March
- Source of infection: unknown
- Probable ways of introduction:  
under investigation

# Hypothesis about virus introduction to CSF/1/2011

## 1. Same virus type (Genotype 2.1) as in 2009



**Partially excluded:**

In 2009 all 445 pigs of that outbreak were culled and rendered. After cleaning and disinfection farm has not been repopulated



# Hypothesis about virus introduction into CSF/1/2011

2. Virus introduced from an unknown infection in wild boar population...

**No evidence for this hypothesis**



# Examination of wild boar

	Estimated wild boar population	Samples taken and tested from wild boars	Samples tested against CSF antibodies	Samples tested against CSF by RT-PCR	Test results
In protection zone (3 km zone)	< 100	38	15*	28**	All negative
In surveillance zone (10 km zone)	< 700	91	40*	67**	All negative
<b>In total</b>		<b>129</b>	<b>55*</b>	<b>95**</b>	All negative

	Samples taken and tested from wild boars	Samples tested against CSF antibodies	Samples tested against CSF antigen	Samples tested against CSF by RT-PCR	Test results
In whole Jonava, Kėdainiai, Ukmergė districts (including protection and surveillance zones)	280	59*	1*	257**	All negative
Other districts of Lithuania	536	258*	49*	343**	All negative
<b>TOTAL:</b>	<b>816</b>	<b>317*</b>	<b>50*</b>	<b>600**</b>	All negative

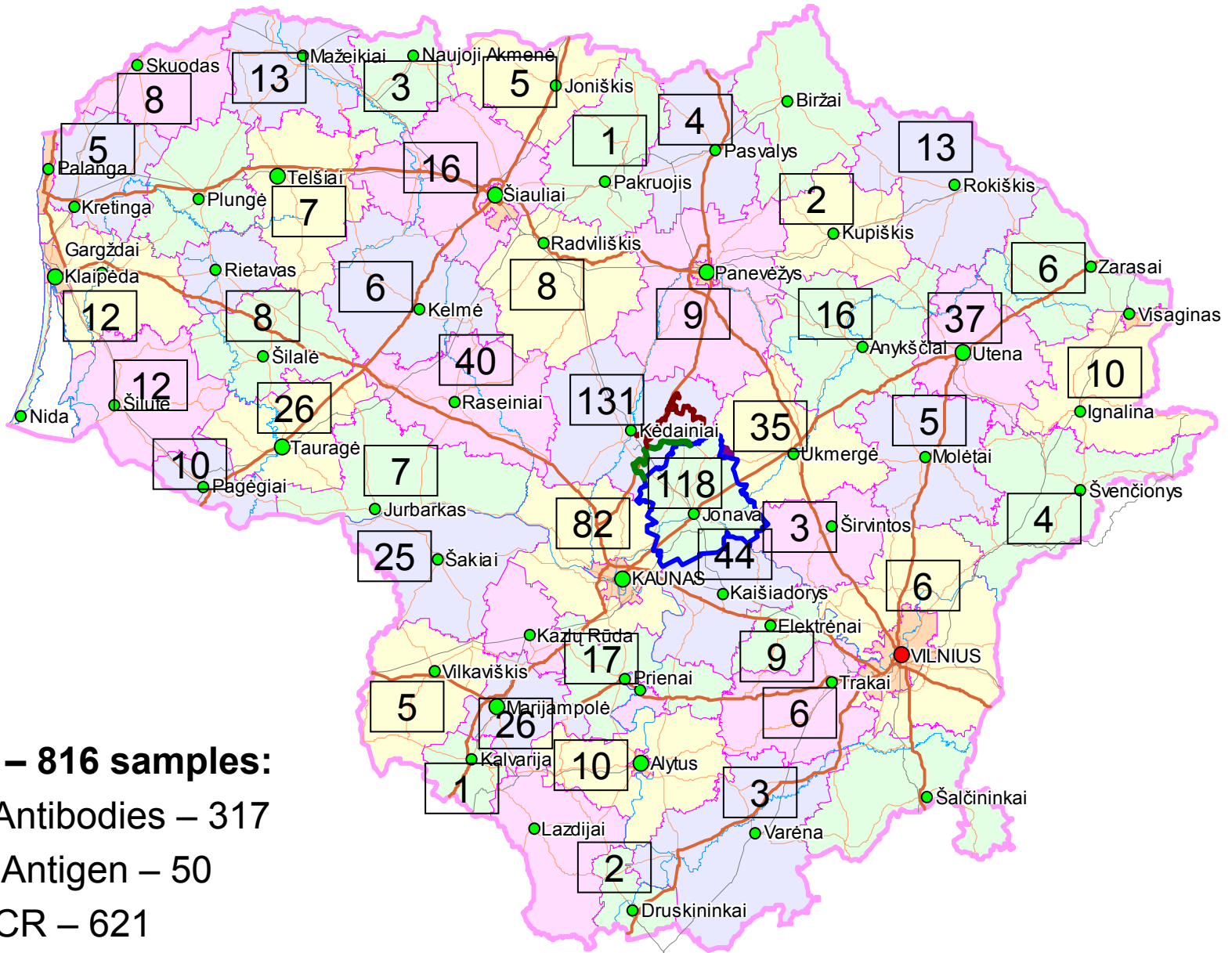
\* Tested from blood samples

\*\* Tested from organs (spleen, kidney, lymph nodes, tonsils)

From wild boars were sampled blood (if it was possible) and organs. From blood samples CSF antibodies were tested. If result was unclear (bad sample quality, doubtful reaction), samples were retested for CSF antigen. Organs were tested using RT-PCR. The number of tests differ because in some cases from the same wild boar were sampled blood and organs, in other cases – only blood or only organs.



# Wild boar sampling locations



**Total – 816 samples:**  
CSF Antibodies – 317  
CSF Antigen – 50  
RT-PCR – 621



# Hypothesis about virus introduction into **CSF/1/2011**

3. Virus persisted undetected in backyard farms...

**No evidence for this hypothesis**



# Examination of domestic pigs

Results of clinical and sample examination in the restriction zones of the primary outbreak during the period 1<sup>st</sup> June until 2<sup>nd</sup> July 2011

District	Restriction Zone	Pigs per holding	Pig holdings	Total pigs kept	Pig holdings inspected and pigs clinically examined	Pig holdings inspected and samples collected	Pigs tested against CSF antibodies	Pigs tested against CSF antigen	Samples tested by RT-PCR	Test results
Jonava	protection (3 km zone)	small farms***	35	102	35 / 102	35 / 102	91	91	91	All negative
		large farms****	0	0						
	surveillance (10 km zone + rest of the district)	small farms***	146	567	146 / 567	146 / 551*	531	230	317	All negative
		large farms****	4	18126	4 / 18126	4 / 853**	853	332	778	All negative
Kėdainiai	surveillance (10 km zone)	small farms***	27	82	27 / 82	27 / 82	29	-	53	All negative
		large farms****	0	0						
<b>TOTAL:</b>			<b>212</b>	<b>18877</b>	<b>212 / 18877</b>	<b>212 / 1588</b>	<b>1504</b>	<b>653</b>	<b>1239</b>	<b>All negative</b>

\* Samples taken from pigs older than two months

\*\* According Article 11 (3b) of Directive 2001/89/EC

\*\*\* In this category are falling all small farms, including back yard farms with less than 1000 pigs

\*\*\*\* This category contains the large industrial farms with more than 1000 pigs

# Hypothesis about virus introduction into **CSF/1/2011**

## 4. Introduction through transporting vehicles;



Loading/unloading  
area

# Hypothesis about virus introduction into **CSF/1/2011**

5. Human factor;

**Under investigation**

6. Vaccination with CSF vaccine

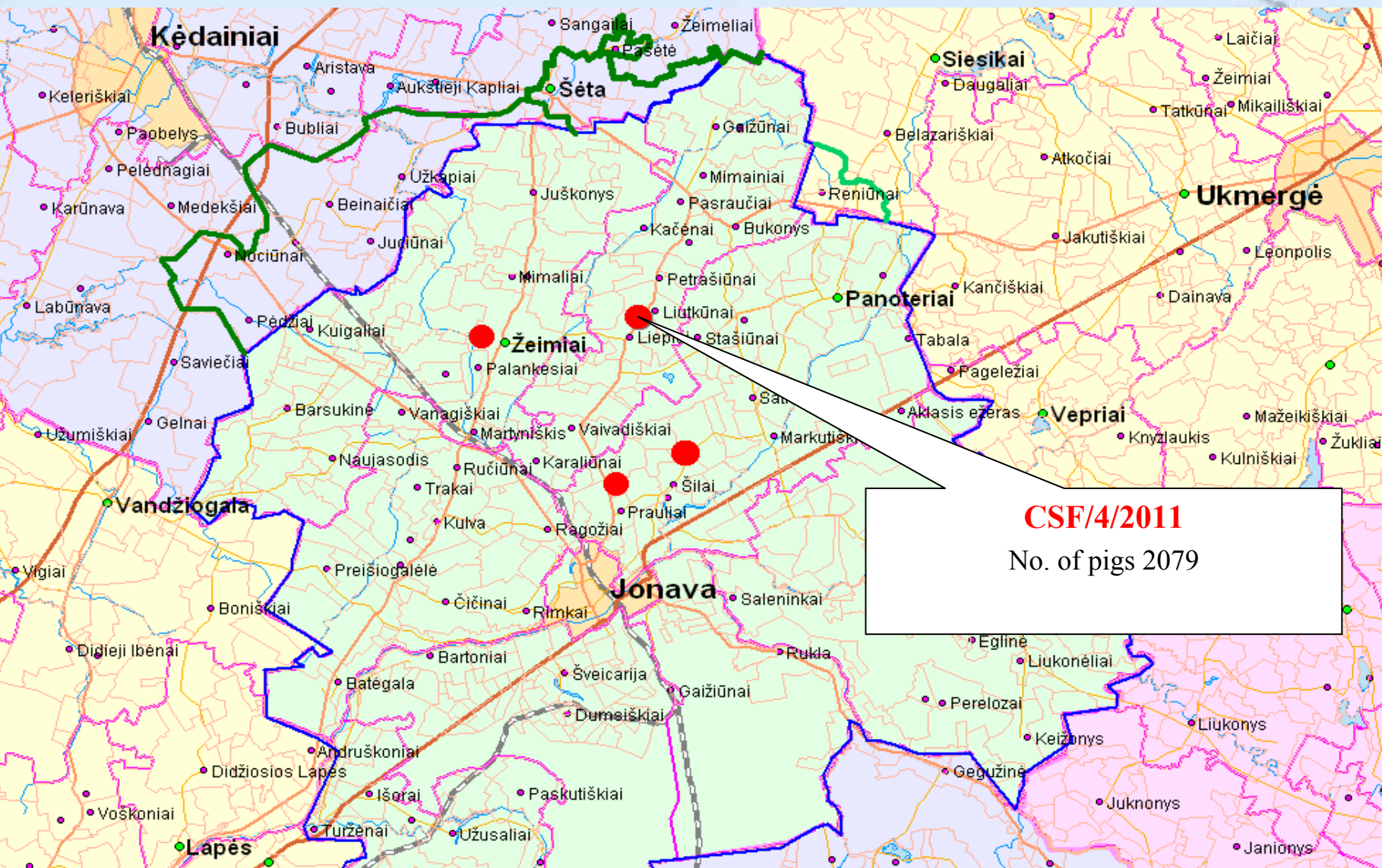
- **Excluded**



# Pigs culled (CSF/1-3/2011)

Category of pigs	Number
<b>Culled</b>	
UAB „Beržų kompleksas“ LT 40571400893, Jonavos r., Šilų sen., Šilų k.	
Piglets	3405
Fattening	8493
Fattening over 70kg.	1119
Sows	3232
Boars	5
<b>TOTAL</b>	<b>16254 / 943.48 t.</b>
UAB „Beržų kompleksas“ LT 40570600562, Jonavos r., Šilų sen., Praulių k.	
Fattening	1628
Fattening over 70kg.	1462
<b>TOTAL</b>	<b>3090 / 209.44 t.</b>
UAB „Beržų kompleksas“ LT 40552800042, Jonavos r., Žeimių sen., Blauzdžių k.	
Fattening	3445
Fattening over 70kg.	1197
<b>TOTAL</b>	<b>4642 / 231.78 t.</b>
<b>TOTAL (CSF/1-3/2011)</b>	<b>23986 / 1384.7 t.</b>

# Outbreak **CSF/4/2011** on 2<sup>nd</sup> of July 2011



# CSF/4/2011

- **General information:**

- On 28-06-2011 30 samples were routinely taken and tested for CSF: All negative.

- On 02-07-2011 several pigs showed respiratory symptoms and additional 68 samples were taken and tested.

**6 samples positive for CSF by ELISA Ag and RT-PCR .**

- The positive samples were sent to the Community Reference Laboratory for further investigation.

# Hypothesis about virus introduction into **CSF/4/2011**

1. Virus was introduced through transport (probable time of introduction - end of May);
2. Human factor;
3. Lack of bio security measures in place.

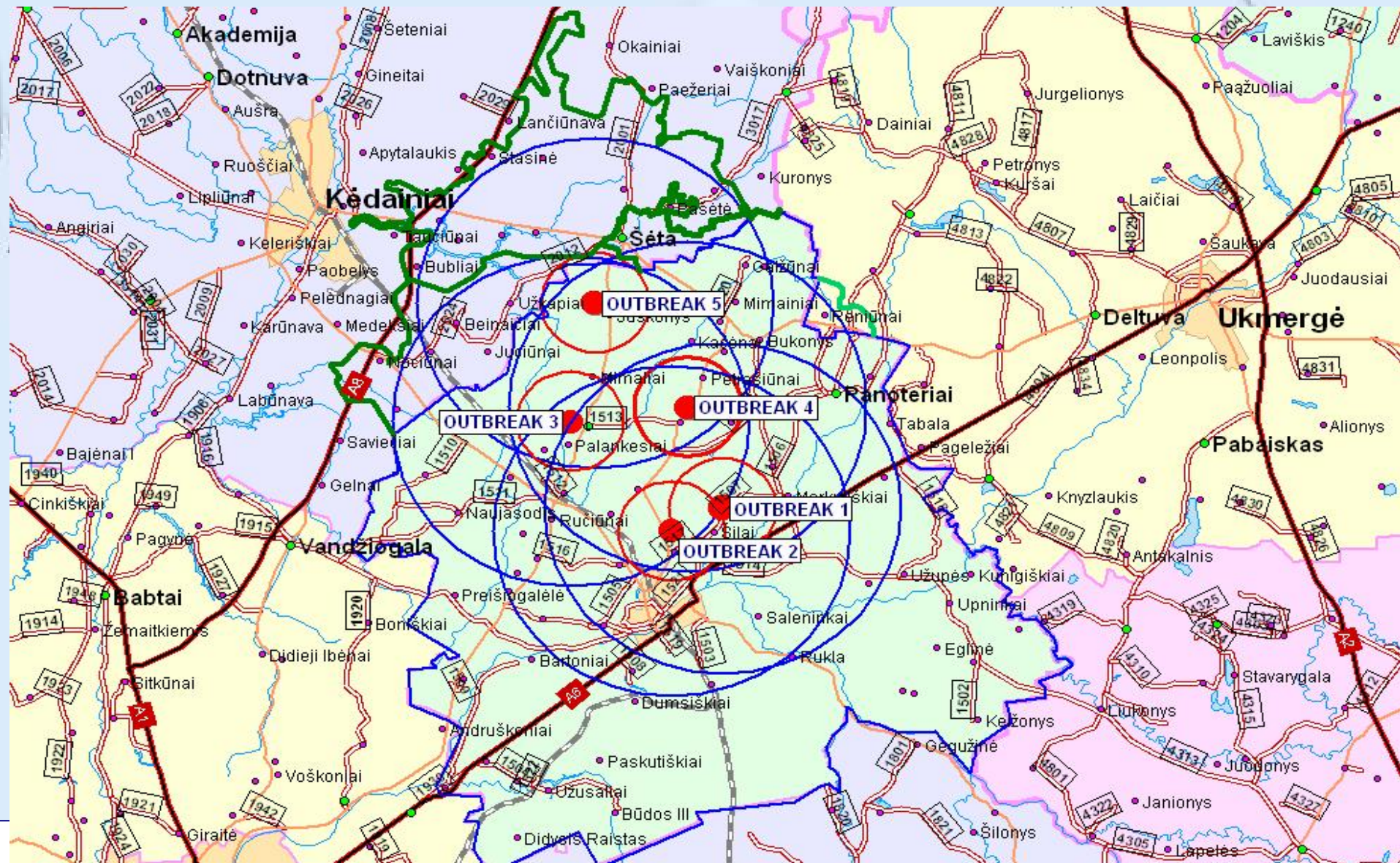


**Location of farm**

# Additional support

- 6-8 of July visit of Classical swine fever expert to assess the situation, actions taken by SFVS and further steps on eradication or the disease.

# Outbreak CSF/5/2011 on 8 of July 2011





## General Information: Laboratory investigations

### 5 June 2011

- Ab-ELISA: 323 negative, 3 doubtful (bad quality of samples)
- Ag-ELISA: all negative (109 samples)
- RT – PCR: all negative (299 samples)

### 7 June 2011

- 10 fattening pigs (3-6 month) with increased temperature ( $\geq 40,5^{\circ}\text{C}$ ).

### 8 June 2011

- All 10 pigs positive by RT-PCR.

# CSF/5/2011

- New 3 km protection and 10 km surveillance zones established and sampling started.
- The keepers were obligated to test the pigs and after receiving negative results permission given to slaughter for own consumption.
- Targeted sampling in Outbreak 5 conducted in order to clarify the possible date and source of virus introduction:
  - **Possible date of virus introduction – end of May;**
  - **Possible ways of infection –contacts with infected farms (CSF/1-3/2011)**



**Results of clinical and sample examination in the restriction zones of the secondary outbreak (Outbreak 4 on 2<sup>nd</sup> July and Outbreak 5 on 8<sup>th</sup> July) during the period 2<sup>nd</sup> July until 24<sup>th</sup> of July 2011**

District	Restriction Zone	Pigs per holding	Pig holdings	Total pigs kept	Pig holdings inspected and pigs clinically examined	Pig holdings inspected and samples collected	Pigs tested against CSF antibodies	Pigs tested against CSF antigen	Samples tested by RT-PCR	Test results
Jonava	protection (3 km zone)	small farms***	24	98	24 / 98	24 / 87*	87		49	All negative
		large farms****	0	0						
	surveillance (10 km zone + rest of the district)	small farms***	120	260	120 / 260	120 / 200*	200		31	All negative
		large farms****	2	3613	2 / 3613	2 / 288**	281	59	177	All negative
Kėdainiai	surveillance (10 km zone)	small farms***	108	240	108 / 240	108 / 240	156	9	109	
		large farms****	0	0						
Ukmergė	surveillance (10 km zone)	small farms***	1	4	1 / 4	1 / 4	4			All negative
		large farms****	0	0						
<b>TOTAL:</b>			<b>255</b>	<b>4215</b>	<b>255 / 4215</b>	<b>255 / 819</b>	<b>728</b>	<b>68</b>	<b>366</b>	<b>All negative</b>

\* Samples taken from pigs older than two months

\*\* According Article 11 (3b) of Directive 2001/89/EC

\*\*\* In this category are falling all small farms, including back yard farms with less than 1000 pigs

\*\*\*\* This category contains the large industrial farms with more than 1000 pigs



# Pigs culled (CSF/4-5/2011)

Pig	Number
<b>Culled</b>	
UAB „Miva“ LT 40546301080 Jonavos r., Bukonių sen., Liutkūnų k.	
Piglets	754
Fattening over 70kg.	1118
Sows	173
Newborn piglets	34
<b>TOTAL</b>	<b>2079 / 124.6 t.</b>
Pauliuku ŽŪB LT 40553301417 Jonavos r., Žeimių sen., Juškonių sen.	
Piglets	1744
Fattenings	3227
Breeding sows	404
Fattening over 70kg.	6686
Sows	853
Newborn piglets	131
<b>TOTAL</b>	<b>13045 / 730.42 t.</b>
<b>TOTAL IN CSF/1-5/2011</b>	<b>39110 / 2239.72 t.</b>



**Results of clinical and sample examination in the surveillance zone from 7 August (after 20 days after cleaning and disinfection of the last outbreak (Outbreak 5)) and in protection zone from 17 August (after 30 days after cleaning and disinfection of the last outbreak (Outbreak 5)) according Article 11 (3b) and 10 (4b) of Directive 2001/89/EC**

District	Restriction Zone	Pigs per holding	Pig holdings	Total pigs kept	Pig holdings inspected and pigs clinically examined	Pig holdings inspected and samples collected	Pigs tested against CSF antibodies and samples tested by RT-PCR	Test results
Jonava	protection (3 km zone)	small farms***	40	139	40 / 139	40 / 113*	113	All negative
		large farms****	0	0	0	0	0	
	surveillance (10 km zone and rest of the district)	small farms***	136	755	136 / 755	136 / 446*	446	All negative
		large farms****	1	1744	1 / 1744	1 / 68**	68	All negative
Kėdainiai	surveillance (10 km zone)	small farms***	108	294	108 / 294	108 / 294	294	All negative
		large farms****	0	0	0	0	0	
Ukmergė	surveillance (10 km zone)	small farms***	1	4	1 / 4	1 / 4	4	All negative
		large farms****	0	0	0	0	0	
<b>TOTAL:</b>			<b>286</b>	<b>2936</b>	<b>286 / 2936</b>	<b>286 / 925</b>	<b>925</b>	All negative

\* Samples taken from pigs older than two months

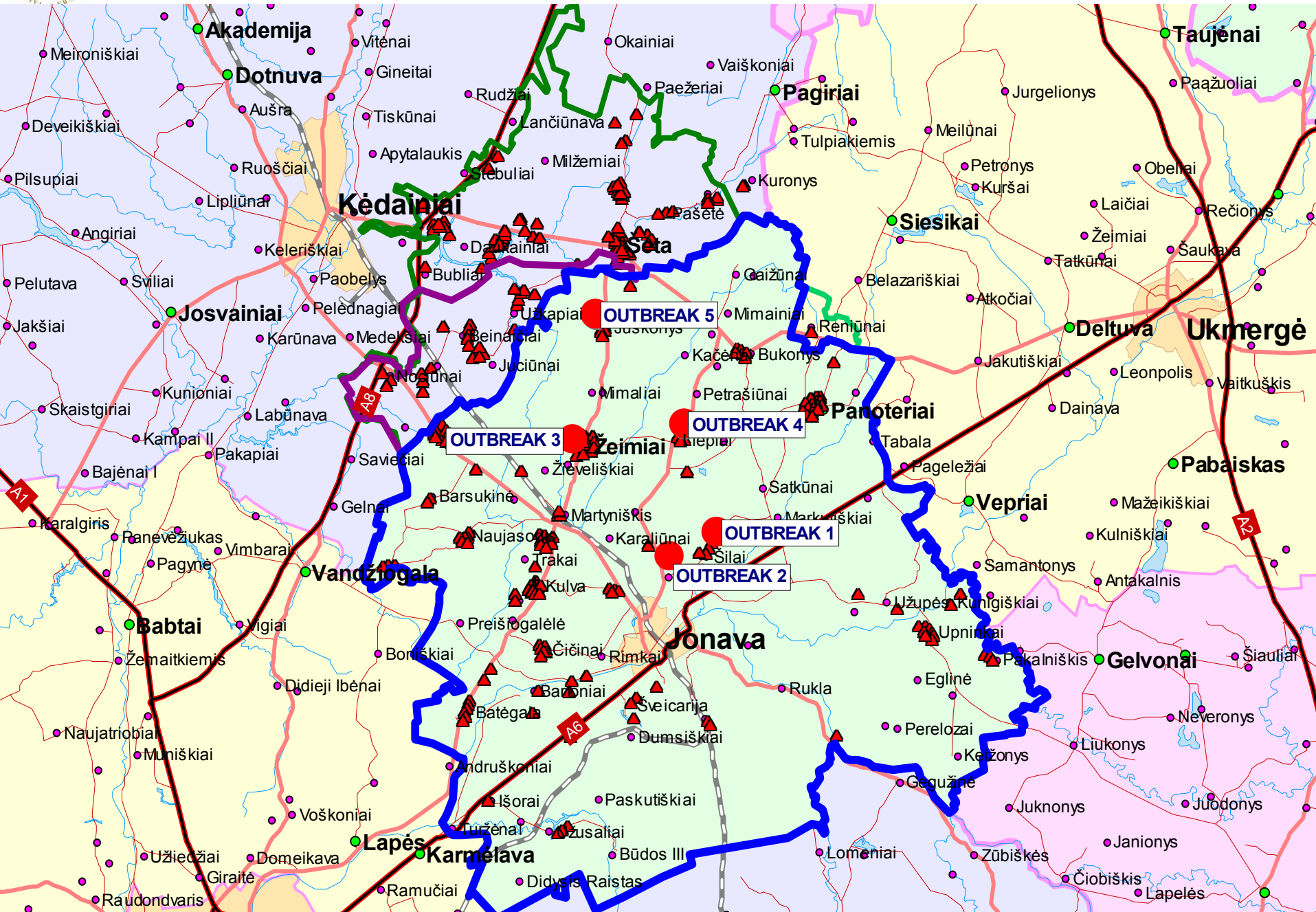
\*\* According Article 11 (3b) of Directive 2001/89/EC

\*\*\* In this category are falling all small farms, including back yard farms with less than 1000 pigs

\*\*\*\* This category contains the large industrial farms with more than 1000 pigs



# Pig holdings location within the restricted zones





**Results of clinical and sample examination in the restriction zones from 27 August (40 days after cleaning and disinfection of the last outbreak (Outbreak 5)) according to Article 12 of Commission Decision 2011/508/EC**

District	Restriction Zone	Pigs per holding	Pig holdings	Total pigs kept	Pig holdings inspected and pigs clinically examined	Pig holdings inspected and samples collected	Pigs tested against CSF antibodies	Samples tested by RT-PCR	Test results
Jonava	protection (3 km zone)	small farms***	38	170	38 / 170	38 / 125*	125	125	All negative
		large farms****	0	0					
	surveillance (10 km zone - rest of the district)	small farms***	136	720	136 / 720	136 / 487*	487	487	All negative
		large farms****	1	1744	1 / 1744	1 / 67**	46	67	All negative
Kėdainiai	surveillance (10 km zone)	small farms***	107	278	107 / 278	107 / 278	278	278	All negative
		large farms****	0	0	0	0	0	0	-
Ukmergė	surveillance (10 km zone)	small farms***	1	4	1 / 4	1 / 4	4	4	All negative
		large farms****	0	0	0	0	0	0	-
<b>TOTAL:</b>			<b>283</b>	<b>2916</b>	<b>283 / 2916</b>	<b>283 / 961</b>	<b>940</b>	<b>961</b>	<b>All negative</b>

\* Samples taken from pigs older than two months

\*\* According Article 11 (3b) of Directive 2001/89/EC

\*\*\* In this category are falling all small farms, including back yard farms with less than 1000 pigs

\*\*\*\* This category contains the large industrial farms with more than 1000 pigs

# Actions taken

- Bio security measures strengthened by the new Order of the Director of SFVS;
- All territorial SFVS informed pig keepers and additional inspection have been carried out in all pig holdings in order to check bio security measures;
- All information about CSF prevention and bio security measures publicized through mass media;
- New rules for transport cleaning and disinfection are drafted and will be approved by the Order of the Director of SFVS;
- The sampling from wild boars is ongoing in the whole territory of Lithuania;
- Additional program for CSF surveillance is foreseen.



Valstybinė maisto ir veterinarijos tarnyba  
State Food and Veterinary Service

***Thank you for your attention***