

African Swine Fever

*Pesti Porcine Africaine,
Peste Porcina Africana,
Maladie de Montgomery*

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Species Affected

- Domestic pigs
- Feral swine
- Wild pigs
 - Eurasian wild boars
 - Warthogs (reservoir)
 - Bush pigs (reservoir)
 - Giant forest hogs



European boar



warthog

bush pig

African Swine Fever Virus

- Asfarviridae: *Asfivirus*
 - Large, enveloped DNA virus
 - Only arbo-DNA virus
- More than 20 genotypes (23)
 - Vary in virulence
 - High virulence: up to 100% mortality
 - Low virulence: seroconversion
- Infects monocytes and macrophages



GENOTYPE I



GENOTYPE II



GENOTYPE III



GENOTYPE IV



GENOTYPE V



GENOTYPE VI



GENOTYPE VII



GENOTYPE VIII



GENOTYPE IX



GENOTYPE X



GENOTYPE XI



GENOTYPE XII



GENOTYPE XIII



GENOTYPE XIV



GENOTYPE XV



GENOTYPE XVI



GENOTYPE XVII



GENOTYPE XVIII



GENOTYPE XIX



GENOTYPE XX



GENOTYPE XXI



GENOTYPE XXII



African Swine Fever Virus

- Highly resistant in environment, especially at lower temperatures
- Survival
 - Several days in feces
 - Month(s) in contaminated pens
 - Up to 18 months in blood
 - Over 140 days in some pork products
 - Salted dried hams
 - Years in frozen carcasses

History

- **1921:** Discovered in Kenya
 - Today: endemic in most of sub-Saharan Africa including the island of Madagascar



History

- 1957: First occurrence outside Africa
 - Portugal
- 1960s:
Portugal and Spain
- 1970-1980s:
Spread to Europe
 - The Netherlands,
Italy, France, Belgium
- 1990s: Disease eradicated
- Remains endemic on the Island of Sardinia



History: Tick Vector

- 1963: Virus isolated from soft tick
 - *Ornithodoros erraticus*
- 1971: Western Hemisphere
 - Cuba, the Dominican Republic, Haiti, Brazil
 - Eradicated



History

- **2007:** Republic of Georgia
 - Spread in Caucasus Region (Eurasia), including Russia Federation
- **2015:** Eastern Europe
 - Lithuania, Latvia, Poland, Romania
 - Wild boar in Iran

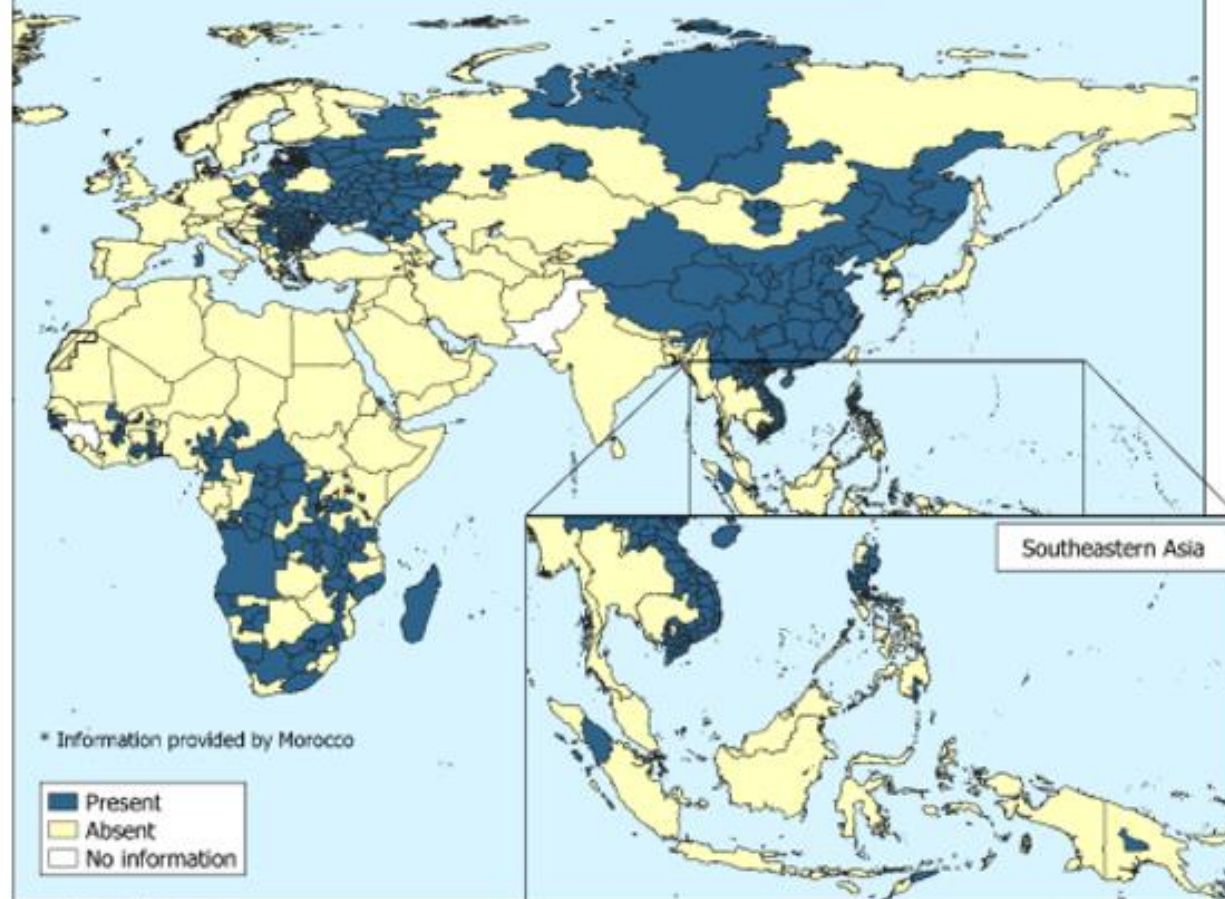


2018 Outbreaks

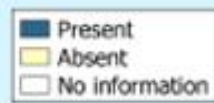
- China: First time reported, domestic pigs
- Belgium: Wild boars
- Hungary, Estonia, Latvia, Lithuania, Russia, Poland, Ukraine, Bulgaria, Romania



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* Information provided by Morocco



Region	Swine				Wild boar				Total Outbreaks	Total Cases
	Outbreaks	Susceptible	Cases	Losses**	Outbreaks	Susceptible	Cases	Losses**		
Africa	128	213 795	61 459	85 539					128	61 459
Asia	9 928	8 107 951	115 309	6 733 791	631	NA	1 121		10 559	116 430
Europe	4 271	1 859 480	625 269	1 383 372	17 307	NA	29 513		21 578	654 809
Total	14 327	10 181 226	802 064	8 202 702	17 938	NA	30 634	0	32 265	832 698

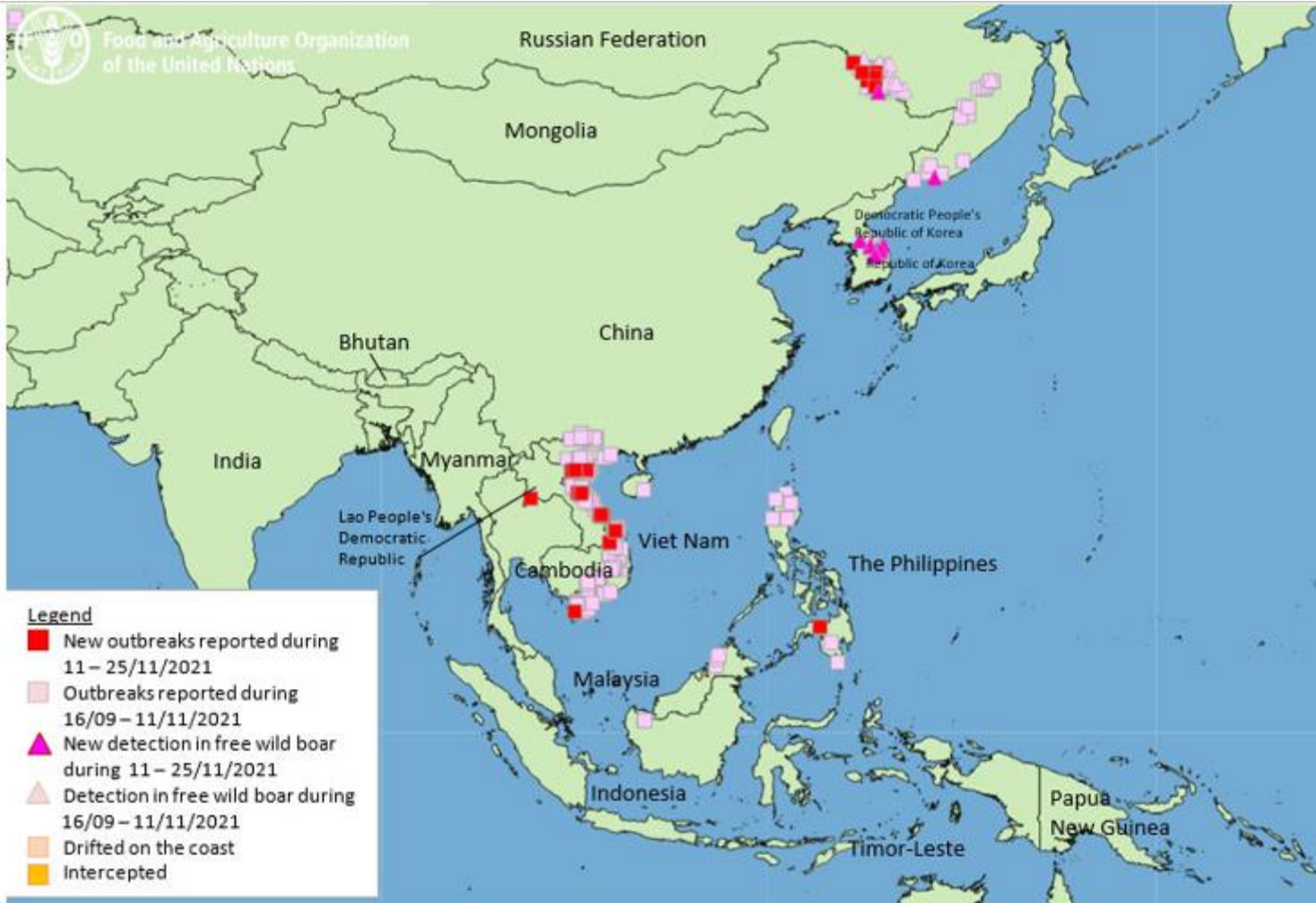
Table 1. Impact of ASF by region based on the information submitted through the Early Warning System (2016-2020).



<https://wahis.oie.int/#/dashboards/qd-dashboard>

ASF in Asia and the Pacific

- China (Aug 2018)
- Mongolia (Jan 2019)
- Vietnam (Feb 2019)
- Cambodia (March 2019)
- Hong Kong (May 2019)
- Democratic People's Republic of Korea (May 2019)
- Lao People's Democratic Republic (Jun 2019)
- Myanmar (Aug 2019 The Philippines) (Jul 2019)
- Republic of Korea (Sep 2019)
- TimorLeste (Sep 2019)
- Indonesia (Nov Papua 2019 2019)
- New Guinea (Mar 2020)
- India (May 2020)
- Malaysia (Feb 2021)
- Buthan (May 2021)



ASF in the EU in 2014-2021

1. **Lithuania** (1/2014)
2. **Poland** (1/2014)
3. **Latvia** (6/2014)
4. **Estonia** (7/2015)- 1 single outbreak in 2021 after 3 years
5. **Romania** (7/2017)
6. **Hungary** (4/2018) – only in wild boar
7. **Bulgaria** (6/2018)
8. **Slovakia** (7/2019)
9. **Greece** (2/2020) – only one outbreak in pigs
10. **Germany** (9/2020) –close to PL border
11. **Sardinia, IT** – unrelated epidemiological situation

Czechia – 6/2017, free from ASF since 02/2019

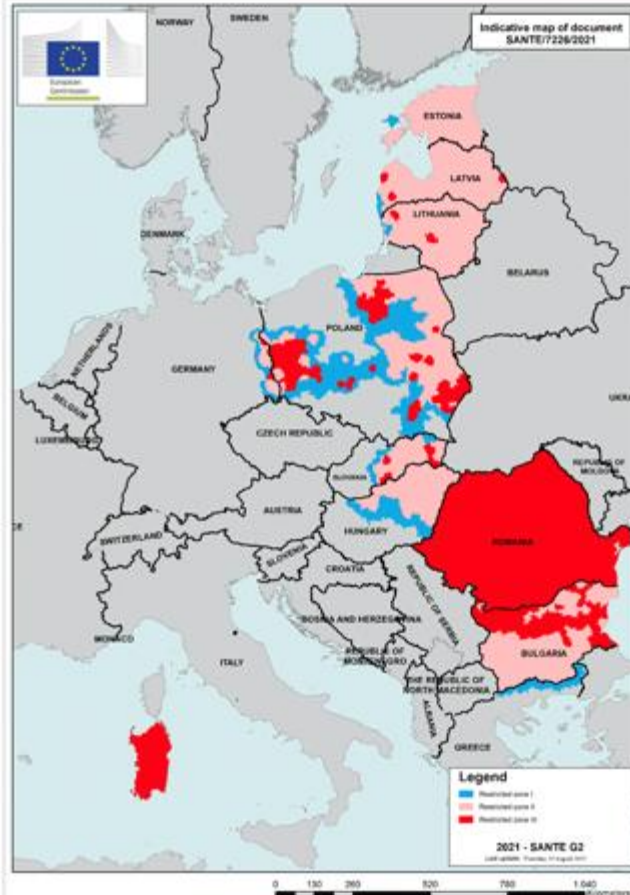
Belgium – 9/2018, free from ASF since 11/2020



ASF in the EU: 2019-2021

* ADIS – Animal Diseases Notification System

No	ADIS* data up to 27/8/2021	2019		2020		2021	
		Cases wild boar	Outbreaks domestic pigs	Cases wild boar	Outbreaks domestic pigs	Cases wild boar	Outbreaks domestic pigs
1.	POLAND	2477	48	4156	103	2147	71
2.	LITHUANIA	464	19	230	3	102	-
3.	LATVIA	369	1	320	3	195	2
4.	ESTONIA	80	-	68	-	44	1
5.	ROMANIA	693	1728	906	1060	850	1119
6.	HUNGARY	1605	-	4052	-	2499	-
7.	BULGARIA	165	44	533	19	194	4
8.	BELGIUM	482	-	3	-	-	-
9.	ITALY (Sardinia)	63	1	42	-	5	-
10.	SLOVAKIA	27	11	388	17	1380	7
11.	GREECE	-	-	-	1	-	-
12.	GERMANY	-	-	403	-	1466	3
TOTAL		6425	1852	11101	1206	8884	1207



EU zoning measures for ASF

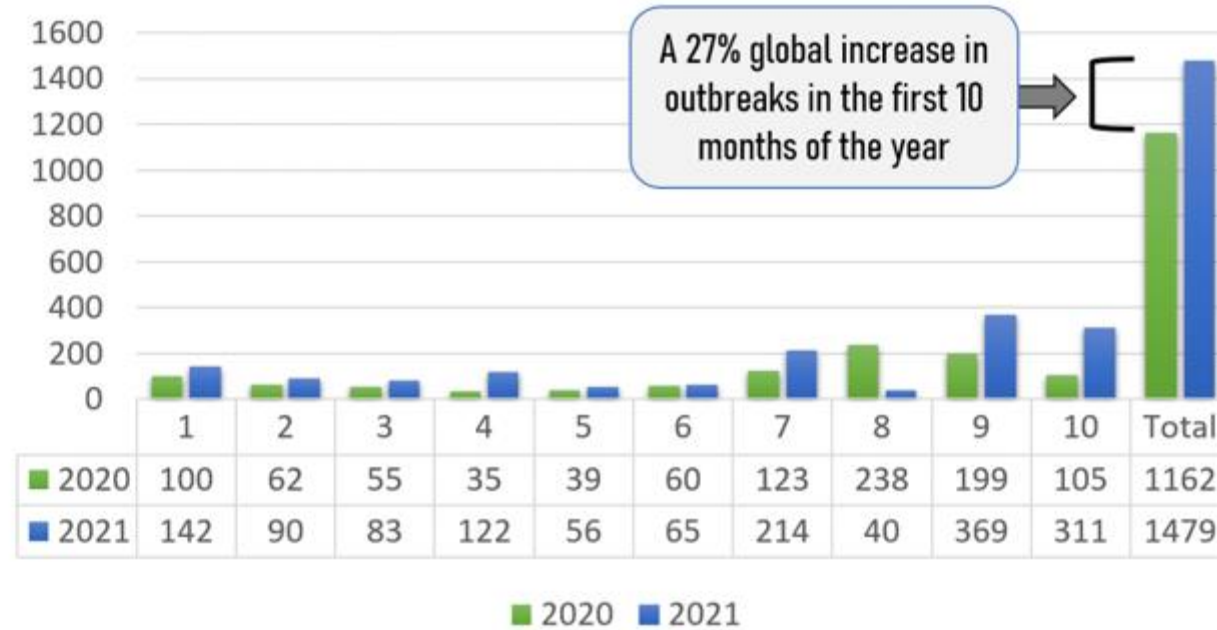
In line with
OIE!

From 21 April 2021:

New Implementing Regulation

- Restricted zone I ('an additional further restricted zone') – zone, bordering zone II or III, where relevant (no ASF)
- Restricted zone II ('an infected zone') – ASF in wild boar
- Restricted zone III ('a further restricted zone', in addition to PZ/SZ) – ASF in domestic pigs (with or without ASF in wild boar)

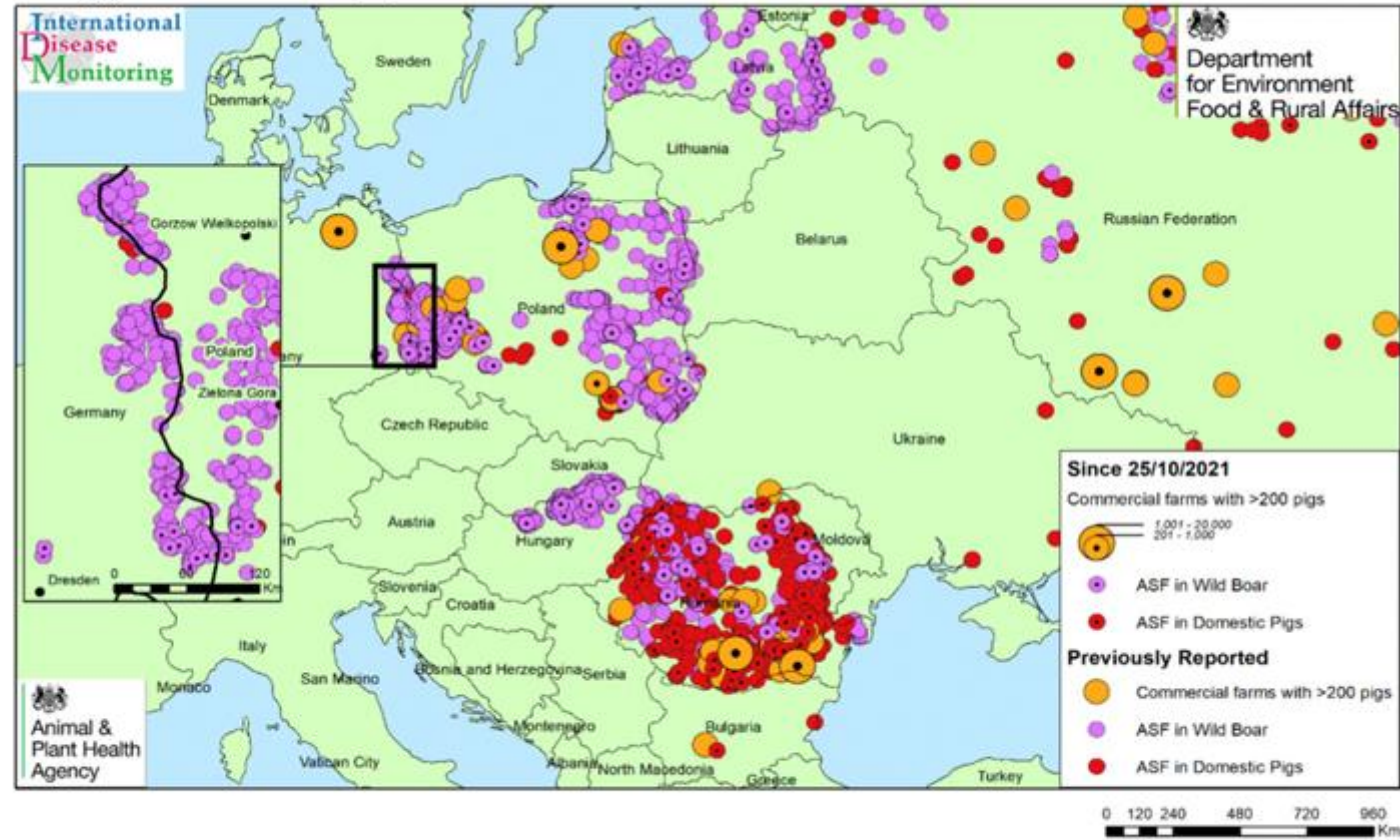
Domestic Pig Outbreaks 2020 - 2021 in Eastern Europe



Graphic 1. ASF outbreaks in domestic pigs across Eastern Europe. Comparative 2020 - 2021. (Source: ADIS).

<https://www.swinehealth.org/global-disease-surveillance-reports/>

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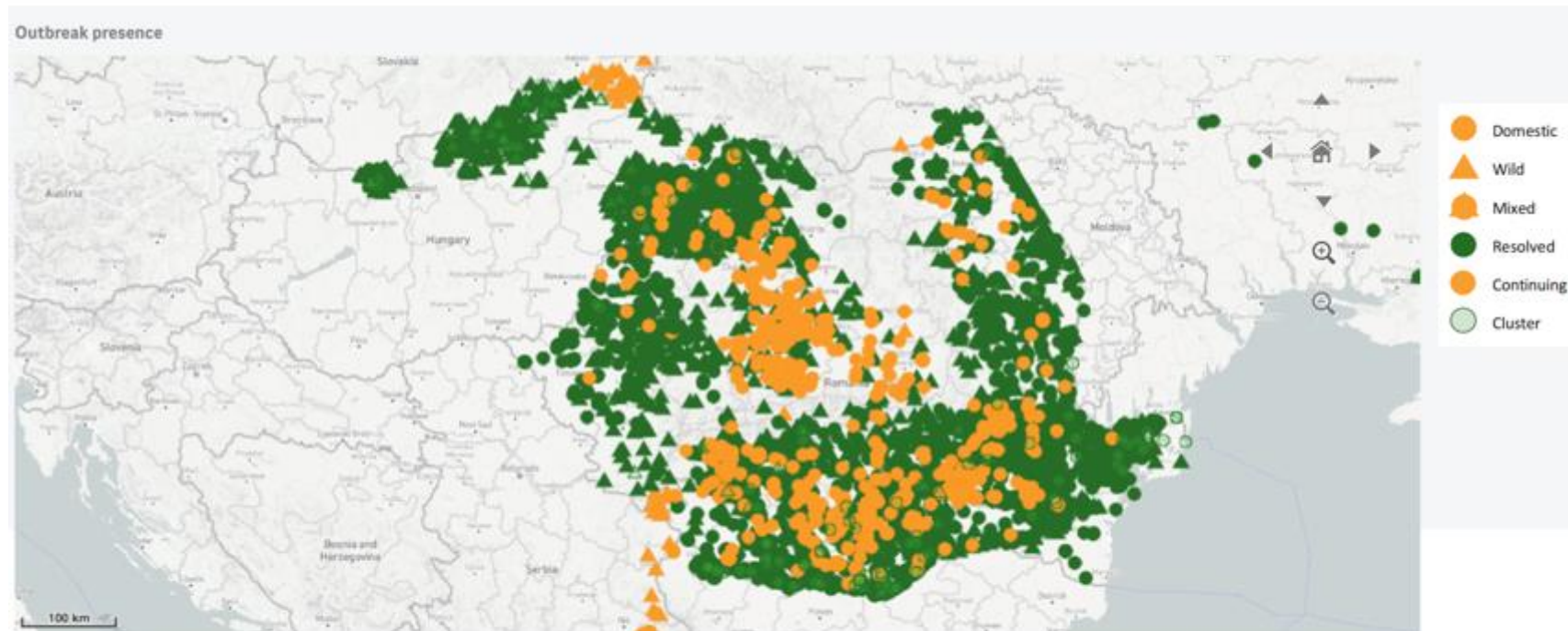
Map 1. Distribution of outbreaks in Europe 2021- Map prepared by International Disease Monitoring group (IDM), Animal & Plant Health Agency, (DEFRA-UK).

Outbreak presence

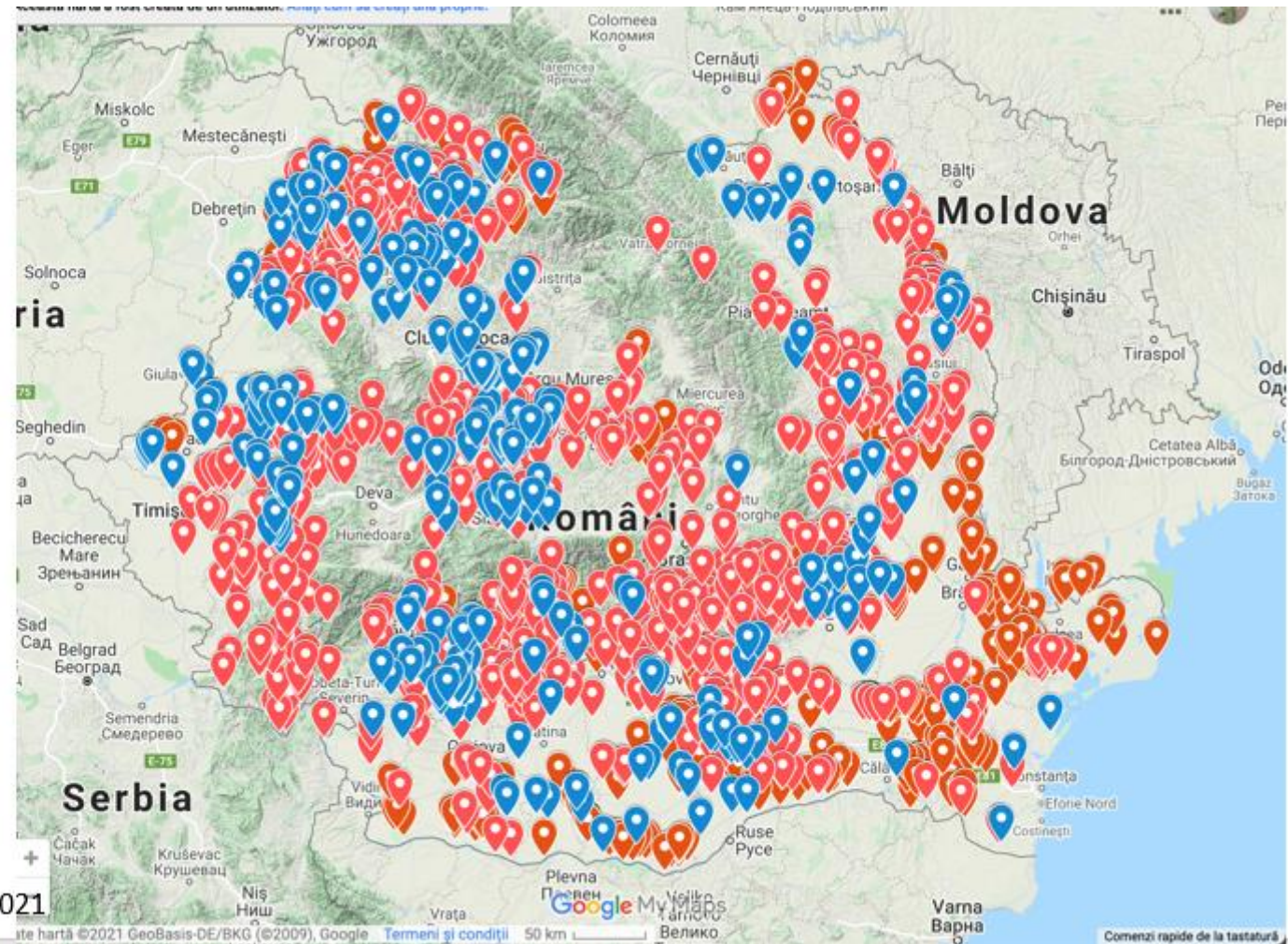


Outbreak locations have been provided by the relevant Veterinary Services and may not represent the exact location of an outbreak. OIE assumes no liability for the data displayed. Administrative borders displayed on the map are the most recent geographical boundaries. Administrative borders visualization does not adapt to the year(s) selected in the filters and may generate inconsistencies if administrative divisions changed in the period 2005 - 2019. If you are interested in consulting the information from early warning reports against the evolution of historical borders, please refer to the maps in sections other than the analytics section.

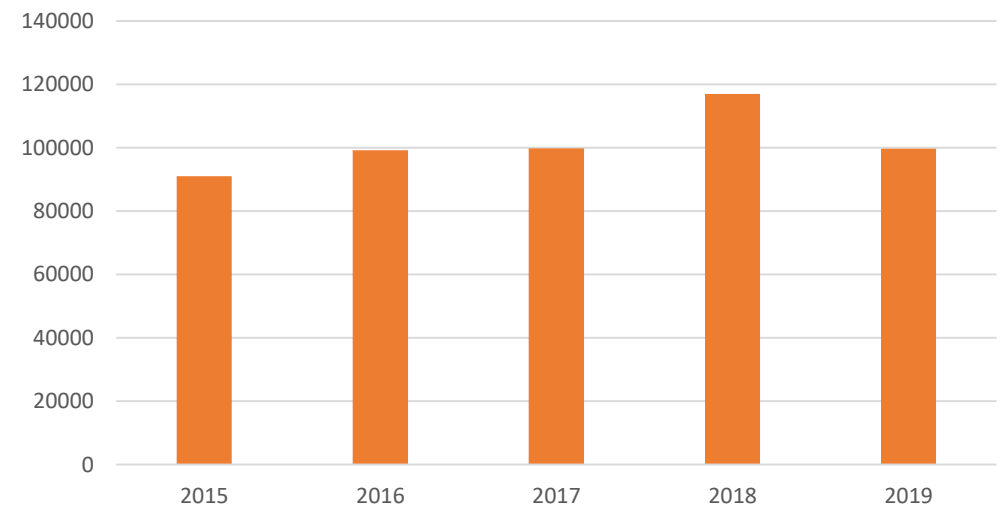
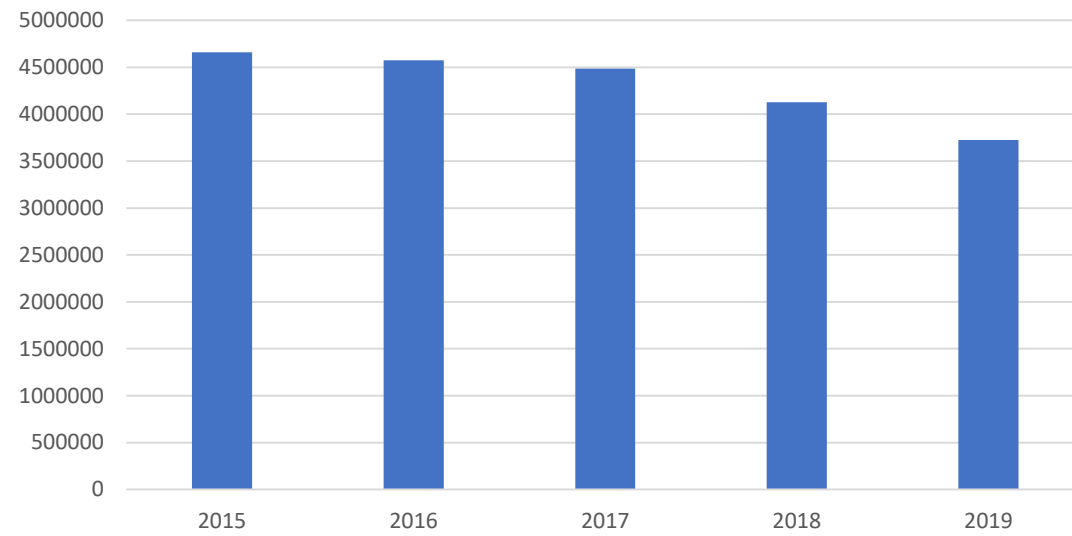
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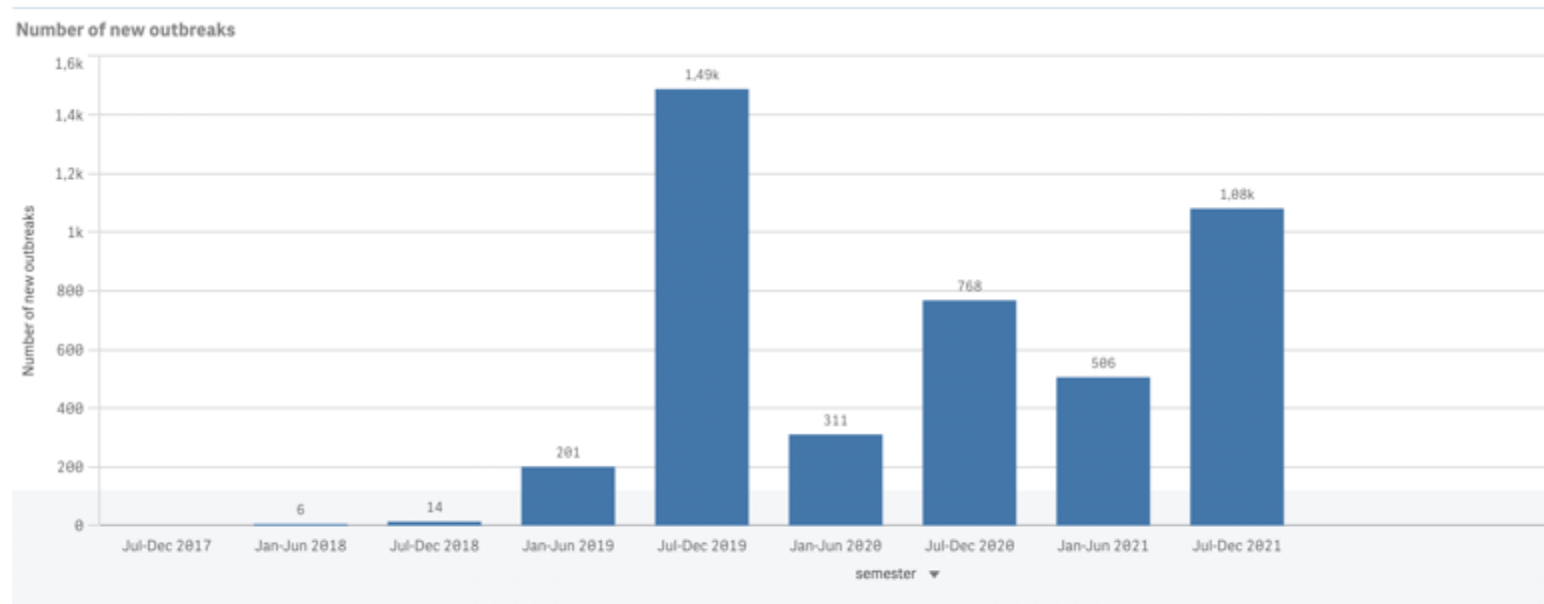


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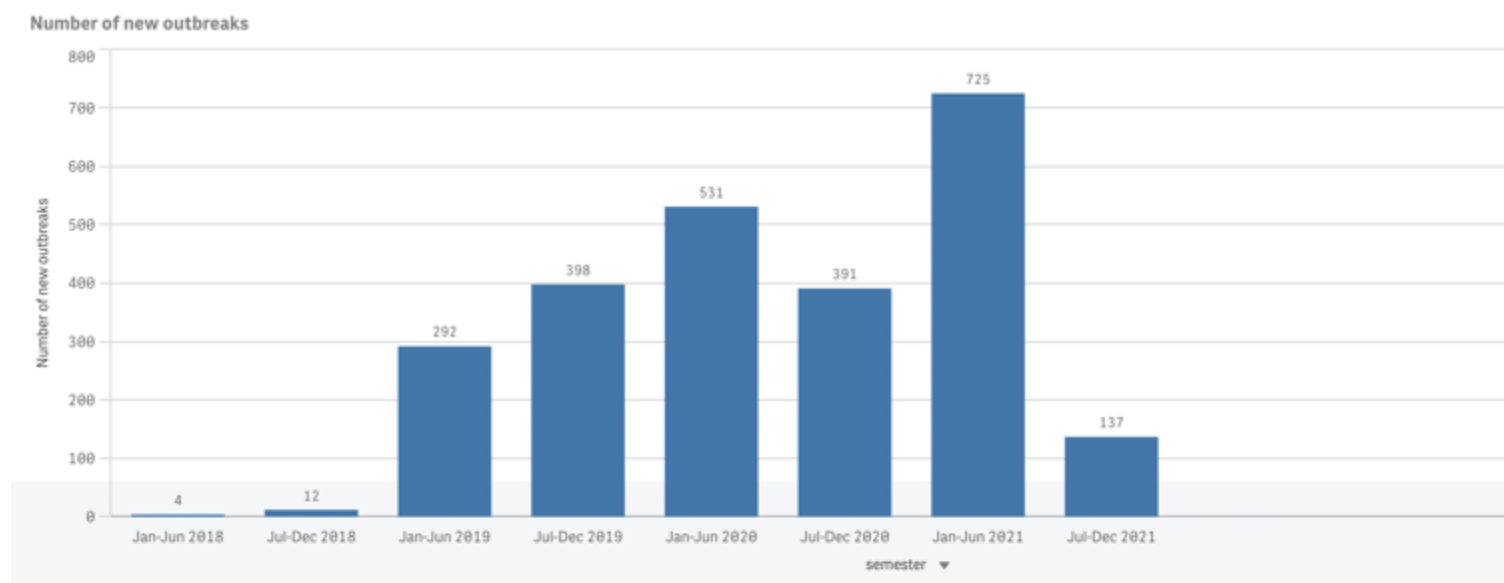
he ASF outbreaks in nov. 2021





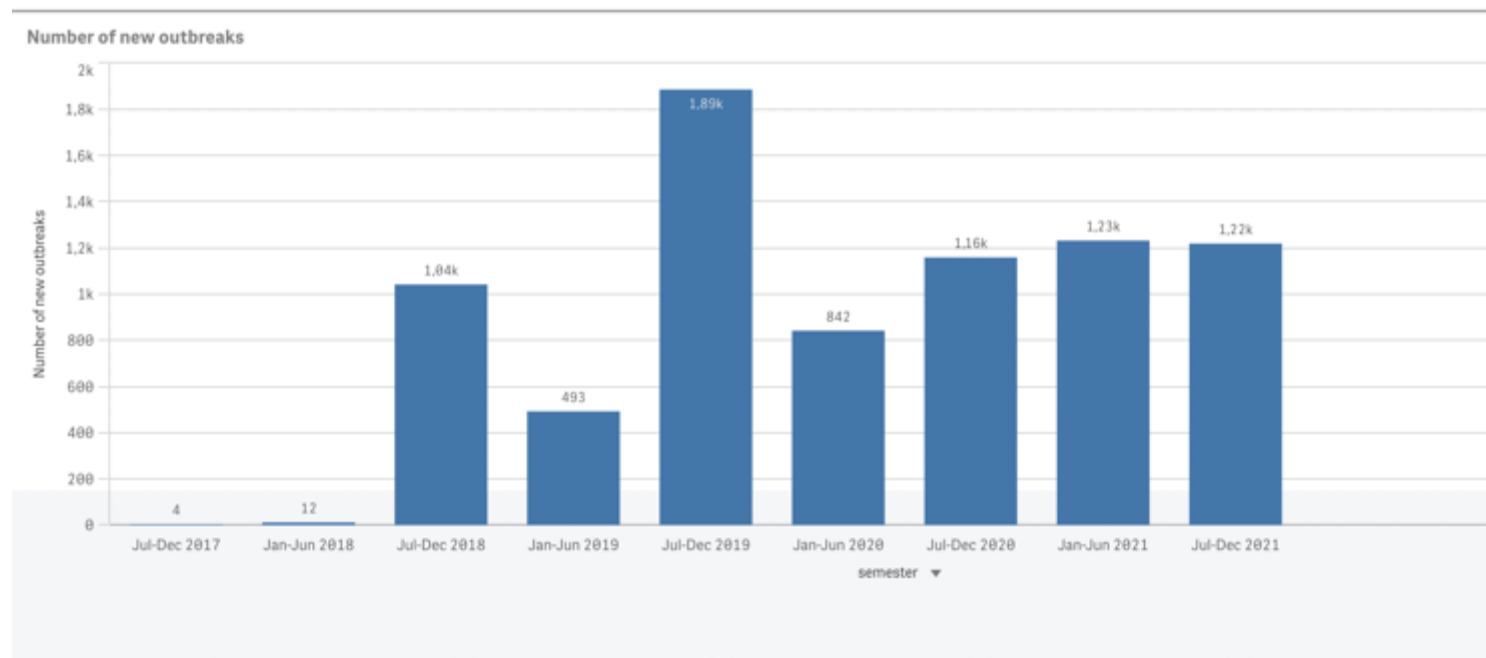
Number of new outbreaks in domestic pigs (2017-2021) - Romania

<https://wahis.oie.int/#/dashboards/qd-dashboard>



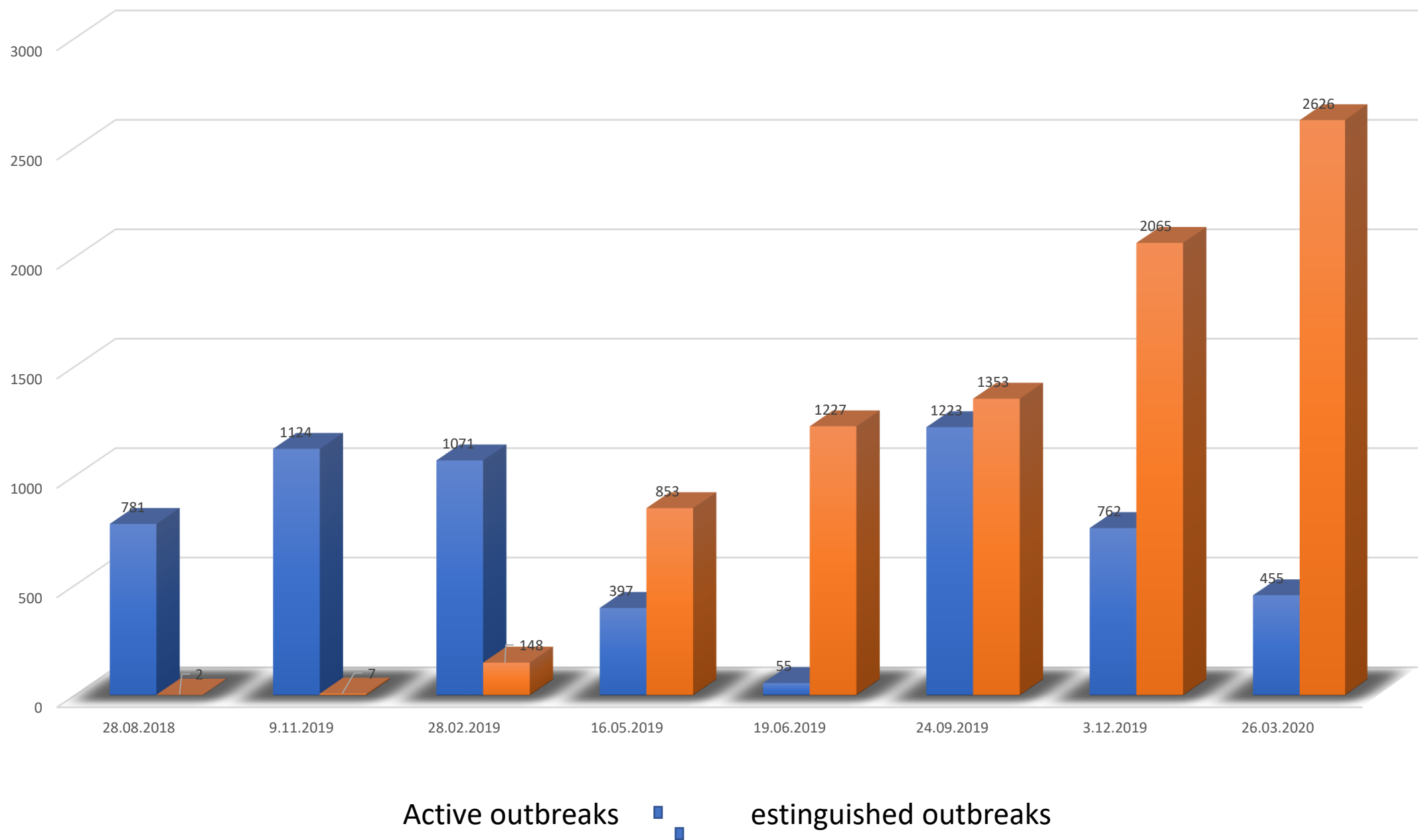
Number of new outbreaks in wild boars (2017-2021) - Romania

<https://wahis.oie.int/#/dashboards/qd-dashboard>

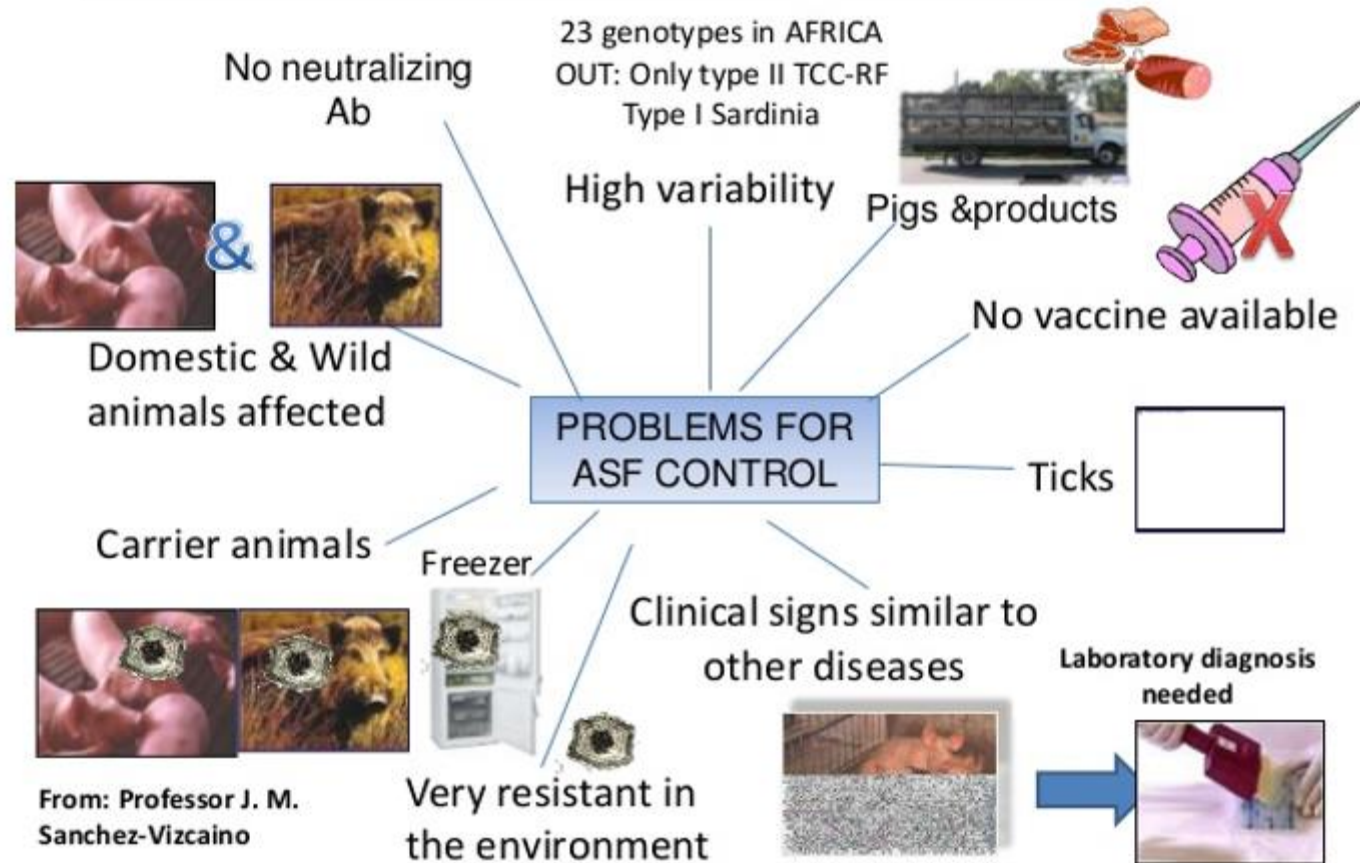


Number of new outbreaks in domestic pigs and wild boars (2017-2021) - Romania

<https://wahis.oie.int/#/dashboards/qd-dashboard>



African Swine Fever: Some Important Points



Thank you for your attention !!



Center for Food Security and Public Health, Iowa State