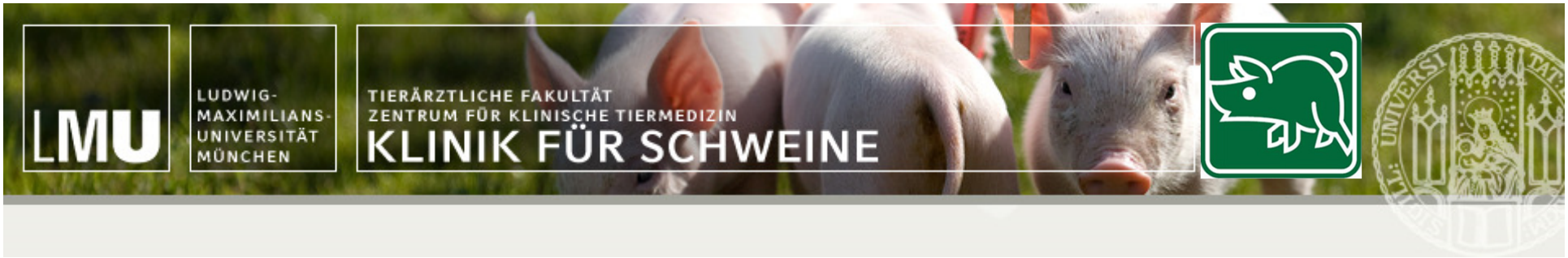
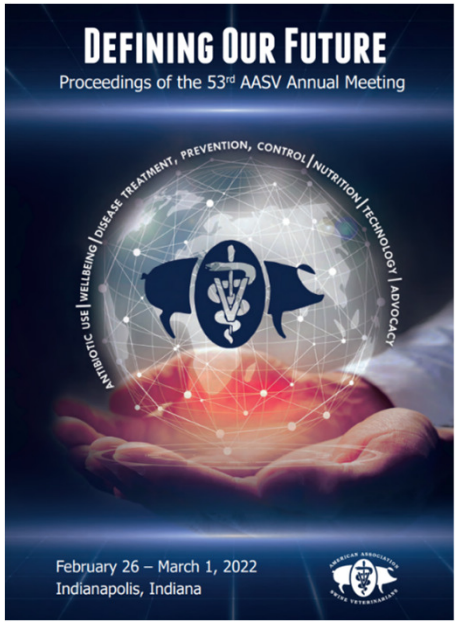
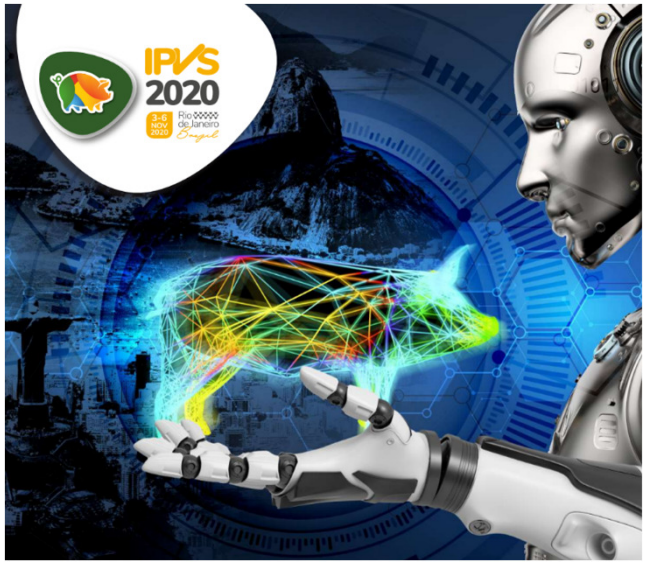


Neues zur Schweinegesundheit von den Kongressen und aus der Welt 2022

M. Ritzmann
Klinik für Schweine
Ludwig-Maximilians-Universität München

Kongresse (2020)-2022





Vorträge

	pubmed 2020-2022	IPVS 2020 nur abstracts	IPVS 2022 Hybrid	ESPHM 2022 Präsenz	AASV 2022 Präsenz
Vorträge Poster		(32) 664	170 461	68 364	111 73
PRRS	741	2	13	9	15
PCV	625	1	7	1	5
Mycoplasmen	180	1	17	4	9
Influenza	669	1	9	6	4
L.i./Brachy./Salm.	422	5	15	5	3
ASP	962	5	12	3	6

Afrikanische Schweinepest

Relevante Themenbereiche:

- Verbreitung/Ausbreitung
- Klinik
- Diagnostik
- Vorgehen bei Ausbrüchen
- Eintragsquellen
- Vakzination

Verbreitung/Ausbreitung

- 13 EU-Staaten positiv
- 17 Länder in Asien positiv
- insgesamt ca. 50 Länder betroffen
- erfolgreiche Eradikation bislang in 2 Ländern (Tschechische Republik und Belgien)
- seit 2021 Ausbrüche in Dominikanischer Republik und auf Haiti

Update on ASF diagnosis and current circulating strains

Carmina Gallardo* and Marisa Arias

European Union Reference Laboratory for African Swine Fever (EURL), Centro de Investigación en Sanidad Animal, CISA, INIA-CSIC, Valdeolmos 28130, Madrid, Spain. Corresponding author: gallardo@inia.csic.es

African swine fever: Prospects for using knowledge of the virus to improve control of this global threat throughout diagnostic point of view

Carmina Gallardo* and Marisa Arias

European Union Reference Laboratory for African Swine Fever (EURL), Centro de Investigación en Sanidad Animal, CISA, INIA-CSIC, Valdeolmos 28130, Madrid, Spain
Correspondence: gallardo@inia.csic.es

Verbreitung/Ausbreitung

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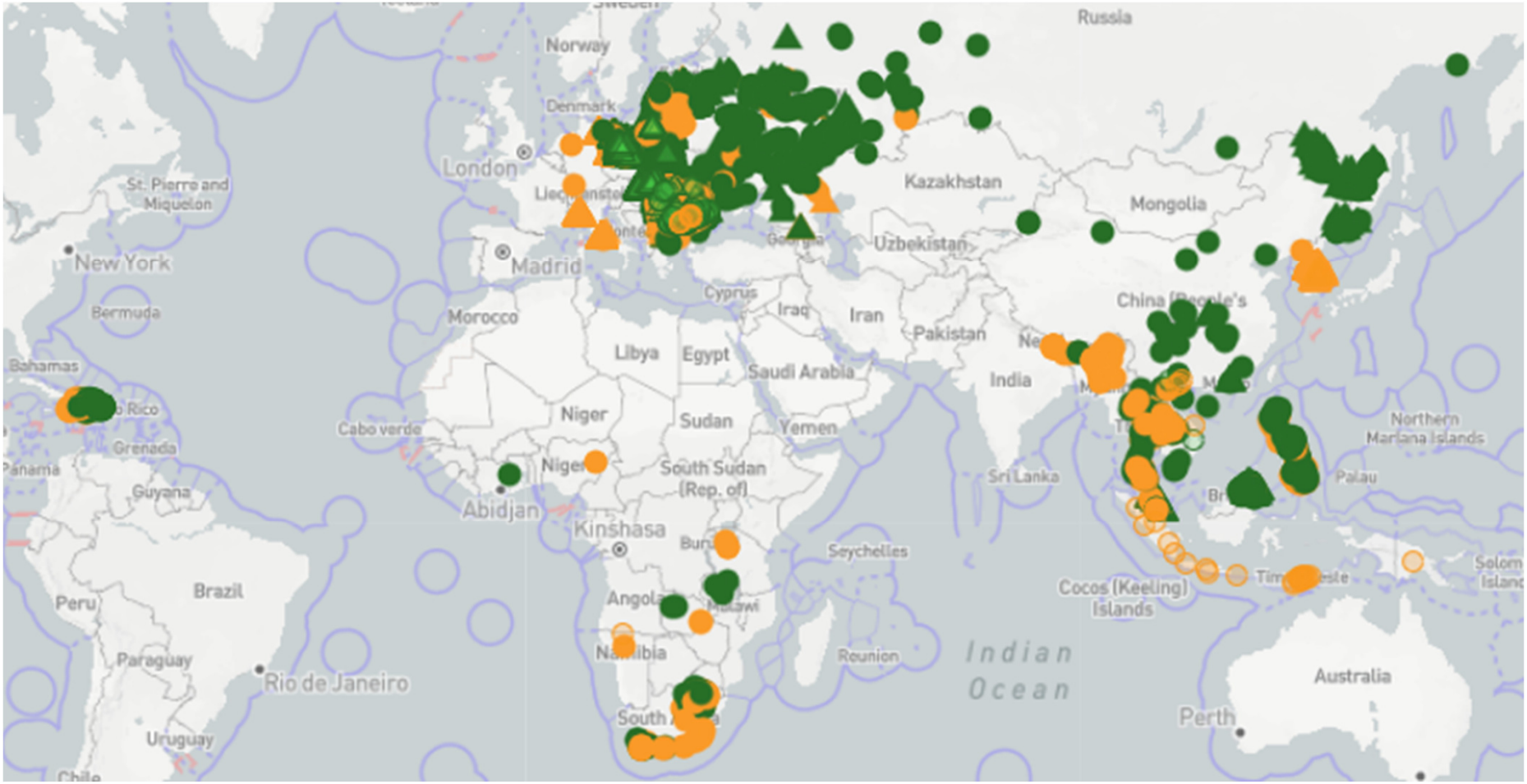
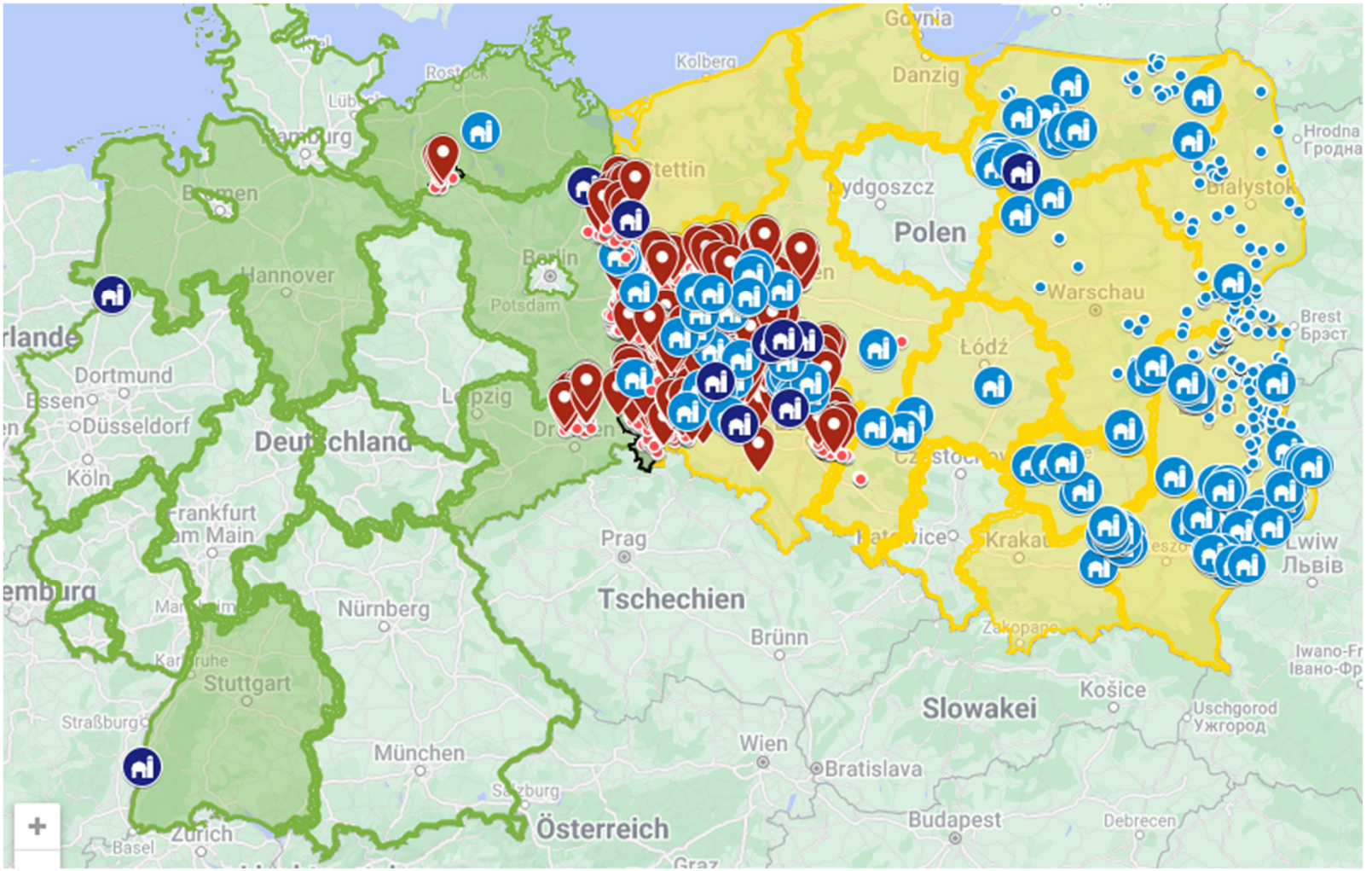


Stand: 01.09.2022 © Klinik für Schweine

OIE, 01.09.2022

Verbreitung/Ausbreitung

Ausbrüche in Deutschland und Polen seit 2020:



Stand: 01.09.2022 © Klinik für Schweine

Pig progress, 29.08.2022

Verbreitung/Ausbreitung

Stand: 01.09.2022 © Klinik für Schweine

Pig progress, 29.08.2022

Verbreitung/Ausbreitung

- 24 Genotypen
- Mutationsrate <0,3%
- 139 Vollgenomsequenzen bislang detektiert
- Isolate in Dominikanischer Republik zeigen 99,99% Übereinstimmung mit Isolaten aus Georgien, 2007

Update on ASF diagnosis and current circulating strains

Carmina Gallardo* and Marisa Arias

European Union Reference Laboratory for African Swine Fever (EURL), Centro de Investigación en Sanidad Animal, CISA, INIA-CSIC, Valdeolmos 28130, Madrid, Spain. Corresponding author: gallardo@inia.csic.es

Table 1: Percentage of identity amongst 41 ASFV genotype II isolates (39 from Europe and Asia and 2 from Africa) based on the comparative analysis of the whole genome sequences available at Genbank (cover >90%)

ASFV	Country	Year	Percentage of identity	Cover
Georgia2007/1	Georgia (index case)	2007	100,00%	100%
Moldova2017/1	Moldova	2017	99,99%	100%
Arm/07/CBM/c2	Armenia	2007	99,99%	100%
Hanoi_2019	Vietnam	2019	99,99%	100%
Korea/pig/Yeoncheon1/2019	Korea	2019	99,98%	100%
CzechRepublic2017/1	Czech Republic	2017	99,98%	100%
Belgium2018/1	Belgium	2018	99,98%	100%
Pig/HLJ/2018	China (index case)	2018	99,98%	100%
HU_2018	China	2018	99,98%	100%
Timor-Leste/2019/1	Timor Leste	2019	99,98%	100%
Belgium/Etalle/wb/2018	Belgium	2018	99,98%	100%
Pol18_28298_O111	Poland	2018	99,98%	100%
ASFV/pig/China/CAS19-01/2019	China	2019	99,98%	100%
China/2018/AnhuiXCGQ	China	2018	99,98%	100%
ASFV-wbBS01	China	2018	99,98%	100%
ASFV/POL/2015/Podlaskie	Poland	2015	99,98%	100%
Pol17_31177_O81	Poland	2017	99,98%	100%
CN/2019/InnerMongolia-AES01	Mongolia	2019	99,98%	100%
ASFV/LT14/1490	Lithuania2	2014	99,98%	100%
GZ201801	China	2018	99,98%	100%
ASFV/Kabardino-Balkaria19/WB-964	Russia	2019	99,98%	100%
ASFV/Amur19/WB-6905	Russia	2019	99,98%	100%
NgheAn_2019	Vietnam	2019	99,98%	98%
VNUA--05L1/HaNam/VN/2020	Vietnam	2020	99,98%	98%
Estonia2014	Estonia	2014	99,98%	94%
Germany2020/1	Germany	2020	99,97%	100%
Wuhan2019-1	Wuhan	2019	99,97%	100%

Verbreitung/Ausbreitung

- 24 Genotypen
- Mutationsrate <0,3%
- 139 Vollgenomsequenzen
  bislang detektiert
- bei Wildschweinen in
  Europa bislang 7 Varianten

Update on ASF diagnosis and current circulating strains

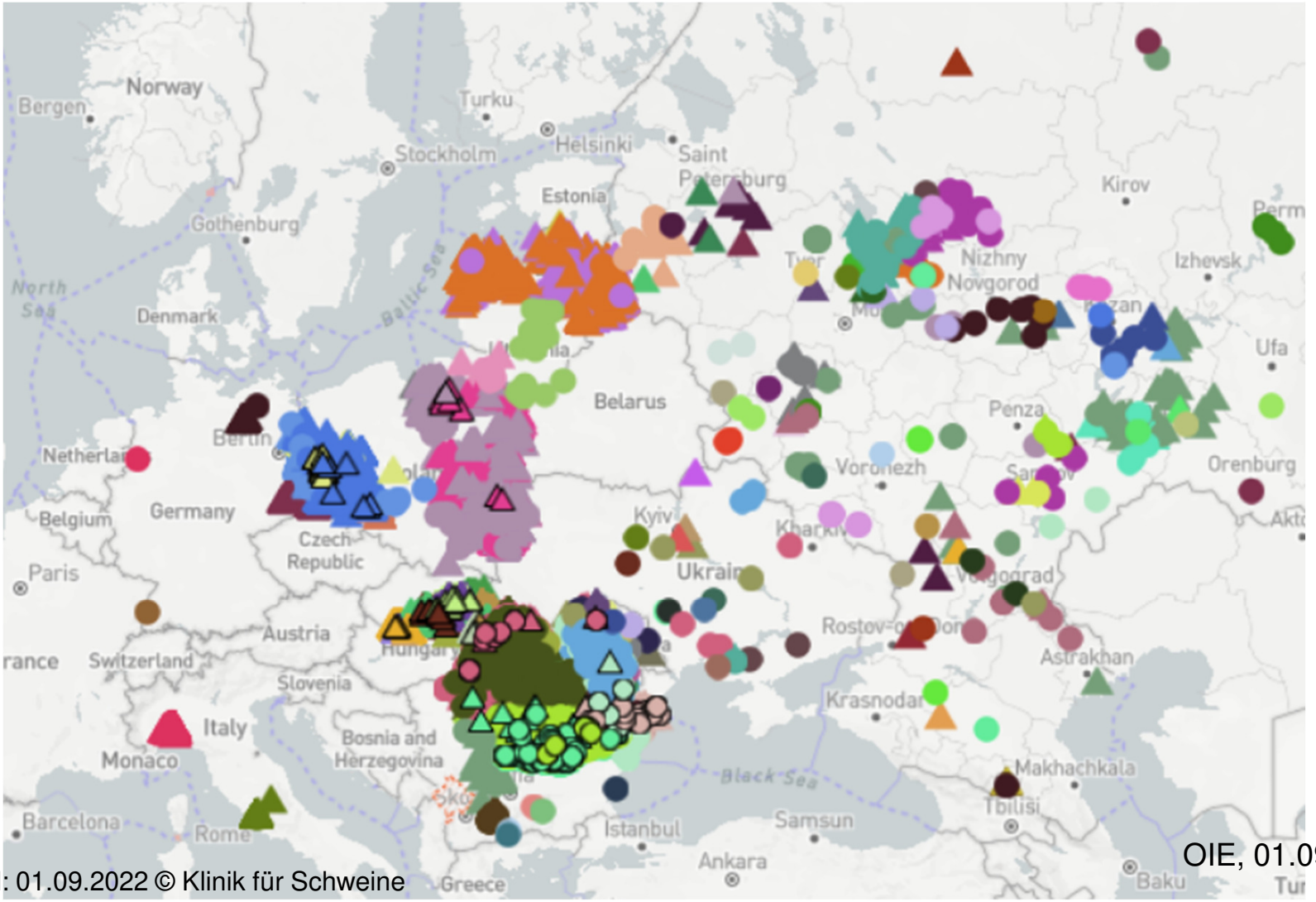
Carmina Gallardo* and Marisa Arias

European Union Reference Laboratory for African Swine Fever (EURL), Centro de Investigación en Sanidad Animal, CISA, INIA-CSIC, Valdeolmos 28130, Madrid, Spain. Corresponding author: gallardo@inia.csic.es

Figure 1. Phylogenetic tree showing all available ASFV complete genome sequences that share a cover > 90% (n=139).

Verbreitung/Ausbreitung

Ausbrüche 01.01.2021-01.09.2022:



OIE, 01.09.2022

Klinik und Ausscheidung

A current global view of the asf situation

Prof. Dr. Jose Sanchez-Vizcaino

University Complutense of Madrid
Av. Puerta de Hierro, s/n 28040 Madrid, Spain
Correspondence: jmvizcaino@ucm.es

Update on ASF diagnosis and current circulating strains

Carmina Gallardo* and Marisa Arias

European Union Reference Laboratory for African Swine Fever (EURL), Centro de Investigación en Sanidad Animal, CISA, INIA-CSIC, Valdeolmos 28130, Madrid, Spain. Corresponding author: gallardo@inia.csic.es

- in verschiedenen Ländern (z.B. Polen, Estland) „weniger“ virulente Isolate nachgewiesen
- Letalität z.T. geringer (80-90%)
- einzelne Tiere mit unspezifischen Symptomen und Nachweis von Antikörpern gegen ASP
- Hinweise auf Übertragung auf andere Tiere
- „Carrier“ Tiere bis 2 Monate bewiesen
- seropositive Tiere können bis 3 Monate nach Infektion Virus ausscheiden

Klinik und Ausscheidung

Usefulness of ASF diagnostic techniques in the prevention and control of the disease

Carmina Gallardo*, Raquel Nieto, Alejandro Soler, Jovita Fernández-Pinero, Marisa Arias

European Union Reference Laboratory for African Swine Fever (EURL), Centro de Investigación en Sanidad Animal, INIA-CISA, Valdeolmos 28130, Madrid, Spain.
*Corresponding author: gallardo@inia.es

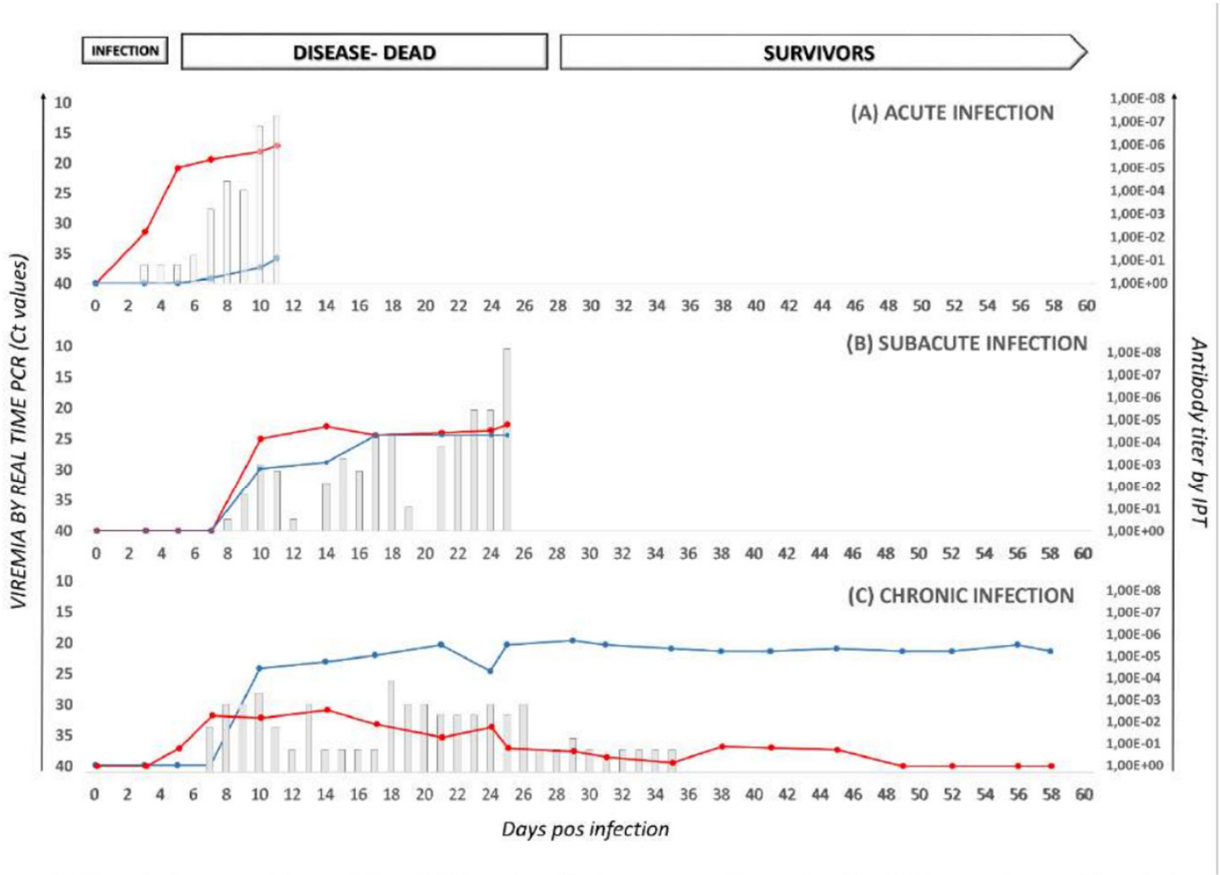


Figure 1. Viremia (measured by real-time PCR) and antibody response (determined by IPT) over time and in relation to the stage of ASF virus infection, as observed in European domestic pigs infected with genotype II ASFV isolates circulating in the EU (2014-2019). Clinical score, expressed in bars, overlapped with viremia and antibody response.

Klinik und Diagnostik

Betrieb in Polen:

Tag 1:	2 Sauen verendet
Tag 2:	1 Abteil: Anorexie, Fieber
	Organ-/Blutproben entnommen
Tag 3:	Proben negativ auf ASP
Tag 4:	Verdacht: PRRS, SIV, Salmonellose: Behandlung
Tag 5-8:	weitere Tiere verendet
Tag 8:	Entnahme 480 Blutproben und Organe
Tag 9:	ASP positiv
ab Tag 11:	Tötung aller Tiere

Klinik und Diagnostik

Betrieb in Polen:

- nur Organproben waren positiv
- alle Blutproben waren negativ
- Klinik unspezifisch
- „langsamer“ Verlauf
- Tag 1 bis Tag 9: 135 von 23.680 Tieren verendet
- rechnerische Mortalität: 0,5%

Klinik und Diagnostik

- große und kleine Betriebe betroffen
- Mortalität in kleinen Betrieben rechnerisch höher, wird aber häufig nicht als ASP erkannt

Anzahl Schweine im Betrieb	verendet	Mortalität
2	2	100%
47	23	49%
222	1	0,5%
34.745	49	0,14%
98.852	680	0,7%

Eight years of African swine fever (ASF) in Poland – domestic pigs outbreaks

Maciej Frant[1*]; Krzysztof Niemczuk[2];Anna Szczotka-Bochniarz[1]
[1]*Natoinal Reference Laboratory for ASF, Department of Swine Diseases, National Veterinary Research Institute, Puławy, Poland,* [2]*Director General, National Veterinary Research Institute, Puławy, Poland,* maciej.frant@piwet.pulawy.pl

Table 2. ASF outbreaks in Poland in the years 2014-2021in farms differing in size

Year	Small farms[a]	Medium farms[b]	Large farms[c]
2014	2 (100%)	0	0
2015	1 (100%)	0	0
2016	11 (55%)	6 (30%)	3 (15%)
2017	44 (54%)	32 (40%)	5 (6%)
2018	54 (50%)	32 (29%)	23 (21%)
2019	13 (27%)	14 (29%)	21 (44%)
2020	50 (49%)	32 (31%)	21 (20%)
2021	29 (23%)	58 (47%)	37 (30%)
Total:	204 (42%)	174 (35%)	110 (23%)

[a]small farm:- up to 20 pigs; [b]medium farm: 21 - 100 pigs; [c]large farm: above 100 pigs

Klinik und Diagnostik

- große und kleine Betriebe
  betroffen
- Mortalität in kleinen Betrieben
  rechnerisch höher, wird
  aber häufig nicht als ASP erkannt

Anzahl Schweine im Betrieb	verendet	Mortalität
2	2	100%
47	23	49%
222	1	0,5%
34.745	49	0,14%
98.852	680	0,7%

Anzahl Schweine in Betrieben in Estland	Mortalität
1 - 10	29,7%
11 - 100	25%
101 - 1000	7,5%
> 1000	0,7 (0,04 - 2,5)%

Viltrop, 2022

Diagnostik

- höherer Nachweis in Blutproben von Ferkeln (PS) als von Sauen (SS)
- OFS und Umgebungsproben niedrige Nachweisraten

Comparison of probability of detecting African Swine Fever virus among different sample types in the farrowing rooms

Peng LI[1] ; Xiaowen LI[12]; Weisheng WU[1]; Zhichun Jason YAN[1*];
[1]*Swine Research Institute of New Hope Liuhe Co., Ltd,* [2]*Shandong New hope Liuhe Agriculture and Animal Husbandry Technology Co. LTD., Dezhou,Shandong, China,* jasonynh@126.com

Table 1. Detection of ASFV DNA by qPCR in different sample types.

	Tail Blood	OP swab	SS	PS	FOF	AE samples
No. of Pos	7	14	21	30	21	22
Positive rate	21.87%	43.75%	65.63%	93.75%	65.63%	68.75%

Daily monitoring and analysis of African swine fever virus in a large-scale pig farm in China

Yufu An[1*]; Yanyun Huang[2];Hao lv[1]

[1]*PIG PEACE (Hangzhou) Technical Service Co., Ltd.,*[2]*Prairie Diagnostic Services Inc,* 421655929@qq.com

Materials and Methods

An attenuated ASFV-infected herd was identified. Thirty-two litters within a 120 crates farrowing room were conveniently selected to collect each of the sample types. From each litter, sow precaval vein serum (SS) samples, sow oropharyngeal (OP) swabs, family oral fluid (FOF), individual piglet precaval vein serum (PS), aggregated environmental (AE) samples refering to pooled samples of udder swabs and swabs of feeders and drippers at the time of 3 days before weaning were collected. Each sample was collected in a biosecure manner, i.e to change gloves and collectors for each sample. DNA extraction and qPCR was performed using a DNA extraction machine Gene Pure Pro 96 from Bioer company (Hangzhou, China) and the MRD company (Beijing, China) according to the manufacturer’s instructions. Data was collected and analyzed using SAS.

- in OFS 2 - 4 Wochen später als in Blutproben nachweisbar

Diagnostik

Daily monitoring and analysis of African swine fever virus in a large-scale pig farm in China

Yufu An[1*]; Yanyun Huang[2];Hao lv[1]

[1]*PIG PEACE (Hangzhou) Technical Service Co., Ltd.,*[2]*Prairie Diagnostic Services Inc, 421655929@qq.com*

A Practical Lymph Node Sampler to faciliate Diagnosis of African Swine Fever Virus

Xiaowen Li[1,2]; Yang Li[1,2]; Jingtao Li[1]; Peng Yuan[1]; Zhichun Yan[1*]

[1]*Swine Research Institute of New Hope Liuhe Co., Ltd,* [2]*Shandong New hope Liuhe Agriculture and Animal Husbandry Technology Co. LTD., Dezhou, Shandong, China,* jasonynh@126.com

- Lymphknotenbioptate für frühzeitige Erkennung gut geeignet

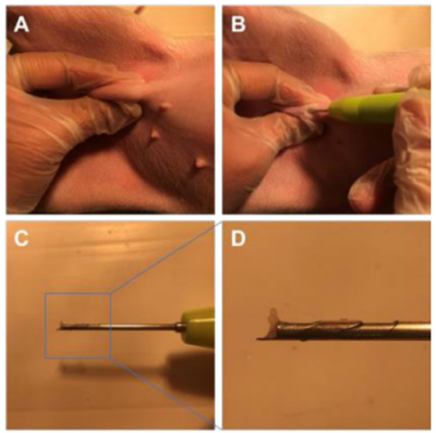


Figure 1. Three steps to obtain inguinal lymph node samples using the lymph node sampler. A. Find and pinch the inguinal lymph node. B. Puncture the skin and tissue with sampler. C. Pull out the sampler and press the handle to squeeze the tissue out. D. Enlarged view of squeezed lymph node tissue.

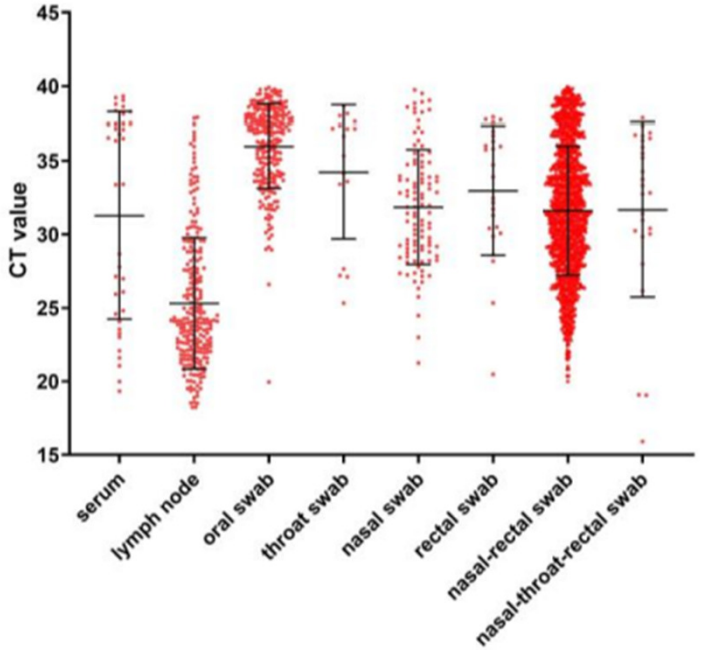


Figure 2. The ASFV DNA in lymph nodes and other kinds of collected samples. Eight kinds of porcine samples were collected, and their ASFV content was detected by qPCR shown as Ct values.

Diagnostik und Monitoring

Eradikationen abhängig von:

- Überwachungsprogramm
- Zeitpunkt des Primäreintrages
- „Carrier“ Tieren
  (chronisch/subklinisch infizierte)
- Stichprobenschlüssel
- Art der Probe (Persistenz in
  Knochenmark, Milz, Niere relativ
  lang, für flächendeckende
  Überwachungsprogramme
  jedoch weniger geeignet)

African swine fever: Prospects for using knowledge of the virus to improve control of this global threat throughout diagnostic point of view

Carmina Gallardo* and Marisa Arias

European Union Reference Laboratory for African Swine Fever (EURL), Centro de Investigación en Sanidad Animal, CISA, INIA-CSIC, Valdeolmos 28130, Madrid, Spain
Correspondence: gallardo@inia.csic.es

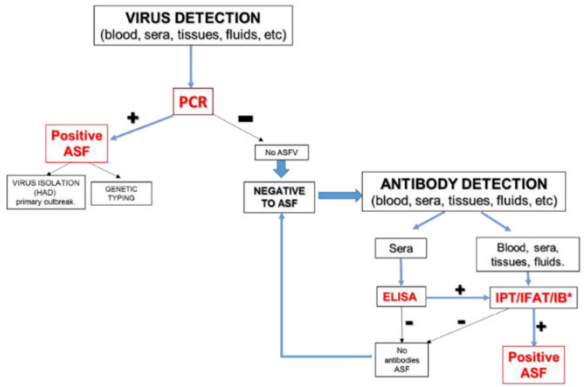


Figure 4: schematic representation of workflow of ASF diagnosis in case of suspicious. *Source: webpage of the ASF-EU reference laboratory (EURL);* https://asf-referencelab.info/asf/en/

EFFECTIVE ASFV SURVEILLANCE BASED ON ANTIBODY AND NUCLEIC ACID DETECTION: THE EXPERIENCE OF VIETNAM

L. Gimenez-Lirola [1], W. Nelson [2], R. Rauh [2], N. Venkatswaran [2], K. Venkatswaran [2], A. Saunders [2], J. Walker [2]
[1]*Innoceleris LLC*
[2]*Tetracore Inc*

Monitoring bei Wildschweinen

- passive Überwachung:

  verendete Wildschweine:

  40 - 72% positiv

- aktive Überwachung:

  erlegte Wildschweine:

  1 - 2% positiv

- seit 2017 etwa gleich hohe

  Nachweisraten

Passive and Active Surveillance of African Swine Fever in Wild Boars in Poland in the years 2014-2021

Anna Gal-Cisoń[1], Magdalena Łyjak[1], Dominika Borowska[1], Maciej Frant[1*]; Anna Szczotka-Bochniarz[1]
[1]*National Reference Laboratory for ASF, Department of Swine Diseases, National Veterinary Research Institute, Puławy, Poland,* maciej.frant@piwet.pulawy.pl

Table 1. Passive surveillance: the number of tested wild boars and the number (%) of positive wild boars in 2014-2021 in zones II-III

Year	II and III zones					
	found dead wild boar			road-killed wild boar		
	tested	ASF(+)	% ASF(+)	tested	ASF(+)	% ASF(+)
2014	115	46	40,00%	68	0	0%
2015	130	67	51,00%	53	0	0%
2016	149	63	42,00%	95	3	3,15%
2017	1241	879	70,80%	137	6	4,38%
2018	4732	3453	72,97%	709	63	8,89%
2019	4699	3065	65,23%	1384	36	2,60%
2020	7156	5014	70,07%	1846	74	4,01%
2021	5349	3671	68,63%	1530	61	3,99%

Table 2. Active surveillance: the number of tested wild boars and the number (%) of positive wild boars in 2015-2021 in zones II-III

Year	II and III zones (hunted wild boar)		
	tested	ASF(+)	% ASF(+)
2015	3387	14	0,41%
2016	4221	24	0,56%
2017	6016	117	1,95%
2018	20590	303	1,47%
2019	41758	612	1,47%
2020	83962	1184	1,41%
2021	70282	1026	1,46%

Maßnahmen bei Wildschweinen

Effektive Maßnahmen:

- Zäune
- Reduktion Population
- Überwachungsprogramme
- Entfernung Kadaver

Wild boar/feral pigs and African swine fever: the management options

Christian Gortázar*[1], David Relimpio[1]

*[1]SaBio Instituto de Investigación en Recursos Cinegéticos IREC (Universidad de Castilla La Mancha & CSIC), Ciudad Real, Spain. *Corresponding author: christian.gortazar@uclm.es*

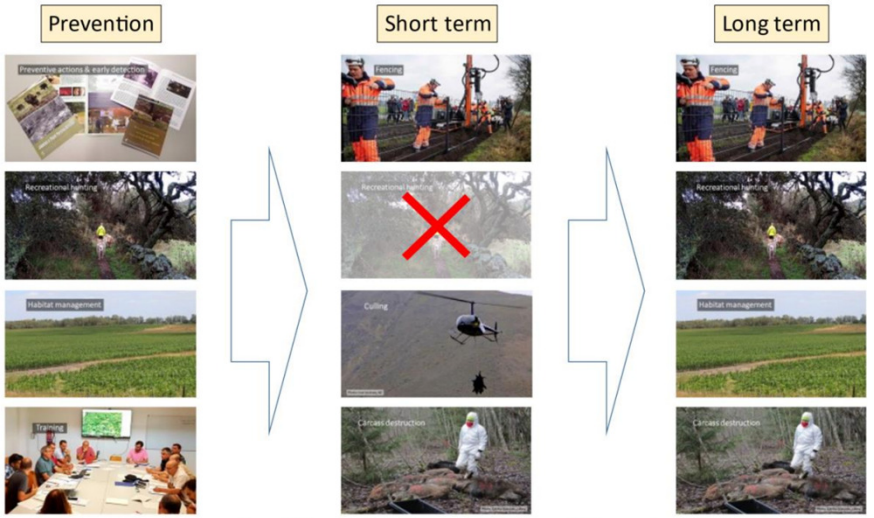


Figure 1. Intervention options for African swine fever control in wild boar depend on the epidemiological situation.

ASF successful eradication stories

Petr Šatrán, DVM, Ph.D.
Director of Veterinary Section and Deputy CVO
State Veterinary Administration, Czech Republic

Entsorgung Kadaver außerhalb Europas

- Vergraben („Kompostieren“ in etlichen Ländern verbreitet)
- Tenazität hoch
- zuvor „zermahlen“ effektiv

Responding to animal disease outbreaks with a One Health approach

Gary Flory,
G. A. Flory Consulting, Mt. Crawford, Virginia

Figure 4: Oklahoma Above Ground Burial research plots.

Figure 3: Compost piles for ASF study in Vietnam

Figure 2: ASF infected pigs for composting project in Vietnam.

Entsorgung Kadaver außerhalb Europas

- Überflutungen in China im Juni 2020
- vermehrt ASP-Ausbrüche über Grundwasser durch vergrabene Schweine
- zusätzlich MKS-Ausbrüche

USDA United States Department of Agriculture

Emergency Response

Guidelines for the Emergency Use of Above Ground Burial to Manage Catastrophic Livestock Mortality

January 2021

Figure 4. Chinese provinces affected by floods and surge of ASF cases

SHIC Stand: 05.08.20

Maßnahmen bei Wildschweinen

Erfolge/Misserfolge abhängig von:

- Zeitpunkt Detektion
- Fläche der betroffenen Region
- Populationsdichte
- geografische Gegebenheiten
  (z.B. Sümpfe, militärische Gebiete)
- politische Gegebenheiten
  (z.B. Zäune)
- jagdliche Möglichkeiten
  (z.B. Berufsjäger)
- Nähe zu Freilandhaltungen, Hinterhofhaltungen

Wild boar/feral pigs and African swine fever: the management options

Christian Gortázar*[1], David Relimpio[1]

*[1]SaBio Instituto de Investigación en Recursos Cinegéticos IREC (Universidad de Castilla La Mancha & CSIC), Ciudad Real, Spain. *Corresponding author: christian.gortazar@uclm.es*

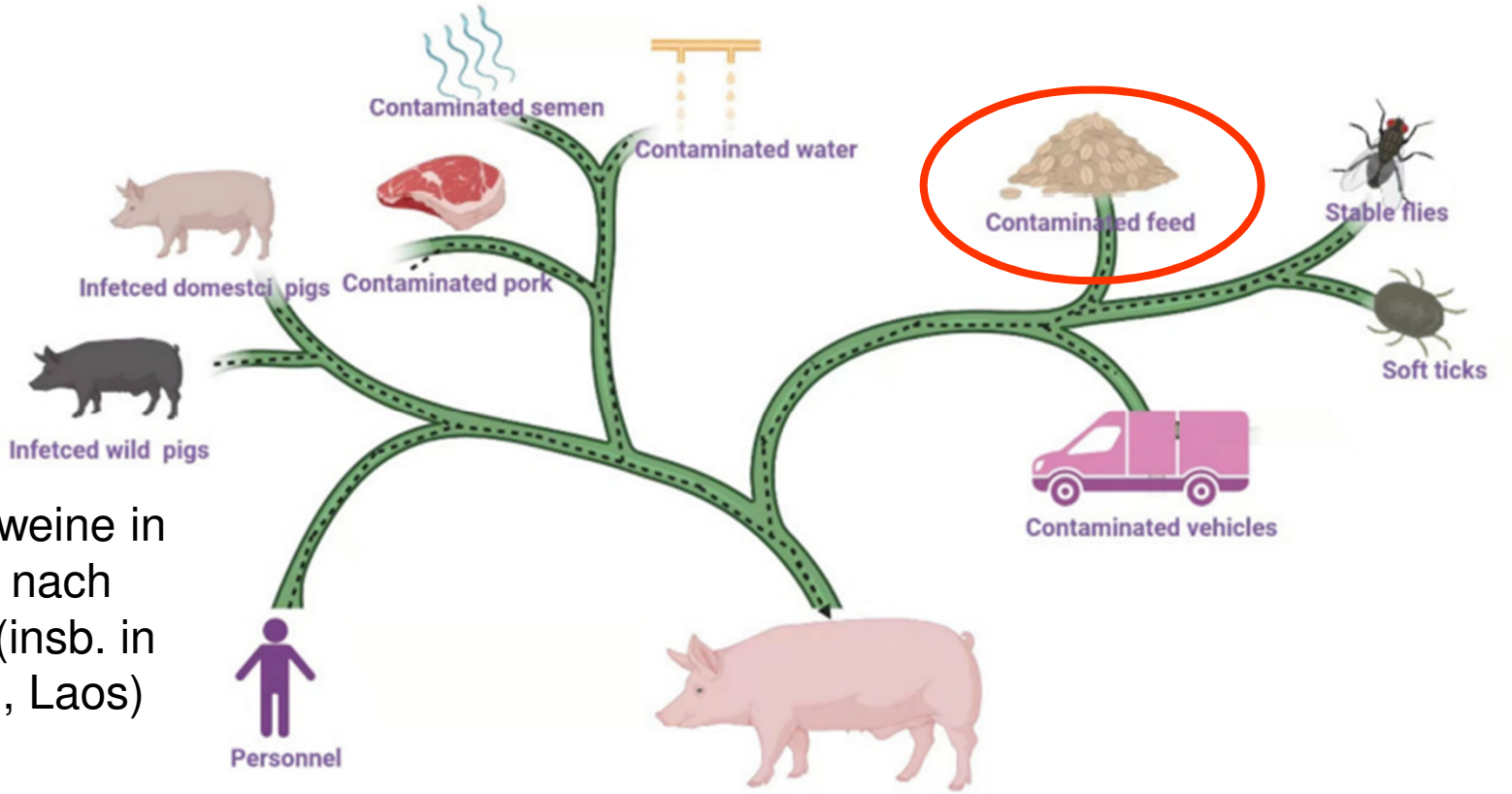
Table 1. Currently available field evidence on interventions for ASF control in infected wild boar populations

References	Region	Type	Interventions*	Outcome
EFSA et al. (2020)	Czechia	Local outbreak, early detected	In the infected zone, initially S & F, later S, F, C. In surrounding counties, C	Success
Dellicour et al. (2020)	Belgium	Local outbreak, detected after several months	In the infected zone, S, F, C. In surrounding counties, C	Success
Wozniakowski et al. (2021)	Poland	Epidemic front	In the infected zone, S, F, C. In surrounding counties, C	Failure
Jo & Gortázar (2021)	South Korea	Epidemic front	In infected zones, initially, silent professional C, F and S (restricted due to mined zones); later, amateur C and S, leading to ASF spread. In surrounding counties, F	Failure
Sauter-Louis et al. (2020)	Germany	Epidemic front	S and F (restricted due to large area, wetlands, and legal issues), C in surrounding counties	Failure
E. Ferroglio (pers. comm.)	Italy	Large outbreak, detected late	Still in phase of zoning and intervention planning**	Uncertain

* C = wild boar culling; F = fencing; S = carcass search and destruction. ** As of 1 March 2022.

Eintragsquellen

Einschleppungen in Betriebe insb. in Asien:



Wildschweine in Asien je nach Region (insb. in Vietnam, Laos)

The reasonable entry process for personnel in the post-ASF era

Yufu An[1*]; Yanyun Huang[2];Zhiyun Chen[1]

[1]*PIG PEACE (Hangzhou) Technical Service Co., Ltd.,*[2]*Prairie Diagnostic Services Inc, 421655929@qq.com*

Liu et al., 2021

Eintragsquellen

- bislang wenig Erfahrung zum Eintrag über Futtermittel
- Tenazität in verschiedenen Futtermitteln bis 30 Tage bewiesen
- Nachweis von ASPV in Futtermitteln in China (1-2% der Fertigfuttermittel positiv)

African swine fever and plant-based feed ingredients: Canada's approach to risk management of imported feed products

Sharon Calvin[1]; Amy Snow[2]; Egan Brockhoff[3]
[1]Animal Health Risk Assessment and Intelligence Section, Canadian Food Inspection Agency, Ottawa, [2]Canada; Foreign Animal Disease Section, Canadian Food Inspection Agency, Ottawa, Canada; [3]Canadian Pork Council, Ottawa, Ontario

US feed security response

Cassandra Jones, PhD
Kansas State University, Manhattan, Kansas

Strategies to minimize the risk of pathogen spread via feed

Cassandra Jones*, Jordan Gebhardt, Jason Woodworth, Chad Paulk

Department of Animal Sciences & Industry, Kansas State University, Manhattan, Kansas, USA.
*Corresponding author: joinesc@ksu.edu

Comprehensive procedure of responsible animal feed importation from ASFV positive countries

A. Shah; S. Shah; S. Dee, DVM, MS, PhD, Dipl ACVM; R. Cochrane, PhD; A. Wu, PhD; T. Swenson; A. Yang

Table 1: The number of suggested holding days for 99.99% ASFV degradation based on controlled temperatures

Mean holding time for 99.99% degradation	Number of days at 4°C (36.9°F)	Number of days at 15° (59.0°F)	Number of days at 30° (86.0°F)
Conventional soybean meal	143	52	26
DDGS	494	182	26
Vitamin D	39	26	26
Lysine	78	13	13

Eintragsquellen

Häufigste Einschleppungen in Betriebe in China:

- Speiseabfälle
- (z.T. illegaler) Handel von Schweinen
- mangelnde Biosicherheit
- Fahrzeuge / Personen
- Futtermittel

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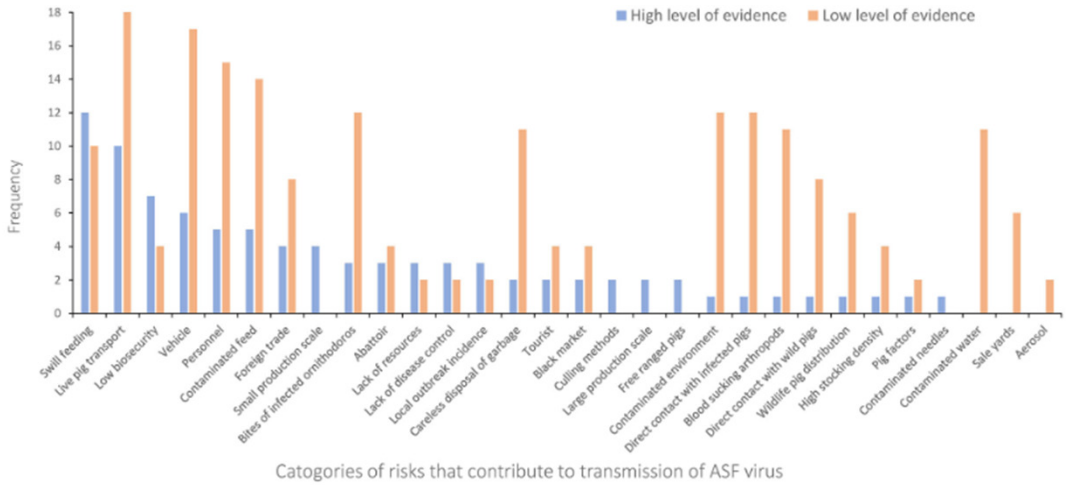
Transboundary and Emerging Diseases
WILEY

REVIEW

Risk factors for the spread of African Swine Fever in China: A systematic review of Chinese-language literature

Jieming Cheng | Michael P. Ward



Cheng und Ward, 2022

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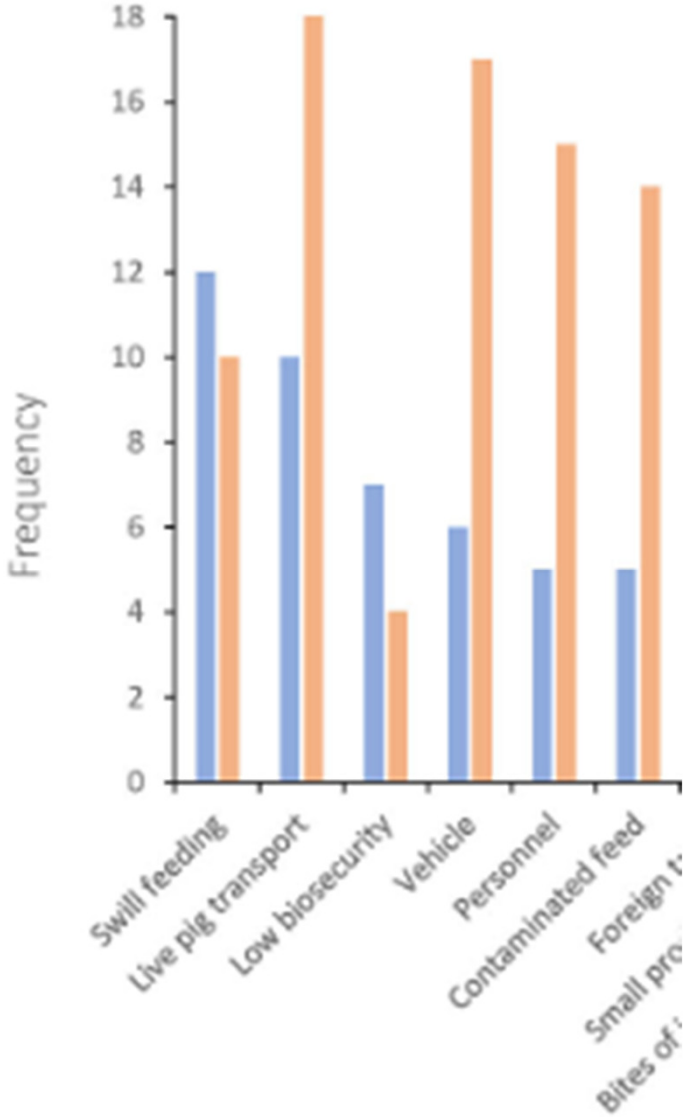


Cheng und Ward, 2022

Situation in China

Schweinepopulation China:

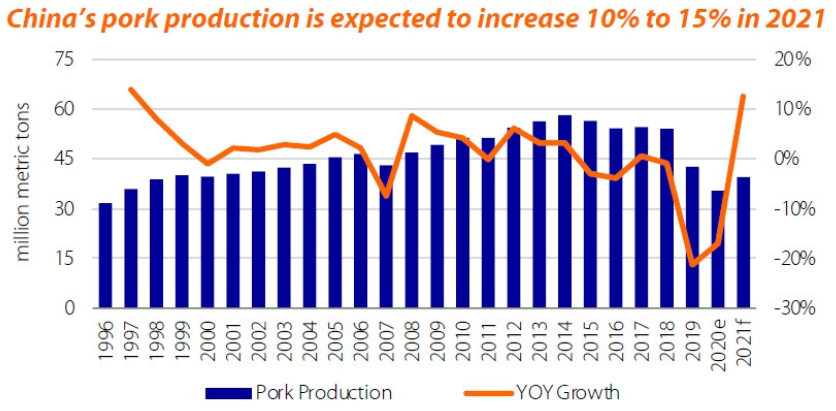
- 95% der Schweine in Haltungen bis 500 Tiere

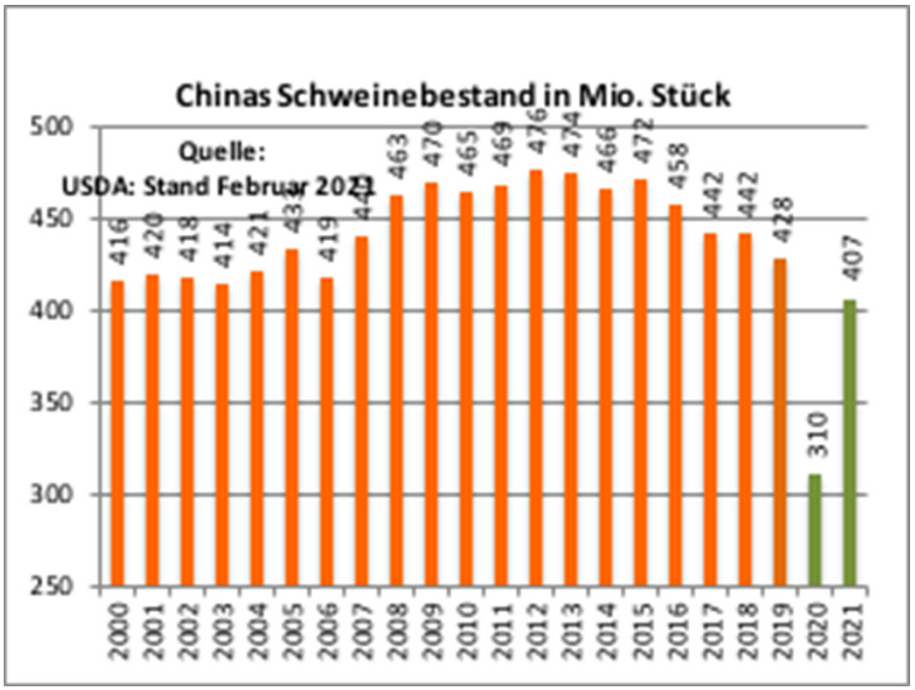
Tendenz:

- 75% der Betriebe bleiben „kleine“ Haltungen
- 25% kommerzielle Betriebe

- bis 2015: Neubau größerer Betriebe nach westlichem Vorbild
  (meist 5.000-8.000 Sauen)
- 2015-2018: Verlagerung in ländliche Regionen (v.a. Nordosten)
- seit 2020: Betriebe wieder vermehrt in Nähe von größeren Städten

Situation in China





Quelle: rabobank Stand: 12.02.22

deutliche Erhöhung in 2021 wird teilweise angezweifelt

- bis 2015: Neubau größerer Betriebe nach westlichem Vorbild

  (meist 5.000-8.000 Sauen)

- 2015-2018: Verlagerung in ländliche Regionen (v.a. Nordosten)

- seit 2020: Betriebe wieder vermehrt in Nähe von größeren Städten

Situation in China

Maßnahmen insbesondere in China:

- Reduktion backyard Haltung
- Verbesserung Biosicherheit
- pelletiertes Futter in großen Betrieben
- PCR-Labore in großen Betrieben

Situation in China

A current global view of the asf situation

Prof. Dr. Jose Sanchez-Vizcaino

University Complutense of Madrid
Av. Puerta de Hierro, s/n 28040 Madrid, Spain
Correspondence: jmvizcaino@ucm.es

Kritische Punkte:

- Einsatz illegaler Impfstoffe (! / ?):
  - vermutlich seit 2020
  - Herstellung in Laboren oder in schweinehaltenden Betrieben
  - ca. 5 - 20 US$ pro Impfdosis
  - teilweise Klinik 6 Monate nach Einsatz von Impfstoffen
  - Nachweis „neuer“ Stämme/Isolate

  - seit 2021 Nachweis von Genotyp I (ähnliche Isolate wie ca.1960 in Portugal)
  - Hinweise auf chronischen Verlauf

Vakzination

- DIVA-Impfstoffe notwendig
- parenterale und orale Impfstoffe notwendig
- ca. 70 (?) Impfstoffkandidaten seit 2015 getestet

Wild boar/feral pigs and African swine fever: the management options

Christian Gortázar*[1], David Relimpio[1]

*[1]SaBio Instituto de Investigación en Recursos Cinegéticos IREC (Universidad de Castilla La Mancha & CSIC), Ciudad Real, Spain. *Corresponding author: christian.gortazar@uclm.es*

Figure 2. Baits developed at IREC institute to deliver vaccines to wild boar.

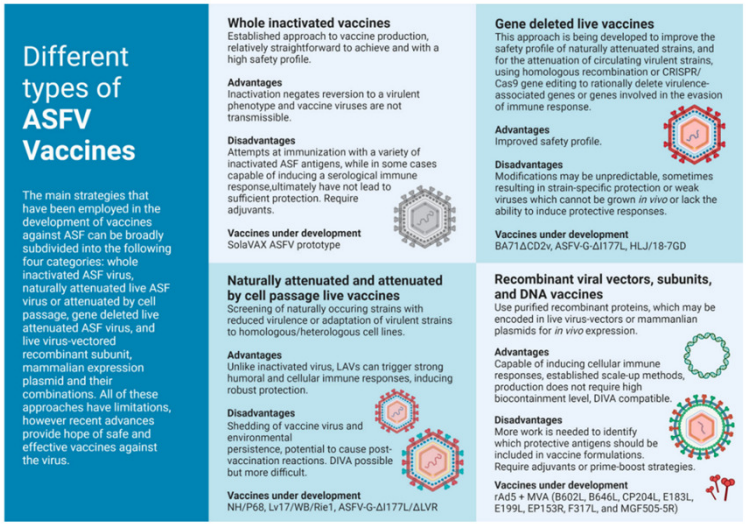
Table 2. Promising Live Attenuated Vaccines developed in 2015–2022. PBMs porcine blood monocyte/macrophages; BMs pig bone marrow cells; COS-1 monkey kidney tissue-derived cells; PAMs primary porcine alveolar macrophages; PIPEC Plum Island porcine epithelial cells, a porcine fetal kidney cell line engineered to express the bovine αVβ6 integrin.

Candidate	ASFV strain	Virulence	p72 genotype	Attenuation strategy	Protection	Production system	References
NH/P68	NH/P68	High	I	Naturally attenuated	Homologous and heterologous strain (L60, Arm07)	PBMs	Gallardo et al., 2012; Leitão et al., 2001a
OURT88/3	OURT88/3	Low	I	Naturally attenuated	Homologous and heterologous strain (OURT88/1, Ug65)	BMs	Boinas et al., 2004b; King et al., 2011; Mulumba-Mfumu et al., 2016; Sánchez-Cordón et al., 2017
Lv17/WB/Rie1	Lv17/WB/Rie1	Low	II	Naturally attenuated	Homologous strain (Armo7)	PBMs	Barasona et al., 2019; Gallardo et al., 2019
BA71ΔCD2v	BA71	Low	I	Gene deleted (CD2v)	Homologous and heterologous strain (E75, Georgia 2007)	COS-1	Lopez et al., 2020; Monteagudo et al., 2017
HLJ/18-7GD	HLJ/18	High	II	Gene deleted (MGF505-1R, MGF360-12L, MGF360-13L, MGF360-14L, MGF505-2R, MGF505-3R, and CD2v)	Homologous strain (ASFV HLJ/18)	PAMs	Chen et al., 2020
ASFV-G-ΔI177L	Georgia 2007	High	II	Gene deleted (I177L)	Homologous strain (Georgia 2007)	PAMs	Borca, Ramirez-Medina, et al., 2020
ASFV-G-ΔI177L/ ΔLVR	ASFV-G-ΔI177L	High	II	Gene deleted (I177L) and cell passage	Homologous strain (Georgia 2007)	PIPEC	Borca, Rai, et al., 2021
SY18ΔI226R	ASFV-SY18	High	II	Gene deleted (I226R)	Homologous strain (ASFV-SY18)	PAMs	Zhang et al., 2021
ASFV-G-ΔA137R	Georgia 2010	High	II	Gene deleted (A137R)	Homologous strain (Georgia 2010)	PAMs	Gladue et al., 2021
ASFV-G-ΔE184L	Georgia 2010	High	II	Gene deleted (E184L)	Homologous strain (Georgia 2010)	PAMs	Ramirez-Medina et al., 2022

Urbano und Ferreira, 2022

Vakzination

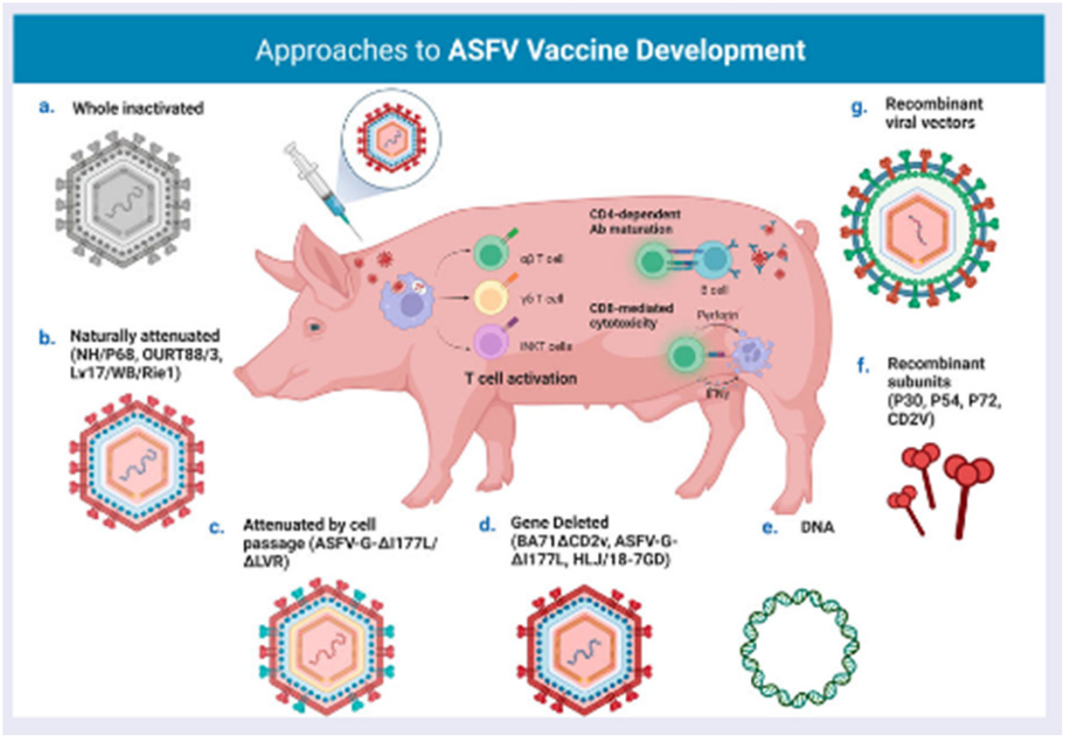
- inaktivierte Impfstoffe
- subunit-Impfstoffe
- Vektorimpfstoffe
- DNA-Impfstoffe
- **attenuierte Impfstoffe**
- **deletierte Impfstoffe**



Development of recombinant live attenuated vaccine candidates in ASF

Manuel V. Borca

Lead Scientist, DVM, PhD. Plum Island Animal Disease Center (PIADC),
Agricultural Research Service (ARS), U.S. Department of Agriculture (USDA)
Greenport, NY 11944, USA
Correspondence: manuel.borca@usda.gov



Urbano und Ferreira, 2022

Vakzination

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Review

mRNA Vaccine Development for Emerging Animal and Zoonotic Diseases

Ting Le [1,†], Chao Sun [1,†], Jitao Chang [1,*], Guijie Zhang [2,*] and Xin Yin [1,*]

experimentelle mRNA-Impfstoffe für Schweine (meist im Mausmodell getestet):
- MKS
- Influenza
- Japanische Encephalitis

zukünftige mRNA-Impfstoffe (?):
- ASP/KSP
- PRRSV
- Coronaviren (PED, TGE)

Vakzination

- in Europa sind derzeit keine Impfstoffe gegen ASP zugelassen

- Impfstoff gegen ASP im Juni 2022 in Vietnam zugelassen

- ungeklärte Todesfälle nach Impfung
- Impfstoff im August 2022 zurückgezogen

NAVET-ASFVAC vaccine (Photo: VNA)

Vietnam suspends African swine fever vaccine after pig deaths

Reuters

HANOI, Aug 24 (Reuters) - Vietnam has temporarily suspended the use of its first home-grown African swine fever vaccine after dozens of pigs inoculated with the shots died this month, state media reported on Wednesday.

The pigs were among around 600 pigs at several farms in the central province of Phu Yen having been injected with the NAVET-ASFVAC vaccine developed by Navetco, a company owned by the agriculture ministry, reported Nhan Dan newspaper.

Reuters, 24.08.2022

Schlussfolgerung

- klinische Anzeichen der ASP sind unspezifisch
- erschwerte Erkennung in kleinstrukturierten Betrieben
- Eintragsquellen sind vielfältig
- Überwachungsprogramme und frühzeitige Erkennung sind zur Kontrolle notwendig
- Biosicherheit relevant für Verhinderung der Einschleppung