

Updated Outbreak Assessment France #2

14 February 2024

Aujeszky's disease in pigs in France

Disease report

On 1 February 2024, the World Organisation for Animal Health received a report of Aujeszky's disease (AD) on a domestic pig farm in northern France (WOAH 2024). The pig farm was located in Macquigny, Hauts-de-France, approximately 40km from the Belgian border (**Figure 1**). Since our previous report ([Aujeszky's disease in pigs in the south of France](#)), dated 7 February 2023, there have also been an additional four reports of AD in domestic pigs and captive wild boar in southern France. These include two outbreaks on domestic pig farms in Provence-Alpes-Côte d'Azur, one in Entrepierres in September 2023 and another in Villars in December 2023. The disease was also reported in captive wild boar in Blesle, Auvergne-Rhône-Alpes, in October 2023, which was followed by an outbreak on a domestic pig farm in Musculdy, Nouvelle-Aquitaine, on 25 January 2024. The affected premises contained between 23 and 200 animals.

In response to the latest AD reports, the French authorities have implemented zoning, movement controls and surveillance of domestic pigs within the restricted areas (WOAH, 2024). Stamping out of affected herds has also been carried out. The authorities continue to enforce biosecurity measures introduced by the Ministerial Biosecurity Order of 16 October 2018, such as installation of barriers on farms to prevent contact between domestic pigs and wild and farmed wild boar, as well as reinforcing an existing ban on feeding kitchen or hunting waste to porcine animals (Boubet, 2023).

The EU's Animal Disease Information System (ADIS, 2023) also reported a single outbreak of AD in Poland on 29 September 2023. No further information is available about this outbreak, which has not yet been reported by WOAH.

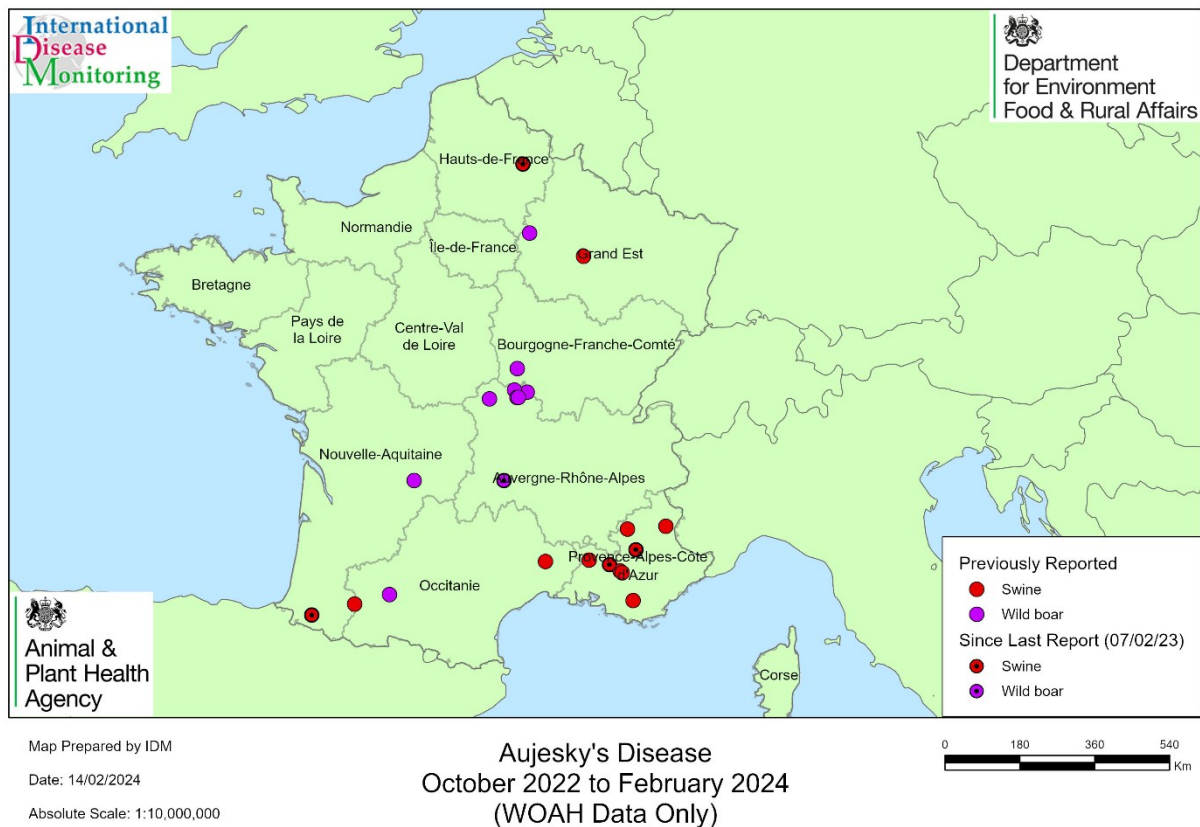


Figure 1. Aujeszky’s disease reports by WOAHA between October 2022 and 14 February 2024.

Situation assessment

Aujeszky’s Disease is a notifiable disease of pigs, caused by a herpesvirus. It is characterised by the appearance of nervous signs and death in piglets, respiratory disease and stunting in growing pigs, and abortion in adult pigs. The disease cycles in breeding herds and can spread to young pigs in finishing herds (Wittmann, 1986). Aujeszky’s disease virus (ADV) also infects a range of other species, including cattle, dogs and cats (Bo and Li, 2022). However, ADV-infected pigs are the main source of viral spread.

Other species are less important in viral spread, since there is usually 100% mortality, resulting in interrupted spread (Wittmann, 1986). The disease is widely distributed. In addition to Europe, AD is also known to occur in parts of Asia, Central and South America and Africa (CFSPH, 2017). ADV is carried in live animals and is generally spread by direct contact between pigs, although it can also be spread through fomites, semen and aerosols.

Wind-borne infection can occur in areas where there is a high density of pigs and pig farms (Pejsak and Truszczynski 2006). It has been suggested that 7 of the 11 outbreaks of AD that occurred in Yorkshire in the early 1980’s could have resulted from airborne spread (Gloster et al. 1984). There is some uncertainty over the limits of airborne spread of ADV (Hu et al., 2023). However, AD was reported to spread 15 to 40km from northern Germany to Denmark and, in one case, as far as 80km (Christiansen et al, 1990, 1993).

Pig densities across Europe, as well as recent AD outbreaks in France, are shown in **Figure 2**.

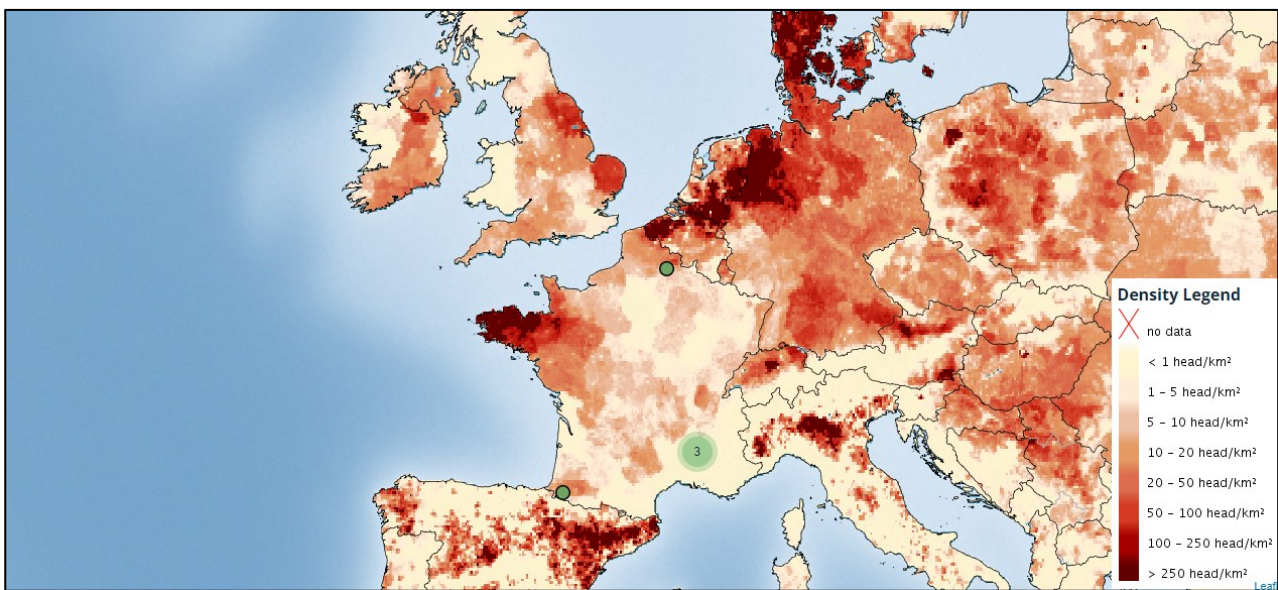


Figure 2. Map showing the density of domestic pigs in Europe as of 2015. Reports of AD between 7 February 2023 and 14 February 2024 are indicated in green (FAO, 2015).

France has reported sporadic cases of AD over recent years. However, France is listed as free from AD and despite these cases in domestic pigs and wild boar, their freedom status is maintained, as occasional cases do not affect disease-free status. According to the WOAHP guidelines, the herd prevalence rate in the country must not exceed 1% for the last 3 years. The International Disease Monitoring and UK Office for SPS Trade Assurance teams are closely monitoring the situation and may amend the third country listings as needed.

Based on the main routes of transmission for AD, the most likely routes by which the disease would enter the country would be through importation of live pigs or semen (CFSPH, 2017, Zheng et al., 2022). This could occur if AD were to be reintroduced into a trading partner with disease free status without being detected at the time of export. In the last six months, there have been no live pig imports from France or Poland. There have been no consignments of porcine germplasm from France and only one consignment from Poland in the last six months.

Conclusions

In Great Britain, the last recorded outbreak of AD occurred in 1989. Officially Free status from AD was gained in 1991, with no disease present in domestic pigs or wildlife and no use of vaccination (Defra, 2023). The most important entry route into countries free from AD is via the importation of live pigs and semen and free movement of wild boar from areas where the disease is present (Morley, 1993, Martinez-Lopez et al., 2009, Boadella et al., 2012).

Aujeszky's disease occurs sporadically in farmed wild boar and domestic pigs across Europe. Since January 2021, there have been 22 reports of AD domestic pigs or wild boar in France, Germany, Hungary and Poland, according to ADIS and WOA. Cases in wild boar sometimes spill over into hunting dogs with fatal consequences, as reported in France and the Czech Republic (ProMed, 2022, 2023, Henshell et al., 2024).

To prevent an incursion of AD into Great Britain there are strict testing controls pre-export and post-import, dependent on the product type being imported and the exporting country's disease status. No post-import testing from Officially Free Countries is required unless the importer is considered high-risk, in which case 10% of randomly selected consignments should be sampled. All consignments from Non-Officially Free Countries are tested.

For live porcine animals imported from countries which are not free of AD, as listed in the third country listings for live ungulates (Commission Regulation (EU) No 206/2010), additional guarantees have to be met and certified. These include serological testing and residency periods for AD. For porcine semen imports, various AD guarantees are required, including testing to provide assurance of AD freedom.

The nearest reported case of AD in France is over 200km away from UK borders (**Figure 2**). This is more than double the maximum reported distance for wind-based dispersal of ADV (80km) (Christiansen et al, 1990, 1993). The case also occurred in an area of France with a relatively low density of domestic pigs (5 to 10/km²). Given the distance from UK borders and the relatively low density of domestic pigs in the area, the risk of windborne transmission to the UK is considered no greater than very low. However, this risk may increase if the disease were to spread to the northern coast of Belgium or north-west France, where there is a high density of domestic pigs (>250/km²).

We currently consider there to be a **very low** likelihood of introduction of ADV from any affected country to the UK. The sporadic cases detected in wild boar in France, Germany and the Czech Republic do not affect this risk level. We continue to emphasise the importance of prompt reporting of suspect disease in pigs and the implementation and maintenance of appropriate biosecurity measures. Guidance on identifying and reporting the disease can be found at <https://www.gov.uk/guidance/aujeszkys-disease>.

We shall continue to monitor the situation.

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References

ADIS (2023). ADIS: OUTBREAKS per COUNTRY. Available at: https://food.ec.europa.eu/document/download/b9e116d3-d531-4caf-9c9b-81d161080337_en?filename=ad_adns_overview_2023.pdf (Accessed: 12 Feb 2024).

Boadella M, Gortázar C, Vicente J, Ruiz-Fons F. Wild boar: an increasing concern for Aujeszky's disease control in pigs? *BMC Vet Res*. 2012 Jan 17;8:7. doi: 10.1186/1746-6148-8-7.

Boubet, B (2024) Aujeszky's disease: alerts in wildlife. Available at: <https://www.reussir.fr/agriculture-massif-central/maladie-daujeszky-des-alertes-dans-la-faune-sauvage> (Accessed: 12 Feb 2024).

Bo Z, Li X. A Review of Pseudorabies Virus Variants: Genomics, Vaccination, Transmission, and Zoonotic Potential. *Viruses*. 2022 May 9;14(5):1003. doi: 10.3390/v14051003.

CFSPH (2017) Aujeszky's Disease. Available at: https://www.cfsph.iastate.edu/Factsheets/pdfs/aujeszkys_disease.pdf (Accessed: 13 Feb 2024).

Christensen LS, Mortensen S, Bøtner A, Strandbygaard BS, Rønsholt L, Henriksen CA, Andersen JB. Further evidence of long distance airborne transmission of Aujeszky's disease (pseudorabies) virus. *Vet Rec*. 1993 Mar 27;132(13):317-21.

Christensen LS, Mousing J, Mortensen S, Soerensen KJ, Strandbygaard SB, Henriksen CA, Andersen JB. Evidence of long distance airborne transmission of Aujeszky's disease (pseudorabies) virus. *Vet Rec*. 1990 Nov 10;127(19):471-4.

Defra (2023) Aujeszky's disease in pigs in the south of France. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1136034/Aujeszky_s_Disease_in_pigs_in_France_7_February_2023.pdf (Accessed: 12 Feb 2024).

EC 2008: Commission decision on additional guarantees in intra-Community trade of pigs relating to Aujeszky's disease and criteria to provide information on this disease. 2008/185/EC. *OJ L 59, 4.3.2008, p. 19–30*.

FAO (2015) EMPRES-i Global Animal Disease Information System. Available at: <https://empres-i.apps.fao.org/> (Accessed: 14 Feb 2024).

Gloster J, Donaldson AI, Hough MN. Analysis of a series of outbreaks of Aujeszky's disease in Yorkshire in 1981-82: the possibility of airborne disease spread. *Vet Rec.* 1984 Mar 10;114(10):234-9. doi: 10.1136/vr.114.10.234. PMID: 6730233.

Henshell, R (2024) Dogs die in France from wild boar disease. Available at: <https://www.connexionfrance.com/article/French-news/Dogs-die-in-France-from-wild-boar-disease> (Accessed: 12 Feb 2024).

Hu Z, Tian X, Lai R, Ji C, Li X. Airborne transmission of common swine viruses. *Porcine Health Manag.* 2023 Oct 31;9(1):50. doi: 10.1186/s40813-023-00346-6.

Martínez-López B, Carpenter TE, Sánchez-Vizcaíno JM. 2009. Risk assessment and cost-effectiveness analysis of Aujeszky's disease virus introduction through breeding and fattening pig movements into Spain. *Prev Vet Med.* 2009 Jul 1;90(1-2):10-6. doi: 10.1016/j.prevetmed.2009.03.004. Epub 2009 Apr 10.

Morley RS. Quantitative risk assessment of the risks associated with the importation of pigs to abattoirs. *Rev Sci Tech.* 1993 Dec;12(4):1235-63. doi: 10.20506/rst.12.4.747.

Pejsak, Z.K and Truszczynski, M. (2006) Aujeszky's disease (Pseudorabies). In: *Diseases of Swine*, Ninth Edition, Straw B.E., Zimmerman J.J., D'Allaire S. & Taylor D.J., eds, Blackwell Science, Oxford, UK, 419–433.

ProMED (2023) Pseudorabies (Aujeszky's disease) - Czech Republic: dog. Available at: *Promed Post - ProMED-mail (promedmail.org)* (Accessed: 7 Feb 2023).

ProMED (2022) Pseudorabies (Aujeszky's disease) - France: (LP) dog. Available at: *Promed Post - ProMED-mail (promedmail.org)* (Accessed: 7 Feb 2023).

Wittmann G. Aujeszky's disease. *Rev Sci Tech.* 1986 Dec;5(4):959-1009. English, Spanish, French. doi: 10.20506/rst.5.4.277.

WOAH (2023) France - Aujeszky's disease virus. Available at: <https://wahis.woah.org/#/in-review/4883> (Accessed: 7 Feb 2023).

WOAH (2024) France – Aujeszky's disease virus. Available at: <https://wahis.woah.org/#/in-review/5271?reportId=165593&fromPage=event-dashboard-url> (Accessed: 12 Feb 2024).

Zheng HH, Fu PF, Chen HY, Wang ZY. Pseudorabies Virus: From Pathogenesis to Prevention Strategies. *Viruses.* 2022 Jul 27;14(8):1638. doi: 10.3390/v14081638.