

ASF control in Europe 欧洲的ASF控制

Lessons learned (and not learned)

经验教训（和没有学到的）

Heiko Nathues

19. OCT 2025

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Agenda 议程



Pig & pork production in Europe

欧洲猪和猪肉生产

History of ASF spread

非洲猪瘟传播史

Current situation

当前情况

Control in different situation

不同情况下的控制

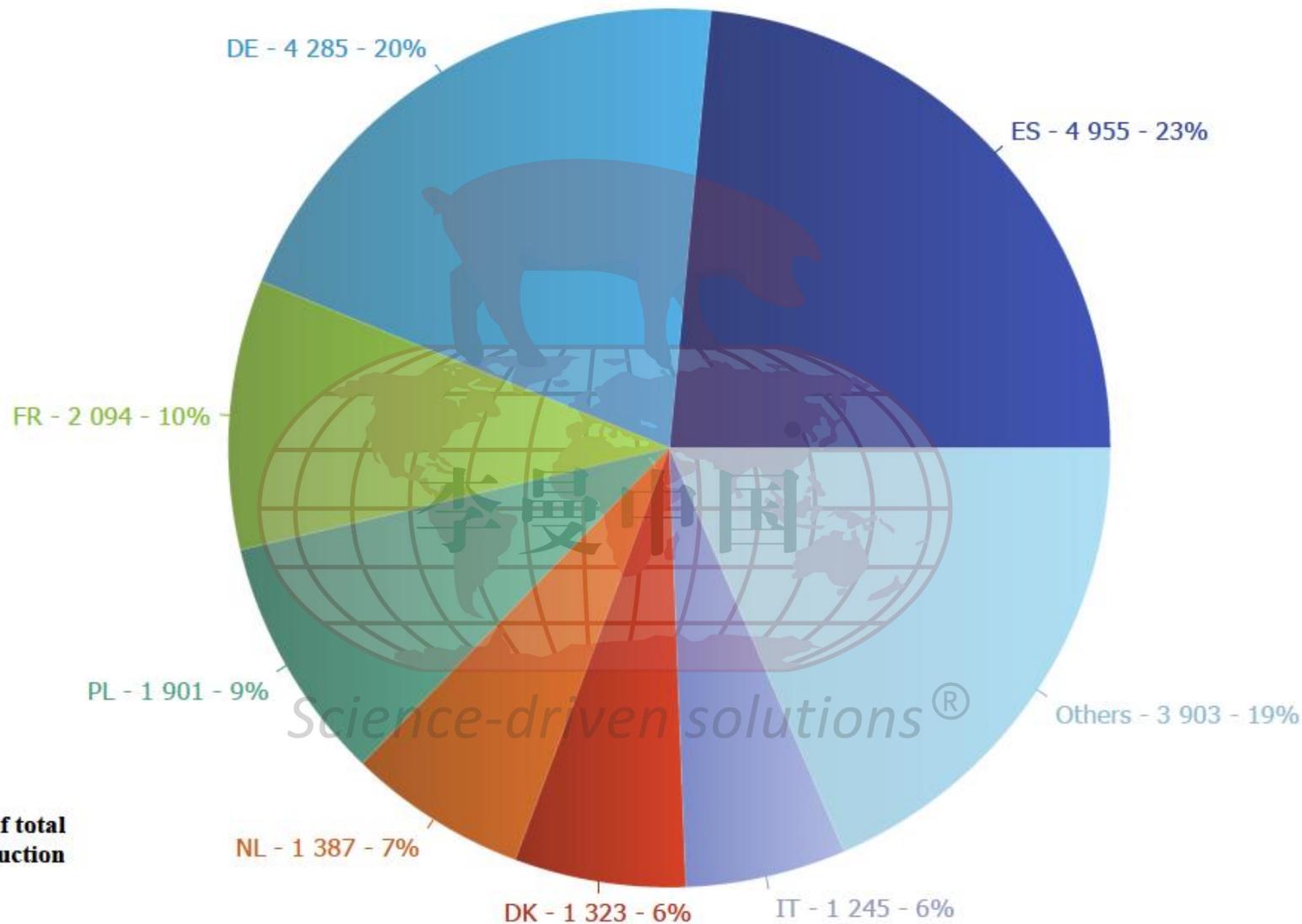
Learnings from case management

案例管理经验®

Outlook

前景

EU Main Producers (1000 tonnes product weight)



7 MSs = 81% of total EU production

Source: Eurostat

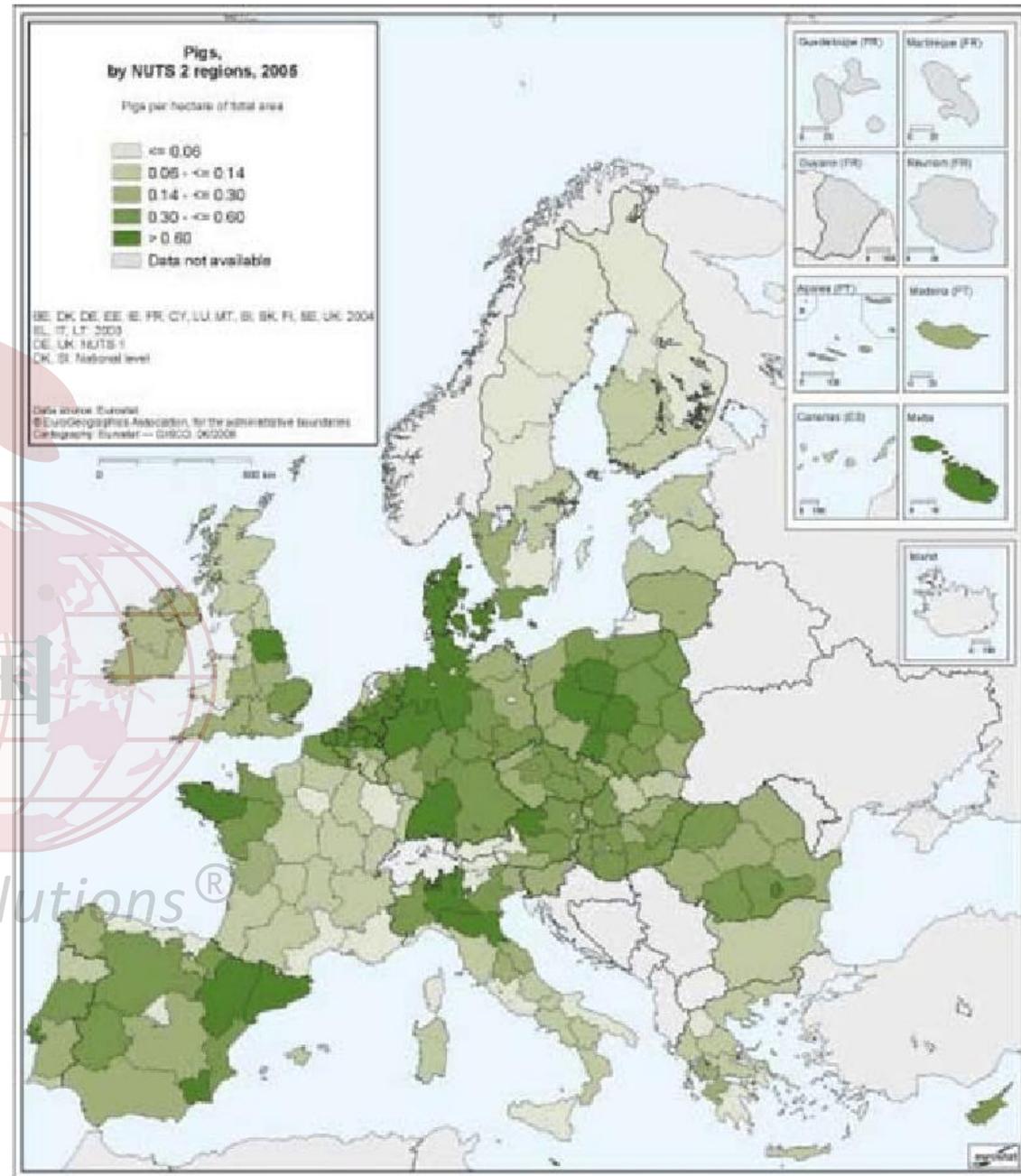
Year 2024
Total EU = 21092
(+2% over 2023)

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Pig production in Europe 欧洲生猪生产

Challenged by 挑战

- AMU & AMR 抗生素的使用&抗生素耐药性
- N/P balance N/P平衡
- Low resilience 抗压能力差
- ASF, FMD & others ASF、FMD及其他
- ...



History of ASF spread in Europe

欧洲非洲猪瘟传播史

First Outbreak 首次暴发

- ASF was first recorded in Portugal in 1957 1957年，葡萄牙首次记录到ASF

Spread to Spain 传播至西班牙

- The disease quickly spread to Spain, becoming endemic
- 这种疾病迅速蔓延到西班牙，成为地方病

Eradication 根除

- By the mid-1990s, ASF was eliminated from Portugal and Spain
- 到20世纪90年代中期，ASF从葡萄牙和西班牙消失

Re-emergence 重新出现

- ASF re-emerged in Eastern Europe in 2007, spreading rapidly
- 2007年，ASF在东欧重新出现，迅速传播

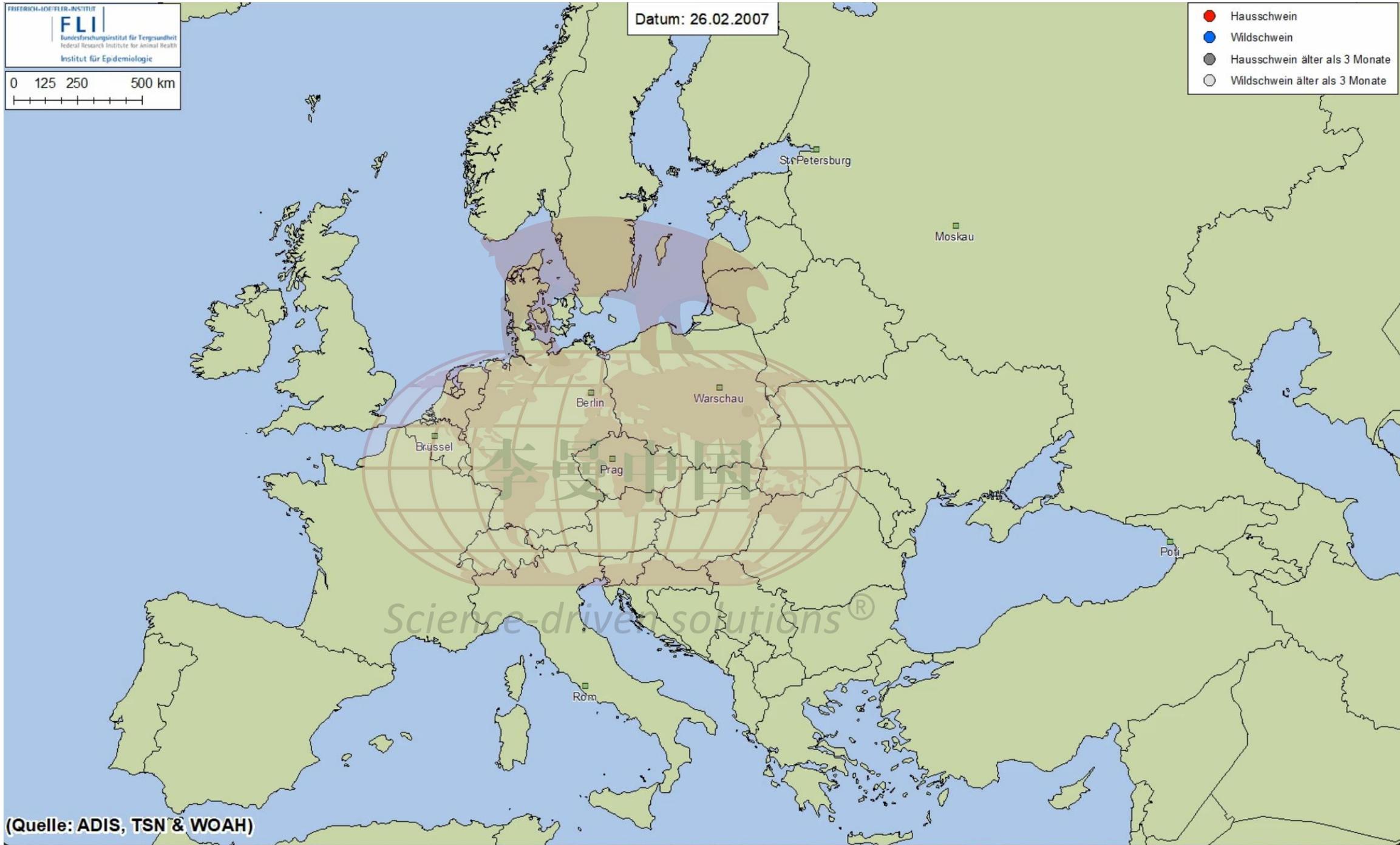
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RIEHRICH-IOEFER-INSTITUT
FLI
Bundesforschungsinstitut für Tiergesundheit
Federal Research Institute for Animal Health
Institut für Epidemiologie

0 125 250 500 km

Datum: 26.02.2007

- Hausschwein
- Wildschwein
- Hausschwein älter als 3 Monate
- Wildschwein älter als 3 Monate



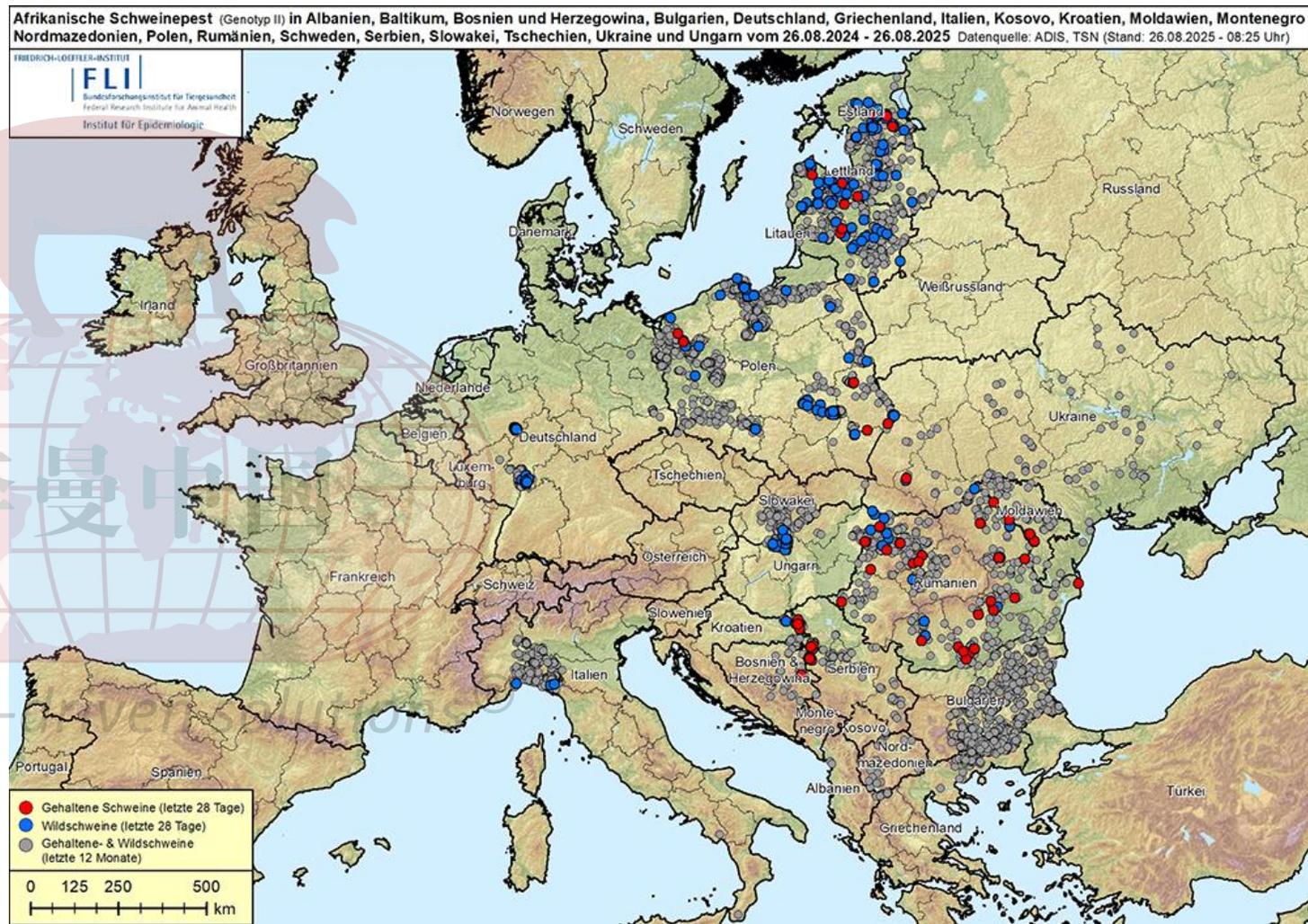
(Quelle: ADIS, TSN & WOAH)

Current situation 当前情况

ASF positive countries:

ASF阳性国家:

- Eastern Europe 东欧
- Germany 德国
- Italy 意大利
- Poland 波兰



Control in different situations 不同情况下的控制



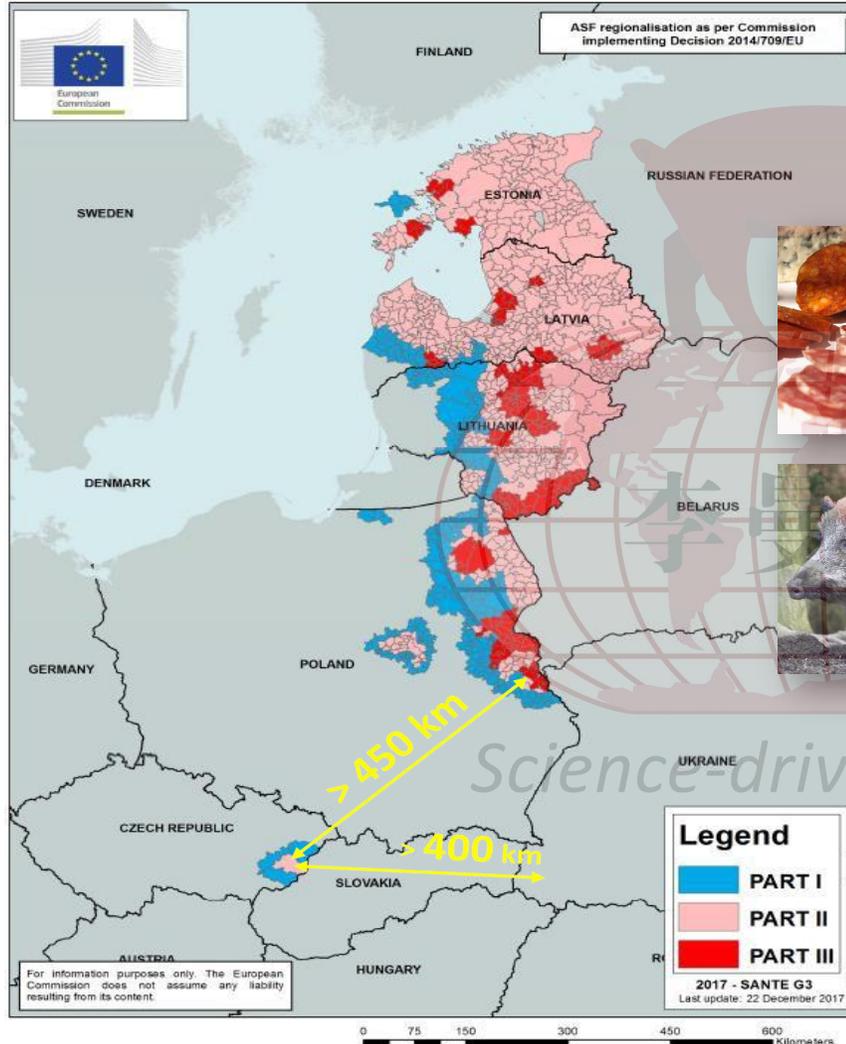
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ASF in Czech Republic 捷克共和国ASF



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First occurrence of ASF ASF首次发生



First ASF positive carcass location: Příkladky, Zlín district

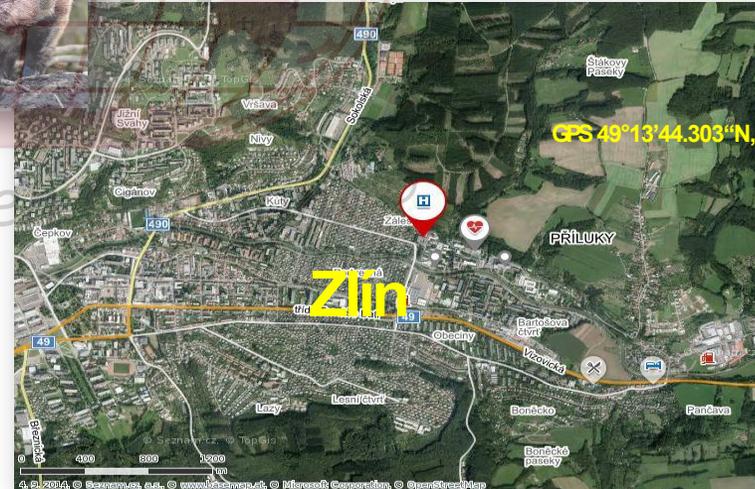
ASF阳性尸体位置: Priluky, Zlin区

Date: 26th June 2017

日期: 2017年6月26日

Way of ASF introduction?

ASF的引入方式?



ASF – Epidemiological situation from 26. 6. 2017 to 22. 2. 2018

ASF-26日的流行病学情况。6.2017年至22日。2.2018

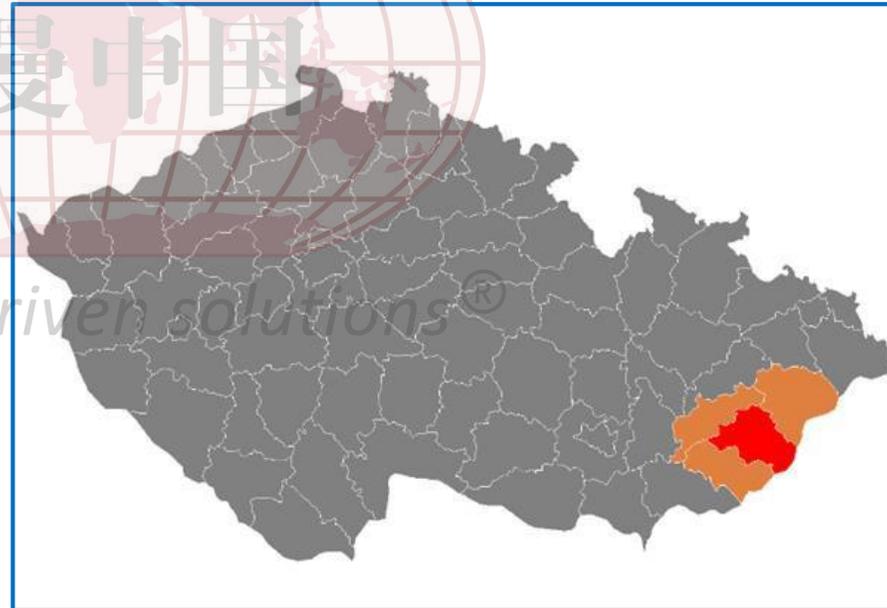
A total **230** cases of African swine fever have been detected in the wild boar population
在野猪种群中共检测到230例非洲猪瘟病例

- The total number of positive cases in found dead wild boar: **212** (last positive cases **15. 4. 2018**)
- 发现死亡野猪的阳性病例总数：212（最后阳性病例15。4.2018）
- The total number of positive cases in hunted wild boar: **18** (last positive cases **8. 2. 2018**)
- 猎捕野猪的阳性病例总数：18（最后阳性病例8。2.2018）

All positive cases have been detected only in District of Zlín.
所有阳性病例仅在兹林区发现。

 Infected area (Part II) – District of Zlín
 Part I

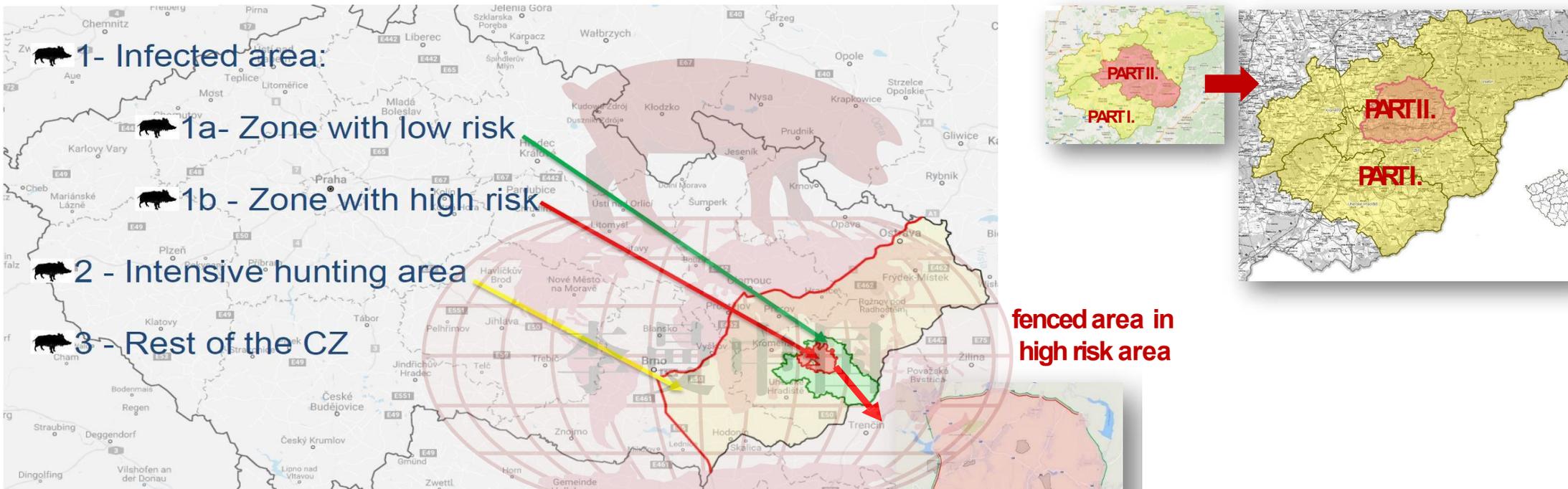
**NO OUTBREAK
IN DOMESTIC PIGS**
家猪中未出现疫情



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ASF measures in 4 (5) levels in the Czech Republic 捷 克 共 和 国 的 ASF 措 施 分 为 4 (5) 个 等 级

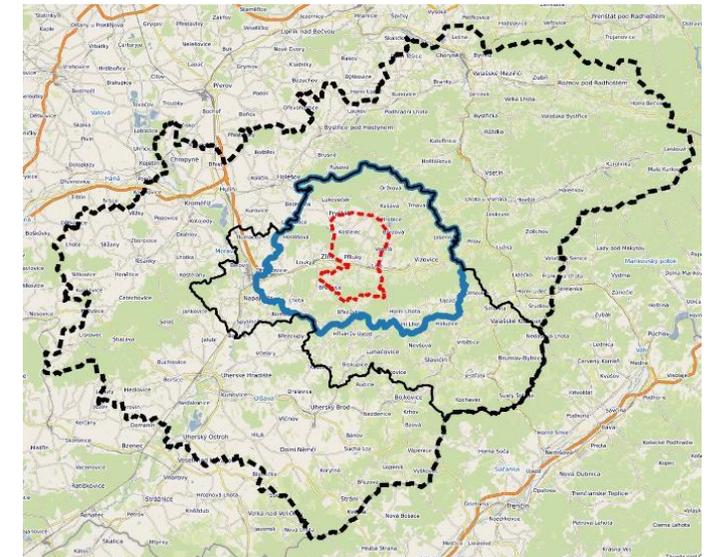


- ✓ Intensive hunting area: 8500 km² (District Zlín excluded)
- ✓ 集约狩猎区: 8500平方公里 (不包括兹林地区)
 - ✓ District Zlín: 1033 km² 兹林区: 1033 km²
 - ✓ Infected area with low risk: 1033 – 159 = 874 km² 低风险感染区: 1033-159=874 km²
 - ✓ Infected area with high risk: 159 km² 高风险感染区: 159 km²
 - ✓ Infected area with the highest risk (inside the fences): 57 km²
 - ✓ 风险最高的感染区 (围栏内): 57 km²

ASF - Total number of wild boars and domestic pigs ASF tested/positive (26. 6. 2017– 31. 01. 2018)
 ASF -野猪和家猪ASF检测/阳性总数(26。6.2017 – 31.01.2018)

WILD BOARS 野猪

- 1) **Infected area (Part II according to the EU regionalisation) 感染区域 (根据欧盟区域划分属于第二部分)**
 - found dead 444 / 212 positive (47 %) 发现444例死亡/ 212例阳性 (47 %)
 - hunted 3 758 / 18 positive (0,5%) 猎杀3 758 / 18阳性 (0.5%)
- 2) **Other areas of the Zlín region (Part I) 兹林地区其他地区 (第一部分)**
 - found dead 154 / 0 positive
 - hunted 11 563 / 0 positive
- 3) **Area with intensive hunting (without Part I and II areas) 3重猎区 (不包括第一、第二部分)**
 - hunted 12 343 / 0 positive 猎捕了12 343 / 0只阳性
- 4) **The whole Czech Republic (without Part I and II areas) 4捷克共和国全境 (不包括第一、第二部分地区)**
 - found dead 2 299 / 0 positive 发现死亡2 299 / 0阳性



DOMESTIC PIGS 家猪

Total number of domestic pigs tested / positive 检测/阳性家猪总数	Part II		Part I	
	Active	Passive	Active	Passive
		337 / 0	109 / 0	723 / 0

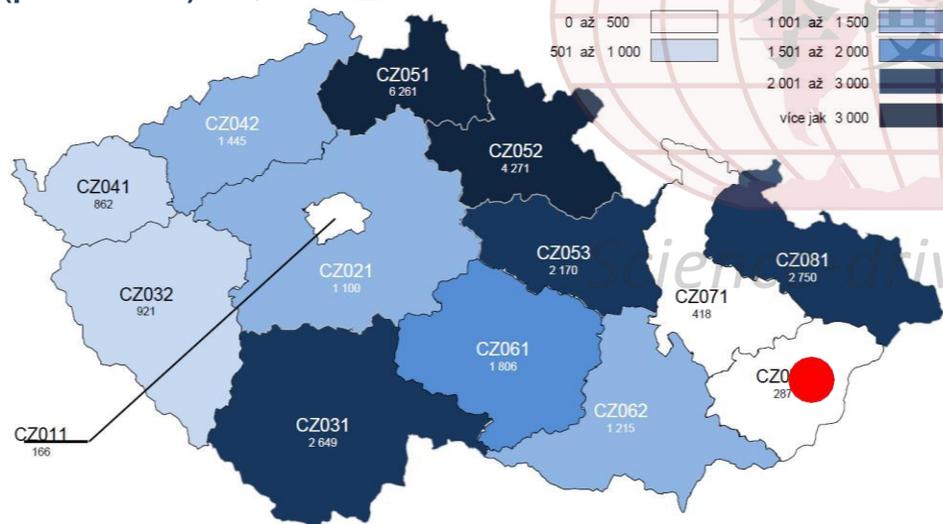
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INCREASE BIOSECURITY AND AVOID CONTACT BETWEEN WILD BOAR AND DOMESTIC PIGS

提高生物安全，避免野猪与家猪接触

- ban on keeping of pigs in backyard farms and in non-registered holdings in the infected area
•禁止在受感染地区的后院农场和未注册的农场饲养生猪
- enhanced passive surveillance in pig farms - farmers must report all sick/dead pigs in the infected area (all cases are tested for ASF)
•加强猪场被动监测-农场主必须报告受感染区域内的所有患病/死亡猪（所有病例均进行ASF检测）
- movement of pigs only with authorisation issued by the RVA for Region Zlín.
•只有在获得Zlín地区RVA的授权后，方可移动猪只。
- ban on feeding with fresh grass, ban on straw bndding
•禁止饲喂新鲜牧草，禁止秸秆打捆
- official controls in pig farms in accordance with Commission Implementing Decision 2014/709/EU. Targeted for BIOSECURITY.
•根据欧盟委员会实施决定2014/709/EU对猪场进行官方控制。作为生物安全目标。
- information campaign
•信息运动

Density of domestic pigs in the Czech Republic
捷克共和国家猪的密度
(per 100 km²) (每100公里²)



	farms	pigs
Czech Republic [®]	2 160	1 353 935
Zlín region	83	74 088
infected area (district Zlín)	23	16 301

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- **enhanced passive surveillance of WB found dead** (motivated searching of carcasses)
- 加强了对野猪的被动监测，发现有死亡病例（对尸体进行了主动搜查）
- **ban on hunting** (any species, any hunting system) **and later hunting of WB was allowed but only by individual hunting and trapping** (selected and trained hunters)
- 禁止狩猎（任何物种，任何狩猎系统），后来允许狩猎野猪，但只能由个人狩猎和捕兽（经过挑选和训练的猎人）
- **ban on feeding** (only baiting allowed)
- 禁止投喂（仅允许投饵）
- **ban of entrance** for the general public into the infected area
- 禁止公众进入受感染地区
- all hunted and found dead WB **must be disposed of in the rendering plant (+ tested for ASF)**
- 所有被猎杀并发现死亡的WB必须在炼油厂进行处置（+检测是否感染非洲猪瘟）
- **unharvest fields left to provide food and shelter for wild boars**
- 未收割的田地被用来为野猪提供食物和住所
- **financial rewards**: each finding of **dead wild boar - 194 €.**
- **经济奖励**: 每发现一头死亡的野猪——194€。

each hunted young wild boar (up to 50 kg) - 155 €. 每头猎捕的野生野猪（最高可达50公斤）-155€。

each hunted adult wild boar (over to 50 kg) - 310 €. 每头被捕获的成年野猪（体重超过50公斤）-310€。

+ compensation for piglet 39 €, one-year old 78 €, adult saw 125 € for hunted wild boar disposed of in the rendering plant.

+补偿金额为: 39头仔猪€、78头一年龄猪€、125头成年猪€，这些野猪是被猎杀后送往加工厂处理的。



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Alternative measures 替代措施





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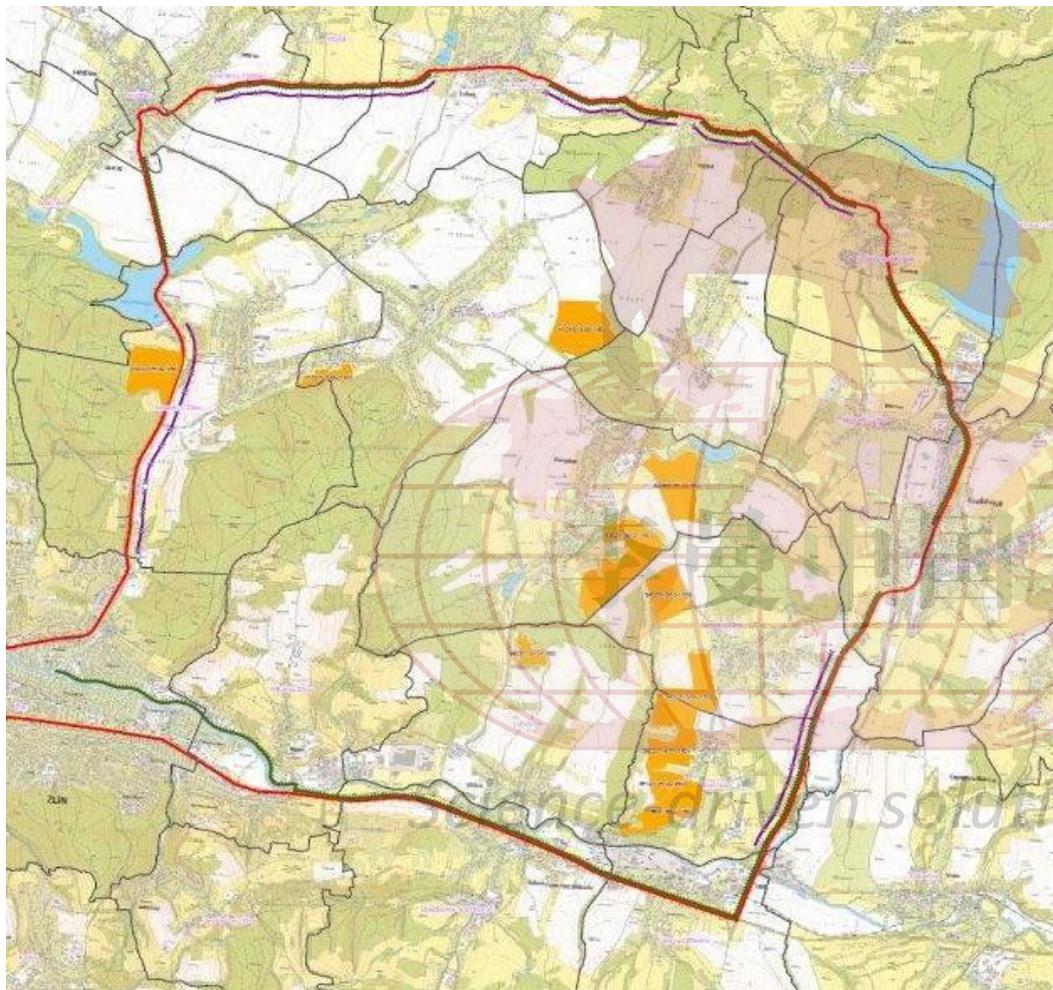
Odour fences around the infected area 在受感染区域周围设置气味屏障



- synthetic foam with 3-Methylbutanoic acid (isovaleric acid)
- 与3-甲基丁酸（异戊酸）合成的泡沫
- imitation of typical predators smell/odor
- 模仿典型捕食者的气味
- strong pungent cheesy or sweaty smell
- 强烈的刺激性奶酪味或汗味
- it is a major component of the cause of unpleasant foot
- 它是引起足部不适的主要原因
- most durable product chosen – resistant against weather conditions (+ with slow evaporation)
- 最耐用的产品选择——耐候性（+蒸发缓慢）
- 5 m distance / 4 weeks period
- 5m距离/4周周期
- product: Pacholek koncentrát B, Ekoplant, s.r.o.
- 产品：Pacholek浓缩液B, Ekoplant, s.r.o.

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Higher risk area: unharvested fields left 高风险区域：未收割的遗留田地



115 hectares of unharvested fields (rape, maize and wheat) were left for wild boars providing both food and shelter

115公顷未收割的田地（油菜、玉米和小麦）留给野猪，为它们提供食物和住所

Swine Clinic & MCID

Universität Bern | Universität Zürich

vetsuisse-fakultät

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Enhanced passive surveillance of WB found dead 加强被动监测，发现死亡病例



Motivated or/and organised
searching of carcasses
有动机和/或有组织地搜寻尸体

- very inaccessible terrain
- 非常难以接近的地形
- dense vegetation
- 茂密的植被



20 19.10.2025



Swine Clinic & MCID



Collection and disposal of carcasses 尸体收集和处置

One of the most important steps in ASF control and eradication

控制和根除非洲猪瘟最重要的步骤之一

Collection of WB carcasses with financial motivation: 出于经济动机收集野猪病尸体:

	Area	Reward in CZK
Finder reward	Czech Republic	2 000,-
	Area with intensive hunting	3 000,-
	Infected area – higher risk zone	5 000,-



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Increased passive surveillance of dead WB

增加对死亡野猪的被动监测

Motivated searching for carcasses

积极寻找尸体



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Hunting by police snipers in the infected area 警察狙击手在受感染地区进行狩猎

task: as fast as possible total depopulation inside the fenced area - quickly, silently, efficiently and with high biosecurity

任务：尽快在围栏区域内完成全部清场——快速、无声、高效且具有高生物安全性

- individual hunting by Police snipers (Elite Squad, Police Special Unit, Airport snipers)
- started from 16 October 2017 (3 days a week during 10 weeks)
- in total 157 WB hunted - 8 positive for ASF
- snipers trained for hunting biosecurity
- organization and coordination by RVA and by regional hunters
- 警察狙击手的个人狩猎（精英小队、警察特勤组、机场狙击手）
- 开始于2017年10月16日（每周3天，持续10周）
- 共猎获157只野猪，其中8只ASF阳性
- 受过生物安全狩猎训练的狙击手
- 由RVA和区域猎人组织和协调

- over night hunting (18:00 – 6:00) 夜间狩猎（18:00-6:00）
- mobile thermovision used 使用移动热成像仪
- snipers with silencers ALL hunted
WB collected and rendered !!! 狙击手用消声器全部猎杀野猪收集和处置!!!



Collection of hunted WB during hunting by POLICE 警方在狩猎期间收集的被猎杀的野猪

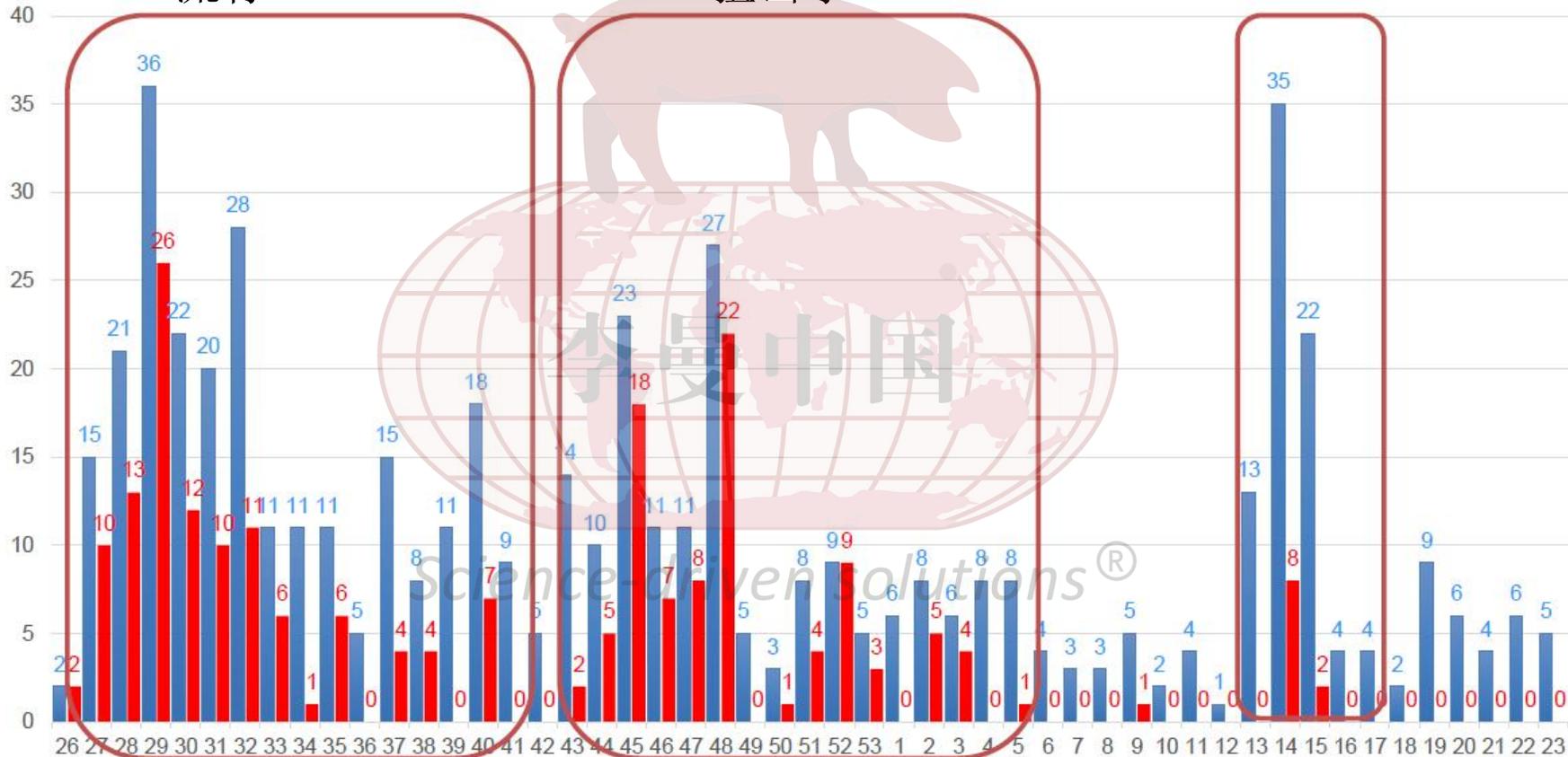


Weekly incidence: 3 peaks in the Czech Republic 每周发生率：捷克共和国有3个峰值

EPIDEMIC
流行

SNIPERS
狙击手

MOTIVATED and ORGANISED 积极主动且组织有序
SEARCHING OF CARCASSES 搜查尸体



2017

2018

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Trapping of wild boars 野猪捕获

- 32 traps in the area 该地区有32个陷阱
- cage traps with sensors and cameras 带传感器和摄像头的笼式陷阱
- subsidies for traps = **315 € - 730 €** 诱捕器补贴= 315€- 730€

Fenced area	total trapped	negat.	posit.	prevalence
in	40	36	4	10%
out	66	66	0	-



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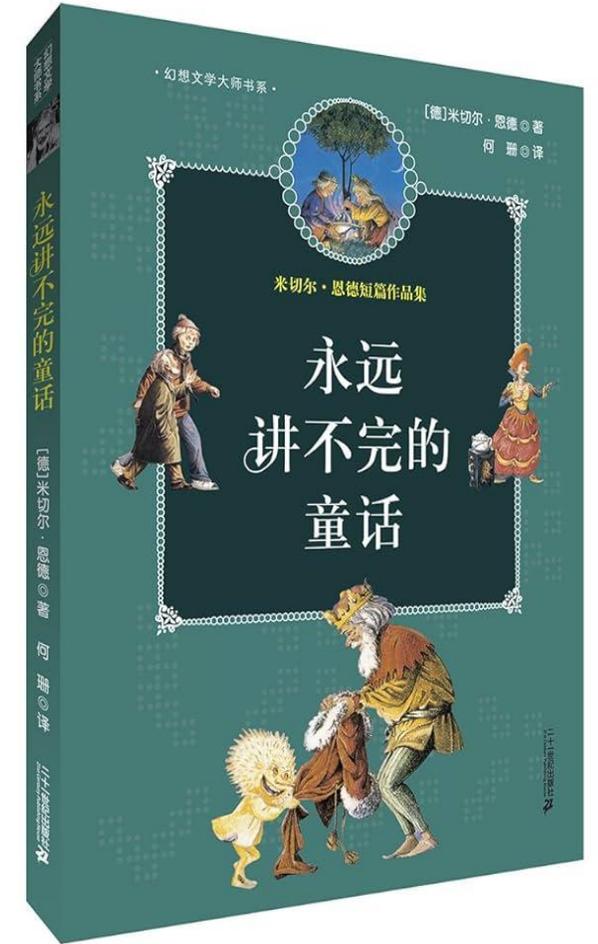
Outcome 成果

Czech Republic was declared free of ASF on 01.
APR 2019

捷克共和国于2019年4月1日宣布无非洲猪瘟疫

Re-infection took place on
01. DEC 2022 (wild boar found dead)

2022年12月1日发生再次感染（发现死亡野猪）[®]



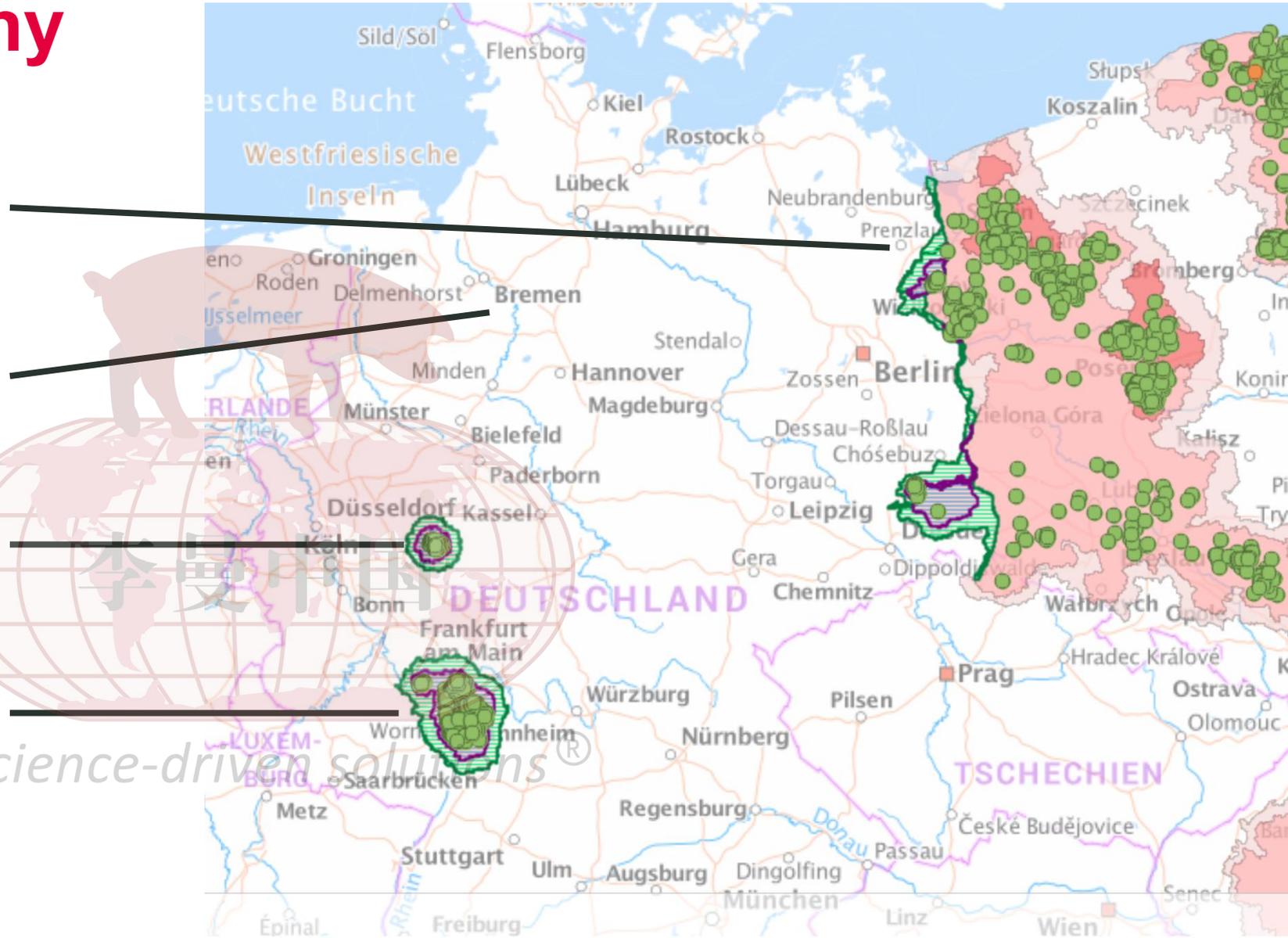
ASF in Germany 德国ASF

Slow spread by wild boars
野猪传播缓慢

Domestic pigs / cleared
家猪 / 已清除

Italian strain in wild boars
野猪中的意大利毒株

Eastern strain in wild boars
野猪东部毒株



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ASF in Germany 德国ASF

Rarely seen in domestic pigs, but increasingly observed in wild boars ...

在国内猪中很少见，但在野猪中越来越多地观察到...

- Excellent biosecurity on farms (e.g. double fenced, etc.)
- 农场的生物安全良好（例如双层围栏等）
- Regular veterinary inspections depending on herd size & type
- 定期兽医检查取决于畜群规模和类型
- Feeding leftovers to pigs is strictly prohibited in the EU
- 在欧盟，严禁将剩余饲料喂给猪
- Infections are managed by stamping out and destroying carcasses
- 通过扑杀和销毁尸体来控制感染

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Control measures 控制措施

Early Detection & Surveillance

早期检测与监测

Implementing robust systems for early detection and continuous surveillance to monitor ASF outbreaks

实施强有力的早期检测和持续监测系统，以监测非洲猪瘟疫情

>450'000 hunters in Germany

>450,000名德国猎人

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Control measures 控制措施

Zoning & Fencing

分区和围栏

Establishing zones and physical barriers to contain and prevent the spread of the disease

建立隔离区和物理屏障，遏制和防止疾病传播

>>> NO hunting in fenced areas

>>> 禁止在围栏区域内狩猎



Control measures 控制措施

Public Awareness & Biosecurity Audits

公众认知和生物安全审计

Raising public awareness and
conducting regular biosecurity audits
to ensure compliance with control
measures

提高公众意识并定期开展生物安全审计，
以确保控制措施的合规性



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Control measures 控制措施

Cross-border Cooperation

跨境合作

Collaborating with neighbouring countries through initiatives like GF-TADs (Global Framework for the Progressive Control of Transboundary Animal Diseases) to manage and control ASF

通过全球逐步控制跨界动物疾病框架（GF-TAD）等倡议与邻国合作，管理并控制非洲猪瘟



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Control measures 控制措施

Digital Tools for Outbreak Tracking 数字工具用于暴发跟踪
Utilizing digital tools to track and manage ASF outbreaks effectively

利用数字工具有效跟踪和管理非洲猪瘟疫情

- EURL Classical- & African swine fever in Wild Boar Surveillance Database
- 野猪监测数据库中的EURL经典和非洲猪瘟
- GIS - Geographic Information System
- GIS - 地理信息系统
- TRACES - TRAdEControl and Expert System
- TRACES - TRAdEControl和专家系统
- TSIS - Animal disease information system
- TSIS - 动物疾病信息系统
- TSN – Animal disease news system
- TSN-动物疾病信息通报系统



Control measures 控制措施

ADIS is EU Animal Disease Information System



ADIS is EU Animal Disease Information System

Lessons Learned – Successes 经验教训—成功



Early detection and surveillance

早期检测和监测



Zoning and fencing for containment

分区和围栏以进行遏制



Public awareness and biosecurity audits

公众意识和生物安全审计



Cross-border cooperation

跨境合作



Digital tools for outbreak tracking

数字工具用于疫情跟踪

Lessons Not Learned – Challenges

未吸取的教训——挑战



Inconsistent farm-level biosecurity

不一致的农场级生物安全

Underestimation of wild boar role

低估野猪的作用

Fragmented wild boar management

零散的野猪管理

Lack of sustainable funding

缺乏可持续资金

No approved ASF vaccine yet

尚未批准任何ASF疫苗

WOAH Recommendations WOAH建议



Strict biosecurity and early response

严格的生物安全和早期反应



Avoid poor-quality vaccines

避免使用劣质疫苗



Design vaccination programs with exit strategies

设计疫苗接种方案和退出策略



Maintain transparency and reporting

保持透明度和报告



Promote international collaboration

促进国际合作

Outlook 前景

Conclusion 总结

- ASF control shows progress and gaps
- ASF控制显示进展和差距
- Germany's experience highlights vigilance
- 德国的经验强调了警惕
- Lessons must inform policy and practice
- 经验教训必须用于指导政策和实践
- Call to action: global solidarity and science
- 行动呼吁：全球团结和科学
- Preparedness is key to future success
- 准备是未来成功的关键

Future Directions 未来方向

- Wild boar control & management
- 野猪防治与管理
- Invest in ASF vaccine research
- 投资非洲猪瘟疫苗研究
- Harmonize EU and national policies
- 协调欧盟和国家政策
- Expand digital risk assessment tools
- 扩展数字风险评估工具
- Adopt One Health approach
- 采用“同一个健康”方针

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u^b Thank you for your attention!
谢谢大家的关注!

Prof. Dr. med. vet. habil. Prof. h.c. Heiko Nathues, PhD

*Dipl. ECPHM, FTA Schweine, Cert Vet Ed, FHEA
EBVS® European Veterinary Specialist in Porcine Health Management*

- | Head of the Clinic for Swine
- | President of the European Board of Veterinary Specialisation (EBVS)
- | Editor in Chief - Porcine Health Management journal

University of Bern, Vetsuisse-Faculty
Department for Clinical Veterinary Medicine, Swine Clinic
&
University of Bern, Multidisciplinary Center of Infectious Diseases (MCID)

Bremgartenstrasse 109 a
CH-3012 Bern
Tel. +41 (0)31 684 23 44
heiko.nathues@unibe.ch
<http://www.schweineklinik.unibe.ch>