

## 2-7 African swine fever

### What is African swine fever?

African swine fever (ASF) is a contagious disease of pigs and wild boars characterized by fever and systemic hemorrhagic lesions caused by African swine fever virus infection. Due to its high mortality without any treatment or available vaccine, the anticipated impact on the livestock industry is enormous once it occurs, so the disease is designated as a Domestic animal infectious disease in Japan.

ASF had been enzootic in the African region, but since after the infection spread to Europe in 2007, the infected area has been expanding. Concerning the Asian region, the first outbreak was reported in China in August 2018 and since then the infection still keep spreading in the region. To date, there have been no outbreaks in Japan, and Japan is increasing vigilance against the introduction of the disease from overseas.

### Surveillance methods and results

Surveillance of domestic pigs and wild boars is conducted to monitor the invasion and occurrence of ASF in Japan.

#### <Domestic pigs>

##### (1) Surveillance Methods

###### ① Periodic on-site inspections of farms

LHSC in each prefecture conducts on-site inspections at swine farm once a year in principle to check the clinical condition. If abnormalities such as cyanosis or fever are observed, ASF testing are conducted in addition to CSF testing.

###### ② Testing of swine samples submitted for pathological appraisal

When swine samples were submitted to LHSC for the pathological appraisal upon request from producers, samples are also tested for ASF in addition to CSF.

##### (2) Surveillance results

###### (1) Periodic on-site inspections of farms

In FY2021, on-site inspections were conducted on

4,009 farms and no abnormalities were found.

###### (2) Testing of swine samples submitted for pathological appraisal

In FY2021, tests were conducted on swine samples collected from 2,195 animals in 531 farms, with all results negative for ASF.

#### <Wild boars>

##### (1) Surveillance Methods

Tests for ASF were conducted on wild boars found dead and part of those captured, which were collected for testing for CSF (see p. 33).

##### (2) Surveillance implementation status

In FY2021, 647 dead boars and 12,526 captured boars were tested, with all results negative for ASF.

## 2-8 Highly pathogenic and low pathogenic avian influenza

### What is Avian Influenza?

Avian influenza is a disease of avian species caused by influenza A viruses. According to the Act on Domestic Animal Infectious Disease Control, the disease is classified into three types depending on virulence and probability of mutation. "Highly pathogenic avian influenza (HPAI)" is defined as the highly virulent type with a high fatality rate and "Low pathogenic avian influenza (LPAI)" is infection H5 and H7 subtype viruses but low virulent type. Other avian influenza subtypes are classified as "avian influenza."

HPAI outbreaks (subtype H5) occur worldwide, and in Japan, a number of HPAI outbreaks are observed from late fall to early spring (see Special Feature 2).

On the other hand, in case of LPAI, although the disease itself is highly contagious, infected poultry rarely shows clinical signs that lead to a delay in detection. In other countries, mutations from LPAI into HPAI have been reported.

There is no treatment for infected birds, and stamping-out policy is applied once infection is confirmed on farm. Early detection and notification of infected poultry are essential to prevent the spread of infection.

### Surveillance Methods

In addition to passive surveillance, in which diagnostic testing is conducted in response to the reporting of unusual conditions such as increased mortality, two types of active surveillance are conducted to detect infection.

#### (1) Fixed-point surveillance

Farms with a relatively high risk of infection, such as those located near stopover sites of migratory birds, are selected for continuous monitoring. Selected farms are tested for avian influenza (virus isolation and serum antibody test) once a month.

#### (2) Enhanced surveillance

Serum antibody tests are conducted on selected farms from October to May of the following year, the migration season for wild birds. Farms are selected based on the number of households in each prefecture.

### Surveillance results

All samples collected either in fixed-point monitoring or enhanced monitoring in 2021 (January-December 2021) were negative for avian influenza.

In addition, for early detection of avian influenza, the Ministry of the Environment is conducting a wild bird surveillance for avian influenza by testing feces and carcasses of wild birds, especially waterfowl in winter.

Table 2-8-1 Number of HPAI outbreaks in poultry

	2019	2020	2021
HPAI*	0	33	29
LPAI	0	0	0

\*If winter to following spring is defined as a "season", number of outbreaks during the season is as follows.  
 2019-2020 season: No outbreaks  
 2020-2021 season: 52 cases  
 2021-2022 season: 25 cases

Table2-8-2 Avian influenza surveillance in 2021

		# of farms	# of birds
Fixed point surveillance	Virus isolation	5,536	55,370
	Antibody test	5,579	55,260
Enhanced surveillance	Antibody test	1,720	17,542