

# A scoping review of African swine fever virus spread between domestic and free-living pigs

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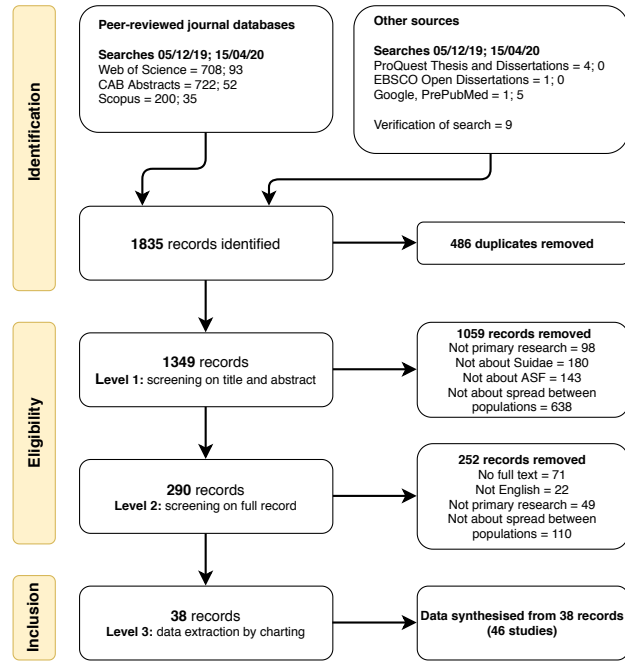
July 7, 2020

## Abstract

Since 2007, African swine fever virus (ASFV) has spread to countries in Europe, Asia and Oceania, and has caused devastating impacts on pigs and the pork industry. Transmission can be direct or indirect, and epidemiologic scenarios have been described in which spread occurs between free-living and domestic pigs. The purpose of this scoping review was to identify primary research in which authors made statements to support ASFV transmission between free-living and domestic pigs and assess the circumstances in which transmission events occurred. A search was conducted in five bibliographic databases and the grey literature. Two reviewers (from a team of ten) independently screened each record and charted data (demographics of the pig populations, their husbandry [domestic pigs] and habitat [free-living pigs], the spatial and temporal distribution of ASF, the occurrence or burden of ASF in the populations, and whether ticks were present in the geographic range of the pig populations). Data synthesis included statistics and a narrative summary. From 1,349 records screened, data were charted from 46 individual studies published from 1985 to 2020. Outbreak investigations revealed that whilst poor biosecurity of domestic pig operations was often reported, direct contact resulting in transmission between free-living and domestic pigs was rarely reported. Studies in which quantitative associations were made generally found that spread within populations was more important than spread between populations, although this was not always the case, particularly when domestic pigs were free-ranging. We conclude that there is limited evidence that transmission of ASFV between free-living and domestic pigs is an important feature of ASF epidemiology, especially in the current ASF epidemic in Europe and the Russian Federation. If ASFV elimination cannot be achieved in free-living pigs, compartmentalisation of free-living and domestic pig populations via biosecurity strategies could be used to support trade of domestic pigs.

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