



Republic of Korea

Experiences in managing ASF outbreaks

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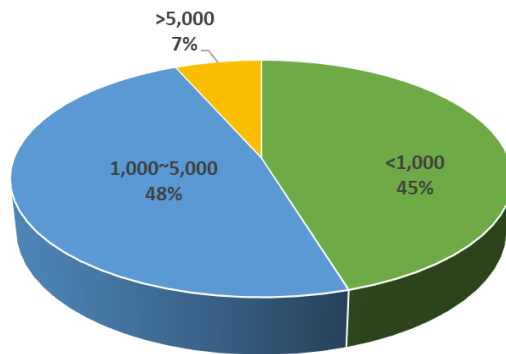
Production of Pig in Korea

(2019.12.31)

Number of Pigs : 11,280,000

Number of Sows : 1,026,000

Number of Pig Farms : 6,133



<1,000 : 2,776
1,000~5,000 : 2,953
>5,000 : 405
Mean 1,839/farm

National Control Policy against ASF

Prevention

- Border control : personal illegal imports
- Ban on swill feeding
- Biosecurity and disinfection
- Education and training
- Public awareness

Detection

- Surveillance : passive surveillance, high-risk groups
- Early detection : animal disease notification system
- Capacity building for diagnosis of ASF
- Monitoring in high risk areas

Control

- Reporting suspected cases
- Depopulation and disposal
- Disinfection
- Movement control
- Epidemiological investigation
- Restocking

Standard Operation Procedure on ASF

- Acting system by 3 alert stages :
Elevated stage - High stage - Severe stage
- Emergency actions for suspected cases
- Standstill (Lock down on the movement)
- Depopulation and Disposal
- Decontamination
- Epidemiological investigation
- Operation of control post
- Restocking



1st version : August 2018

2nd version : July 2019

The first case of ASF in Korea 1

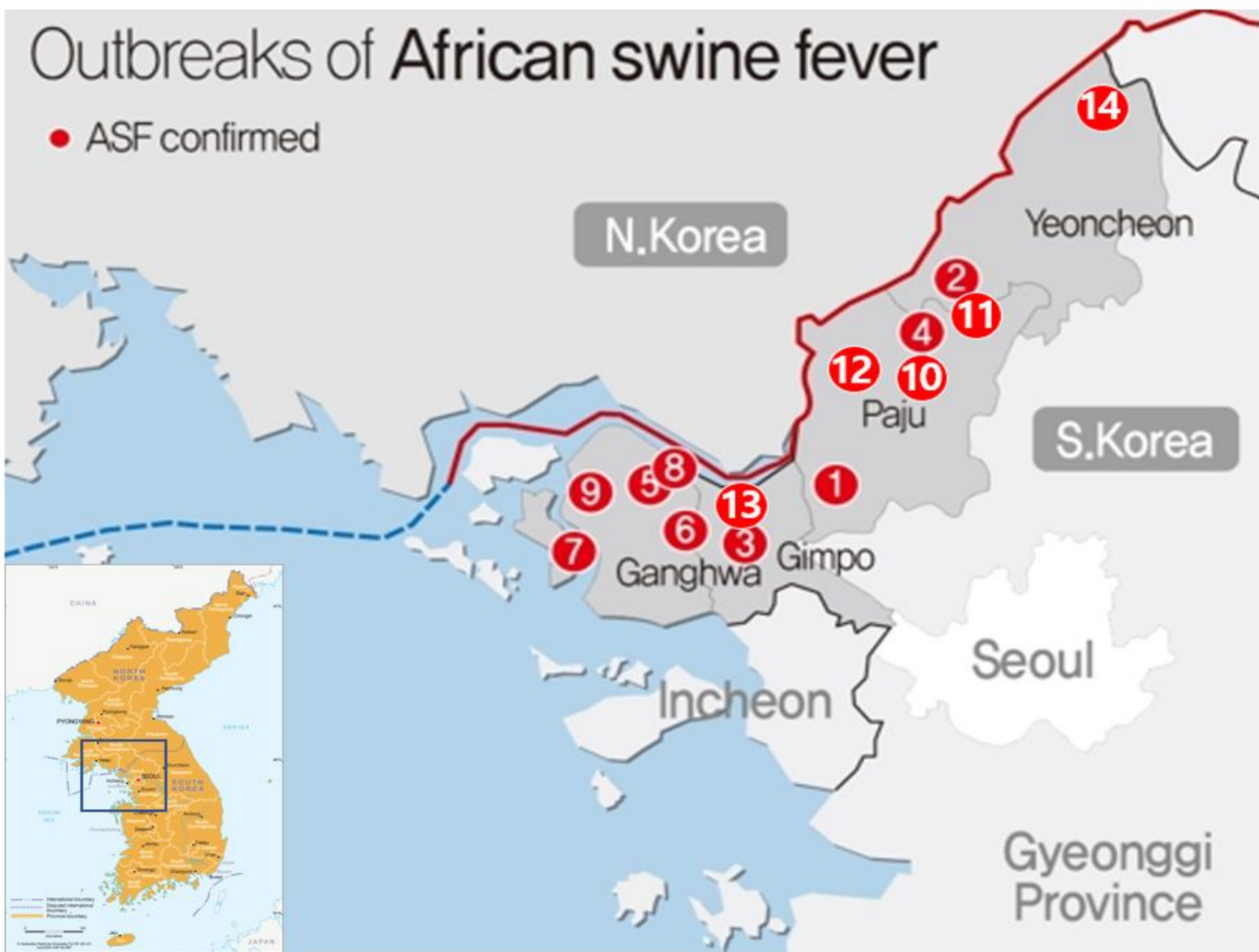
- ❖ A suspected case of ASF was reported at a farrow-to-finish farm of 2,450 pigs including 350 sows in Paju city, Gyeonggi province (16 September 2019)
- ❖ Location at about 7 km from the border line MDL
- ❖ Five sows in maternity barn: anorexia for 2~3 days, fever ($>40^{\circ}\text{C}$) and death
- ❖ Necropsy: infarction and enlargement of spleen, congestion of lymph nodes

The first case of ASF in Korea 2

- ❖ Collection of samples: (provincial veterinary service)
 - spleen, liver & lymph nodes from 1 dead sow
 - blood samples from 1 suspected sow
- ❖ Transportation to Biosafety Level 3 (BSL-3) laboratory (BSL-3) at the Animal and Plant Quarantine Agency (APQA), Gimcheon.
- ❖ Real time PCR : positive for all samples
- ❖ The suspected case was confirmed as the first outbreak of ASF in Korea at 06:00 on 17 September.

Outbreaks of African swine fever

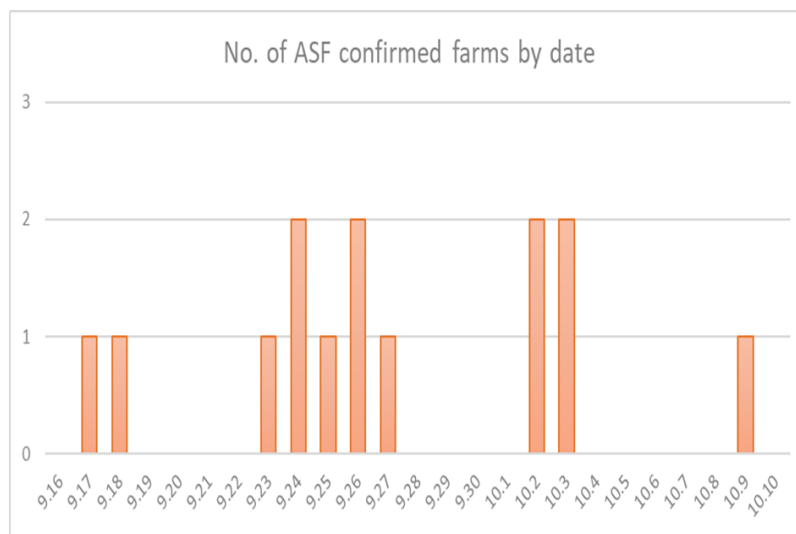
● ASF confirmed



ASF outbreaks in Korea

◎ At pig farms :14cases (2019.9.16~10.9)

- Gyeonggi Prov. 9 cases: Paju 5, Yeoncheon 2, Gimpo 2
- Incheon 5 cases: Ganghwa 5



◎ Wild boars : 544 heads (2019.10.3~2020.4.17)

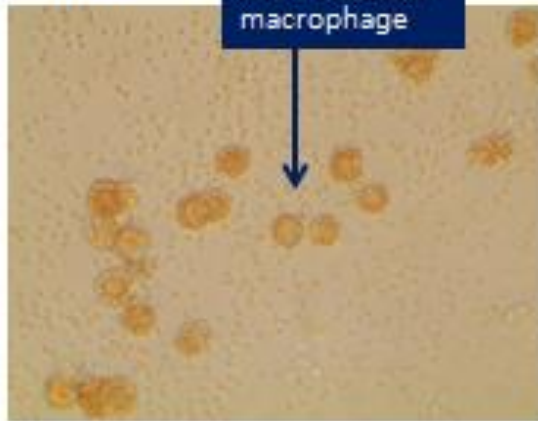
- Gyeonggi Prov. 301 : Yeoncheon 210, Paju 91
- Gangwon Prov. 243 : Hwacheon 210, Cheorwon 28, Yanggu 3, Goseong 2

Characteristics of ASFV isolates in Korea

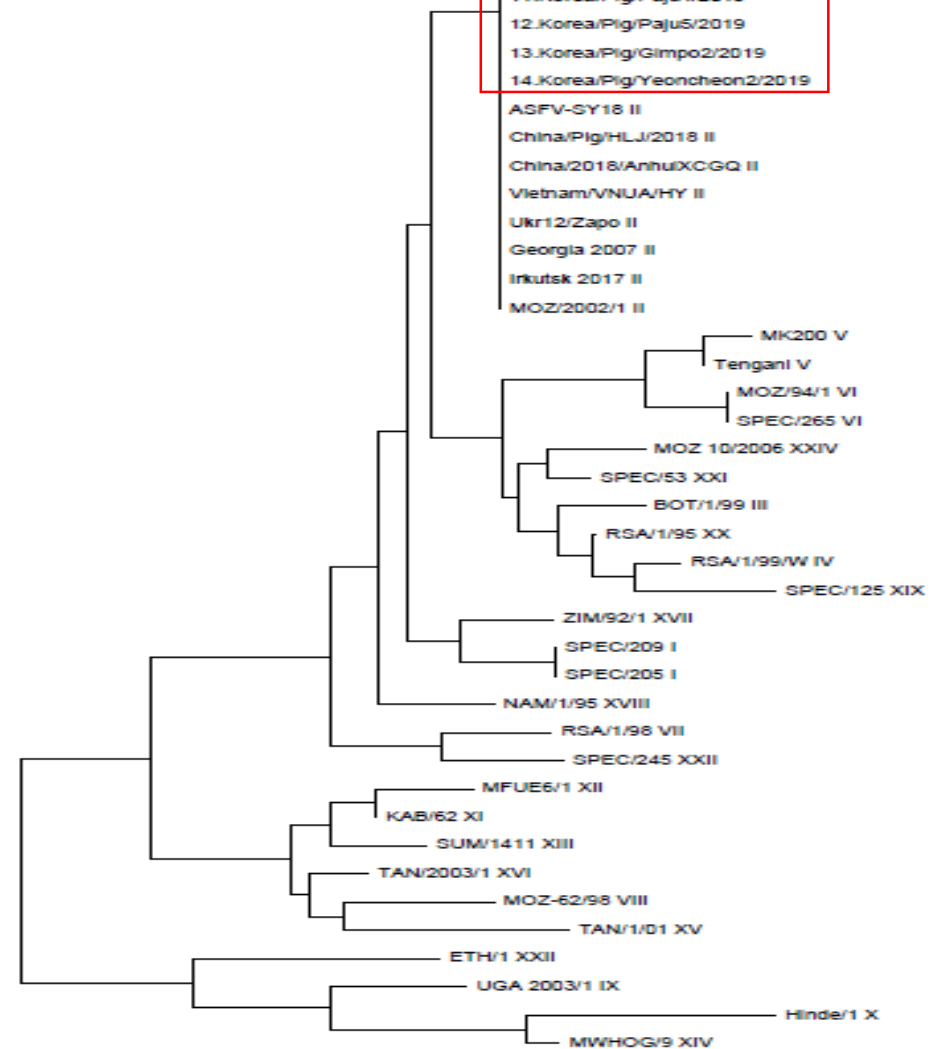
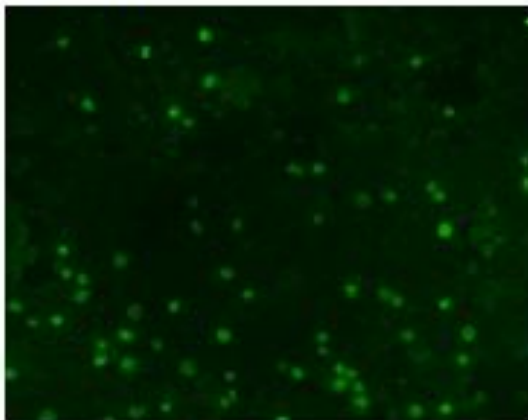
Genotype II

- 1.Korea/Pig/Paju1/2019
- 2.Korea/Pig/Yeoncheon1/2019
- 3.Korea/Pig/Gimpo1/2019
- 4.Korea/Pig/Paju2/2019
- 5.Korea/Pig/Ganghwa1/2019
- 6.Korea/Pig/Ganghwa2/2019
- 7.Korea/Pig/Ganghwa3/2019
- 8.Korea/Pig/Ganghwa4/2019
- 9.Korea/Pig/Ganghwa5/2019
- 10.Korea/Pig/Paju3/2019
- 11.Korea/Pig/Paju4/2019
- 12.Korea/Pig/Paju5/2019
- 13.Korea/Pig/Gimpo2/2019
- 14.Korea/Pig/Yeoncheon2/2019

A) HAD



B) FA



0.010

Characteristics of ASFV isolates in Korea

I73R-I329L gene

Tandom repeat sequence

Georgia 2007/1
Arm07
Pol14/Krus
Ukr12/Zapo
Lt14/1482
Irkutsk 2017
Belgium/2018/Etalle
China/Jilin/2018/boar
China/SY18
China/CN201801
1. Korea/Pig/Paju1/2019
2. Korea/Pig/Yeoncheon1/2019
3. Korea/Pig/Gimpo1/2019
4. Korea/Pig/Paju2/2019
5. Korea/Pig/Ganghwa1/2019
6. Korea/Pig/Ganghwa2/2019
7. Korea/Pig/Ganghwa3/2019
8. Korea/Pig/Ganghwa4/2019
9. Korea/Pig/Ganghwa5/2019
10. Korea/Pig/Paju3/2019
11. Korea/Pig/Paju4/2019
12. Korea/Pig/Paju5/2019
13. Korea/Pig/Gimpo2/2019
14. Korea/Pig/Yeoncheon2/2019

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Outbreak management strategies

- ❖ Raising the level of animal disease alert to the highest "severe(red)" stage
 - Establishment of Headquarters of Control against ASF (central & regional)
- ❖ Stamping-out of pigs in the infected farms and contact/neighboring farms (500 M/ 3 KM)
- ❖ Standstill (lock down on the movement) order for 48hr
 - nationwide or related provinces
 - for pig farms, slaughterhouses, feed mills and related transport vehicles

Control of ASF Outbreak 1

- ❖ Ban on pig movement from Gyeonggi to other provinces for a week
- ❖ Swill feeding totally prohibited
- ❖ Epidemiological investigation
- ❖ Establishment of the 'ASF Critical Control Area':
 - Six high-risk cities/counties
 - Ban on pig movement to other areas (slaughter only at designated slaughterhouse)
- ❖ Persons who contact with pigs (vet, feed company, etc.): Restriction of visit to pig farms in Gyeonggi & Gangwon area except for the treatment for sick animals
- ❖ Carrying out extensive disinfection at farms and livestock-related facilities

Control of ASF Outbreak 2

❖ Designation of 4 key control areas

- Northern part of Gyeonggi Province (10 cities-Yeoncheon, Pocheon, Dongducheon, Yangju, Paju, Goyang, Gimpo + Ganghwa, Ongjin + Cheorwon)
- Northern part of Gangwon Province (4 cities-Hwacheon, Yanggu, Inje and Goseong)
- Southern part of Gyeonggi Province (remaining 20 cities)
- Southern part of Gangwon Province (remaining 13 cities)
- Movement of pig and manure only within the each zone
- Clinical examination by veterinarian before moving pigs in the zone
- Pork meat can move to other areas after slaughter

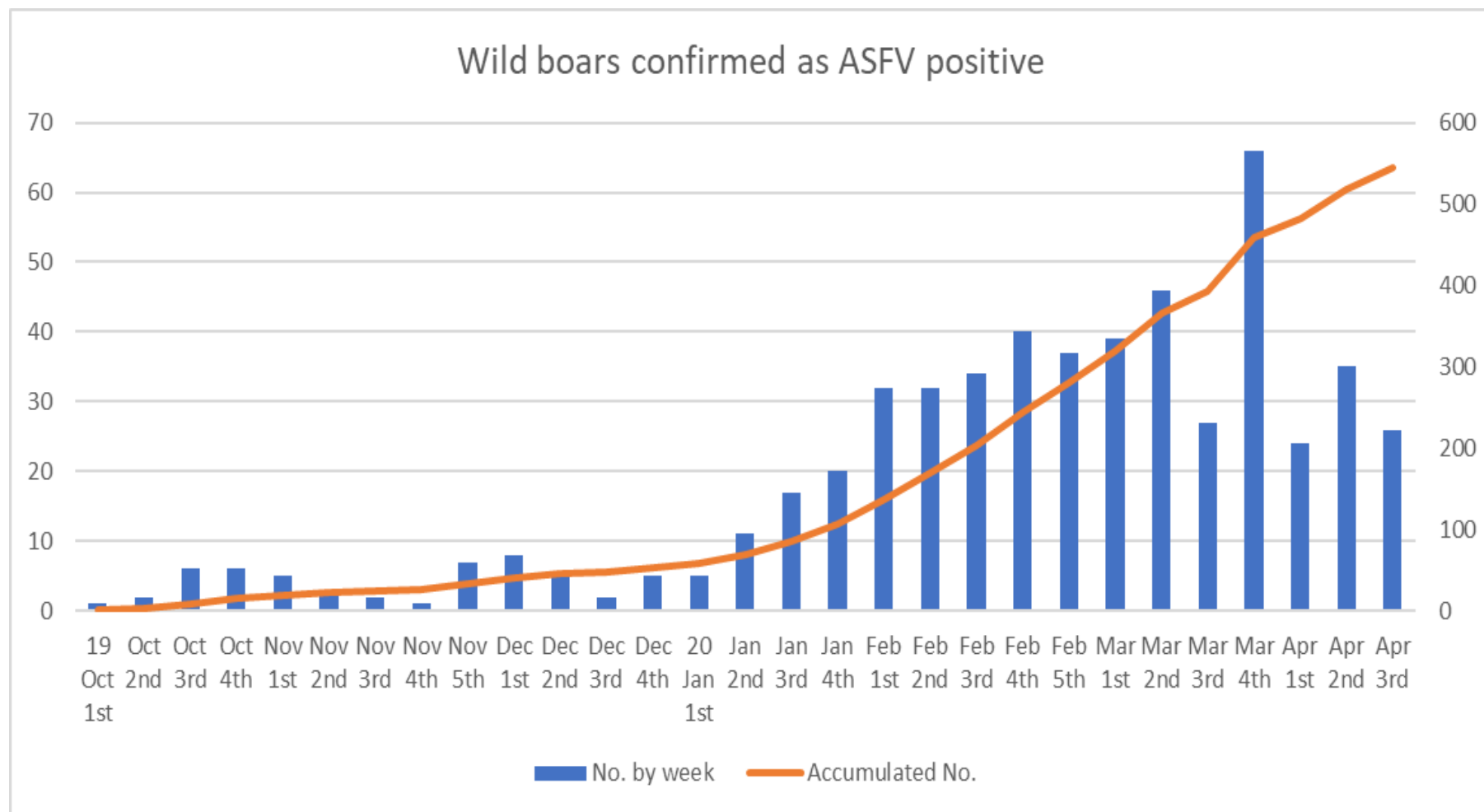
Control of ASF Outbreak 3

- ❖ Establishment of a buffer zone
 - Outside the 10 Km radius from affected farms in Goyang, Pocheon, Yangju, Dongducheon, Cheorwon and Yeoncheon
 - Control posts on the main roads at the edge of buffer zone
 - Control on access of vehicles to all farms
 - Monitoring all pig farms once a week for 3 weeks
 - Inspection of slaughterhouses and feed mills once a month
 - Enhancing biosecurity at each farm
 - Monitoring the movement of livestock-related vehicles to other areas in real-time

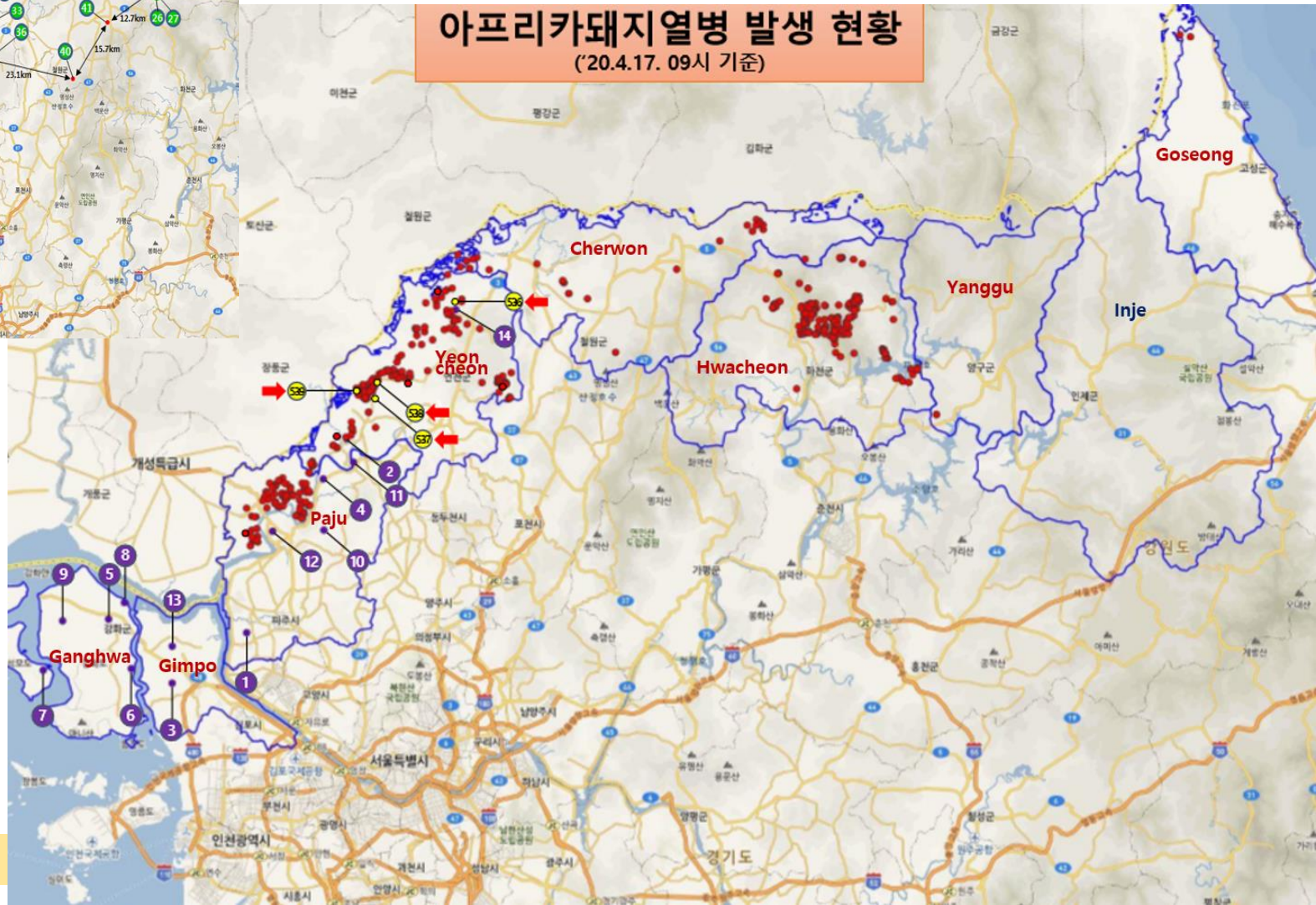
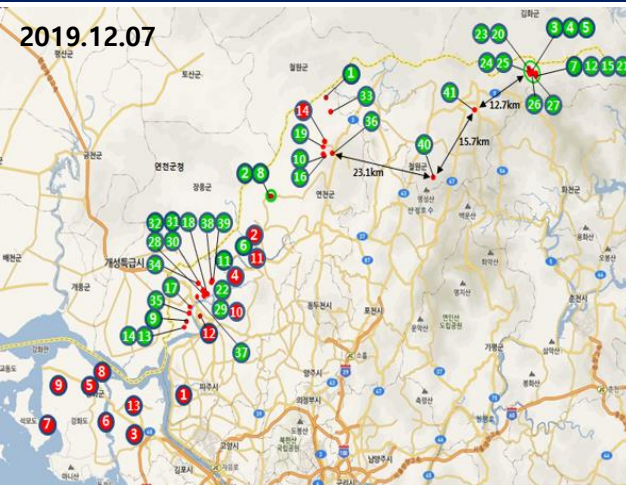
Control of ASF Outbreak 4

- ❖ Gov. purchasing pigs ready for market from farms within 10 Km radius from affected farms
 - Stamping out other pigs as a part of precaution measures in Paju, Gimpo and Yeoncheon
- ❖ Supporting farmers
 - Compensation: 100% of market price
 - Stabilization fund for living: 3,000 USD per month for 6 month

Current situation of ASF in wild boars



Spread of ASF in wild boars



Spread of ASF in wild boars

2020.4.17

County/City	Ganghwa	Gimpo	Paju	Yeoncheon	Cheorwon	Hwacheon	Yanggu	Goseong
ASF outbreaks in pig farms	5	2	5	2	0	0	0	0
ASFV positive wild boars	0	0	91	210	28	210	3	2

[ASFV positive wild boars]

County/City		Paju	Yeoncheon	Cheorwon	Hwacheon	Yanggu	Goseong
2019	October	5	7	6	0	0	0
	November	6	2	7	0	0	0
	December	8	10	4	0	0	0
2020	January	27	20	2	34	0	0
	February	22	48	3	79	0	0
	March	17	91	1	71	0	0
	April	6	32	5	26	3	2
Total		91	210	28	210	3	2

Control measures for ASF in wild boars

- ❖ Three-layer fencing system
 - 1st fence: 1~2 KM, 2nd fence: 5~10 KM, 3rd fence: 25~40 KM
- ❖ Active carcass searching
- ❖ 3 zones : infected zone, danger zone, intensive hunting zone
- ❖ Biosafety
 - sites of wild boars carcass
 - transportation and disposal of carcass
 - personnel involved
 - vehicles and materials



Thank you. 감사합니다.

