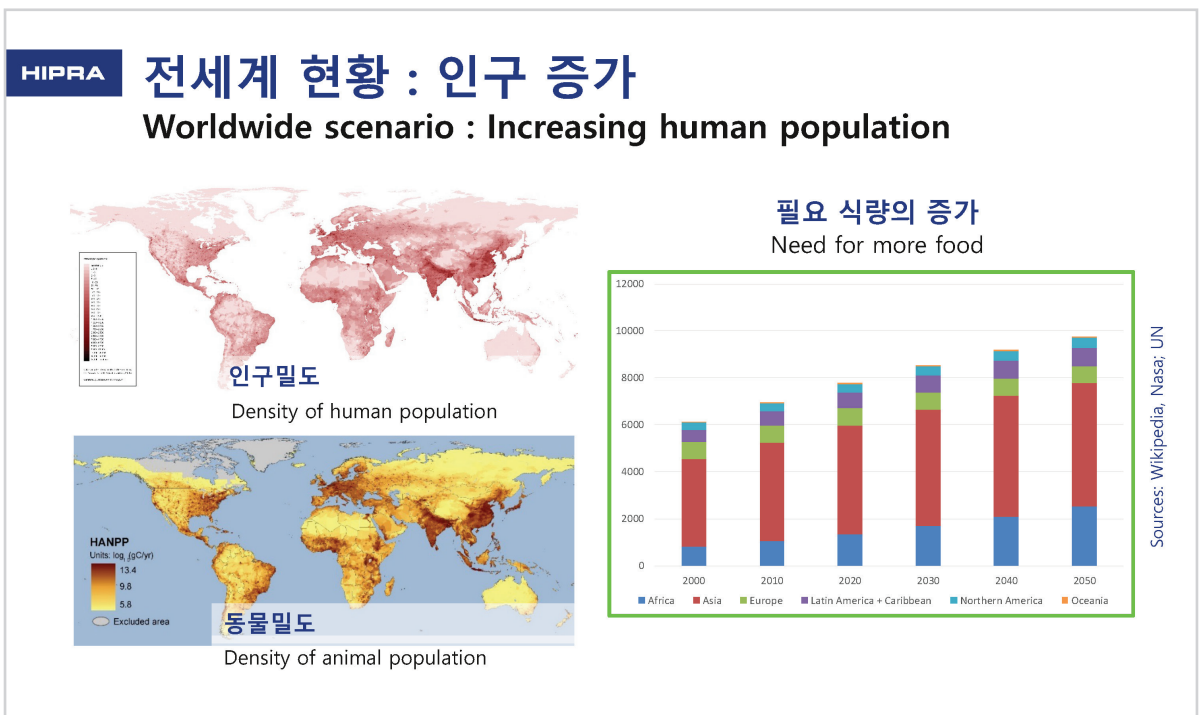
유럽, 스페인의 양돈 트렌드와 양돈장 우수사례



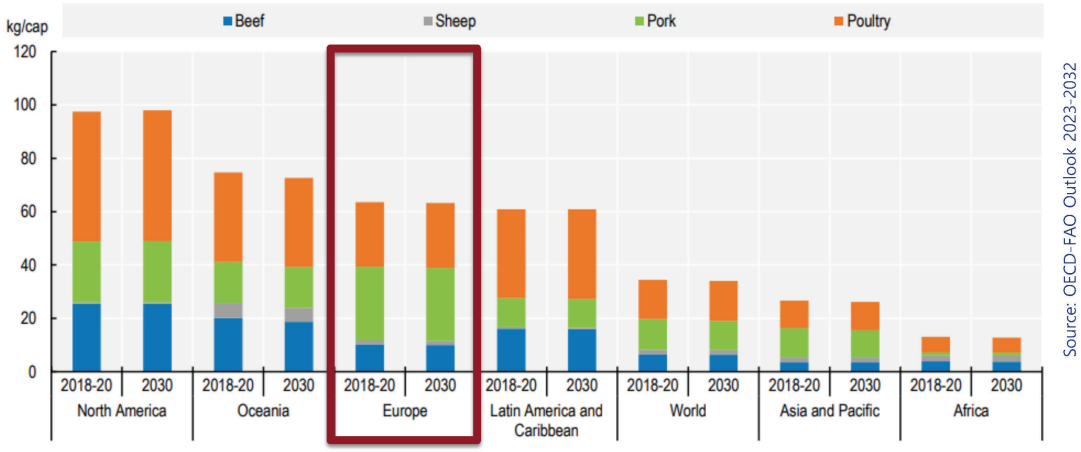
페르난도 데 메르헬리나(Fernando de Mergelina)
글로벌 프로덕트 매니저
히프라



HIPRA

전세계 현황 : 대륙별 고기 소비 변화

Worldwide scenario : Development of meat consumption per region



HIPRA

2024년 돼지 주요 사육 국가

Main pig meat producers. 2024

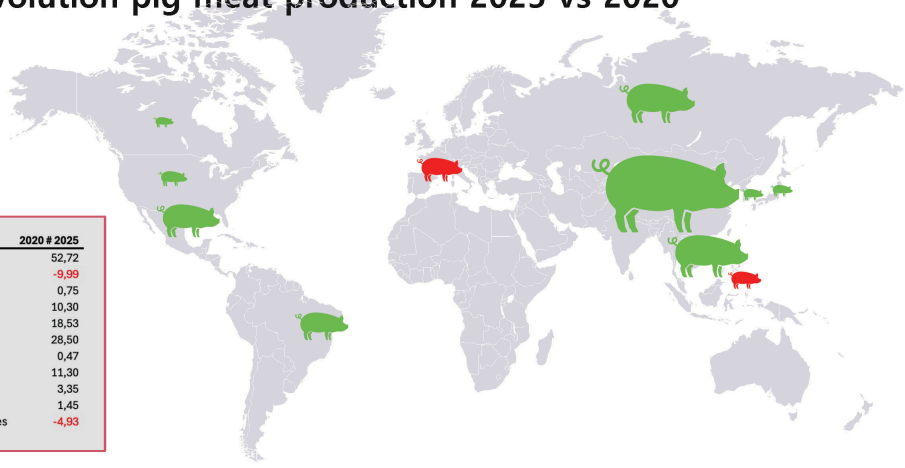


	Product (T. t)	2024 (%)
China	56.750	48,21
Europe	21.250	18,15
USA	12.684	11,24
Brazil	4.495	3,95
Russia	4.140	3,72
Vietnam	3.655	3,27
Canada	2.085	1,85
Mexico	1.590	1,40
South Korea	1.450	1,26
Japan	1.320	1,15
Philippines	1.040	0,92

HIPRA

2025 Vs 2020년 돼지고기 생산 변화

Evolution pig meat production 2025 vs 2020

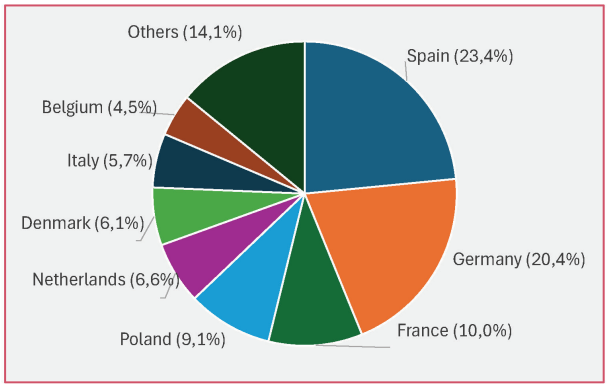


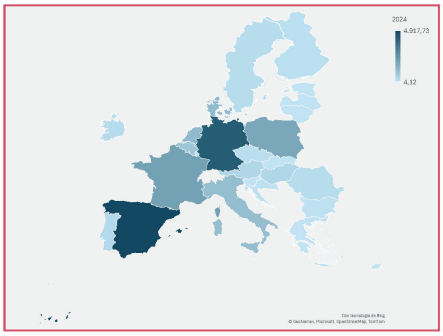
	2020 # 2025
China	52,72
EU	-9,99
USA	0,75
Brazil	10,30
Russia	18,53
Vietnam	28,50
Canada	0,47
Mexico	11,30
Korea_S	3,35
Japan	1,45
Philippines	-4,93

HIPRA

2024년 유럽 돼지 고기 생산

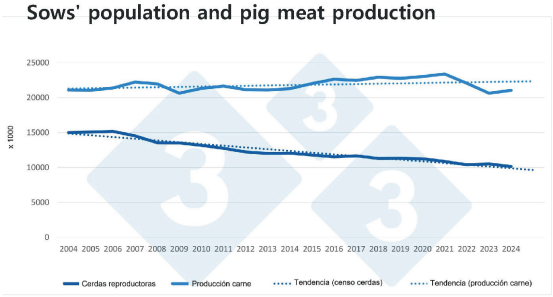
Pig Meat production EU(2024)





HIPRA 유럽 돼지 생산 European Pig Production

모돈 두수 및 돼지고기 생산
Sows' population and pig meat production



유럽 양돈농가 트렌드(2004~2024)
EU Pig Farming Trends(2004~2024)

- 유럽 모돈 두수는 20년에 걸쳐 약 480만두 이상(32.4%) 감소
  The EU sow population decreased by over **4.8 million animals** in 20 years a **32.4% reduction**.
- 모돈 두수 감소에도 전체 돈육 생산량은 2,100만톤으로 일정하게 유지
  Despite this decline, **total pork production remained stable arround 21 million tons**.

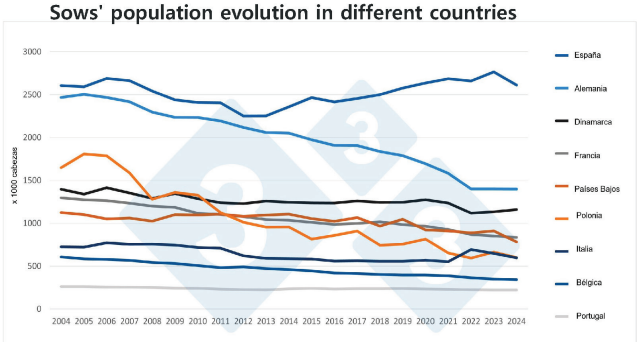
HIPRA 유럽 돼지 생산 European Pig Production

국가별 모돈 두수(2004~2024) Sow Inventory Change by Country(2004~2024)

Sows' population and pig meat production

Country	Change (%)
Spain	+0.2%
Germany	−43%
Denmark	−17%
France	−36%
Netherlands	−30%
Poland	−63%
Italy	−17.6%
Portugal	−15.7%

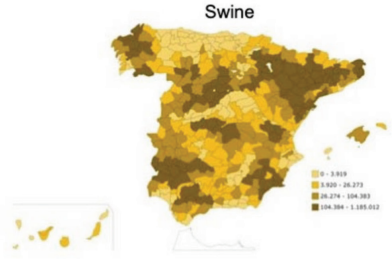
국가별 모돈 두수 변화
Sows' population evolution in different countries



유럽 내 국가별 모돈 두수 변화(2004~2024)

- **스페인 제외 유럽 국가들은 모돈 두수 감소** All EU-27 countries reduced their sow inventories except Spain.
- **스페인 모돈 두수 증가(+0.2%). 돈육 생산 60% 증가** Spain slightly increased its sow population (+0.2%) and boosted pork production by 60%, from 3.08M tons to 4.92M tons.
- **2021년부터 스페인은 유럽 내에서 가장 많은 돈육 생산 중** Spain has been the EU's leading pork producer since 2021.

HIPRA 스페인 양돈산업 Spain Pig production



유럽 돈육 생산의 23% 이상 차지
>23% European pig meat production

양돈 생산 및 도축시설 밀집 지역
High area concentration production and slaughter areas

- 카탈루냐 Catalonia 41,6 %
- 아라곤 Aragón 20,7%
- 카스티야, 레옹 Castille and León 11,8%

Source : 3tres3

- **스페인은 모돈수를 소폭(+0.2%) 증가.**
  돈육 생산량은 308만 톤에서 492만 톤으로 60% 증가
  Spain slightly increased its sow population (+0.2%) and boosted pork production by 60%, from (2004) 3.08M tons to 4.92M tons.
- **2021년부터 유럽 내 돈육 최대 생산국**
  Has been the EU's leading pork producer since 2021.
- **계열화 회사 기반의 생산 구조**
  High production company concentration based in integration companies' structure

Source : 3tres3

2024 WORLD MEGA PRODUCER

Vall Companys (Spain)
300,000 sows

The Vall Comapnys Group is a family-owned business Group in business since 1956 with activities to include: feed manufacturing, animal production (swine, poultry, and beef), flour milling, veterinary medicaments, merchandising and transportation. They are in all food production chain.
Key figures for 2023:
Turnover 2023: 4,000M approx. pending audit and filing with the Commercial Registry.
- Pig production: More than 5 million.
- Broiler production: 160 million chickens.
- Feed production: 2.78 million tons.
- Pork production: 553,000 tons.
- Chicken meat production: 335,000 tons.
- Beef production: 17,000 tons.
- Cured ham production: 21,500 tons.
- Production of processed meat products: 21,100 tons.
- Production of bread flour: 1.33 million tons.
- Associated farms: 2,600.
- Collaborators: 12,995.

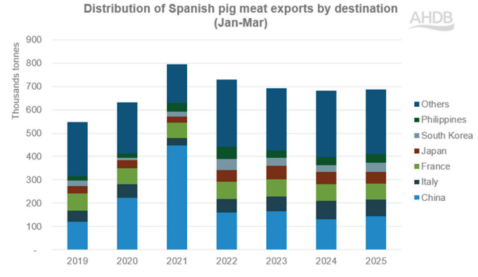
Costa Food Group (Spain)
160,000 sows

Costa Food Group, the meat producing holding of Grupo Empresarial Costa, is a leader in the Spanish and European agribusiness sectors.
Costa Food Group key numbers 2023:
- 2,300 million Euros aggregate turnover;
- 5,000 employees;
- Over 900 pig farms and 450 poultry farms;
- 3.6 million fattening pigs/year
- Exporting to 107 countries

Grupo Jorge (Spain)
105,000 sows

Grupo Jorge is one of the largest meat companies in Europe and has been dealing in the pork sector for almost 100 years. It employs over 5,000 people in its various industries, which can be found all over Spain, and exports to over 100 countries around the world. One of the keys to our success is traceability, which covers all processes in our pork production chain, from genetics to the final sale, to obtain the highest quality products.
Currently, Grupo Jorge has over 105,000 mother pigs, with a production rate of 3,000,000 pigs per year and a slaughtering capacity of 10,000,000 pigs / year in all its production plants, where over 6,500,000 pigs/year are cut up.
At Grupo Jorge we believe in sustainability as a driving force for a better future. Our project FEEDING THE FUTURE is a sign of our commitment to society and the environment. Thanks to our photovoltaic plants, wind farms and hardwood plantations we are today a CO2 neutral company.

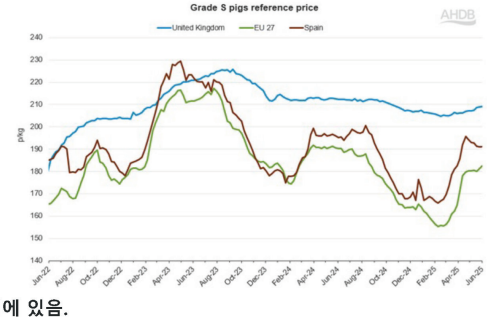
HIPRA 스페인 양돈산업 Spain Pig production



Source: Trade Data Monitor LLC

수출 중심의 생산구조 A production sector based on exportation

- **스페인의 돼지고기 생산량은 보합세 또는 소폭의 성장을 유지**
  Pig meat production in Spain remains flat or with small growth
- **수출량, 연간 최대 0.5% 증가**
  Exports growth up to 0,5% by year
- **내수 수요, 5.4% 증가**
  Local demand increased by 5,4%



중국과의 새로운 관세/수출 협정 New duty agreements with China

- **중국, 스페인산 돼지고기의 최대 수입국 지위 유지**
  China remains the top importer of Spanish pig meat
- **정치적 환경 : 미-중 관세 갈등 및 중국의 EU산 돼지고기에 대한 반덤핑 조사**
  Political environment : China–USA tariff tensions and China's anti-dumping investigation into EU pig meat.
  - **2025년 4월, 수출 가능 품목을 확대하는 신규 수출 협약 체결**
    A new export protocol signed in April 2025 expands eligible products
  - **내장류(Offal) 수출, 2024년 대비 전체 돼지고기 수출량의 2% 증가**
    Offal exports increased 2% of total pig meat exports respect 2024
  - **스페인 수출업체들은 잠재적인 무역 문제에 대응할 수 있는 유리한 위치에 있음.**
    Spanish exporters are well-positioned to navigate potential trade challenges.

HIPRA

불확실한 시기 : 유럽 및 스페인 양돈산업의 주요 과제
Uncertain period : European & Spanis Pig Sector Main concerns

당면 과제 Challenges		히프라가 제공하는 기회 How HIPRA helps creating Opportunities	
기후 변화 Climate change	1	1	조금 더 효과적인 생산 More efficient Production
동물복지 및 농장 인력 Animal welfare & Farm staff	2	2	백신 접종 전략 Vaccination strategies
동물 건강 Animal health status	3	3	예방 및 내부방역 Prevention and biosecurity
항생제 저감 및 산화아연 사용 금지 Antibiotic reduction and ZnO	4	4	최신 백신 프로그램 Up to date Vaccination programs

HIPRA

동물복지 규제 & 인력 관리
Animal Welfare Regulation & Manpower management

HIPRA

동물복지 Welfare

단미&거세

- **유럽 : 단미 및 거세 중단 권장**
  EU : EFSA Scientific Opinion (2022) suggests to ban the practice
- **현재 유럽의 단미는 거의 금지된 상황**
  Currently, in the EU routine tail docking is already forbidden, but there are many exceptions
- **거세 : 마취/진통 후 거세 혹은 면역 거세**
  Castration only with anesthesia/analgesia or inmunocastration

교배

- **독일(29년 2월 이후) : 수정용 스톨 사용 금지. 단, 인공수정, 발정 확인 또는 치료 목적에 한해 짧은 시간만 가둘 수 있음.**
  Germany, as from February 2029 : No more insemination crates – just brief confinement for insemination, heat control or medical treatment purposes.

자유 분만

- **2027년 케이지 사육 종료(2021년 유럽 의회 승인) & ESFA 권고(2022)**
  Citizen's initiative : End the Cage Age by 2027(accepted in 2021 by European Parlament) & EFSA scientific opinion, (2022)
- **모돈에게 제공되는 최소 공간 : 6.6m²(우리 : 7.8m²)**
  Minimum available space to sows : 6.6 m2 (pen size : 7.8 m2)
- **북유럽 의무화, 독일 및 오스트리아 선도**
  North Europe mandatory, Germany and Austria moved ahead
- **남유럽 법적 제도 진행 중**
  South Europe legislation in progress

수송

- **운송시간 제한(도축장까지 최대 9시간)**
  Limit Journey duration(Max 9 hours for animals to slaughter)
- **운송조건 개선(공간, 환기)** Improve transport conditions (space per animal, ventilation)
- **취약동물 보호(어린 개체, 임신돈, 부상 개체에 대한 엄격한 규정)**
  Protect vulnerable animal(Stricted rules for young, pregnant and injured animals)
- **생축 운반 감소** Reduce live animal transport
- **추적 및 모니터링 도입** Include technology for traceability and monitoring

HIPRA

인력관리 People

다음 세대 Next Gen

가족농장을 계속 이어가지 않는 이유
What is the reason for not continuing the family farm?



노동력 Work force

교육, 인력 유지 및 참여
Training, retention and engagement

내 사업을 성장시키기 위해 어떤 전문성이 필요한가?
What professionals do I need to grow my business?



HIPRA

유럽 및 스페인 양돈산업의 주요 과제 : 동물복지

European & Spanish Pig Sector Main concerns : Animal Welfare



frontiers in Veterinary Science

ORIGINAL RESEARCH
published: 11 August 2021
doi: 10.3389/fvets.2021.715280

Intramuscular vs. Intradermic Needle-Free Vaccination in Piglets: Relevance for Animal Welfare Based on an Aversion Learning Test and Vocalizations

OPEN ACCESS

Edited by:
Keelin Katherine Mary O'Driscoll,

Antoni Dalmau[1*], Almudena Sánchez-Matamoros[2], Jorge M. Molina[2], Aida Xercavins[1], Aranzazu Varvaró-Porter[1], Israel Muñoz[1], Xènia Moles[1], Berta Baulida[1], Emma Fàbrega[1], Antonio Velarde[1], Joaquim Pallisera[1], Alba Puigredon[2] and Alexandra Contreras-Jodar[1]

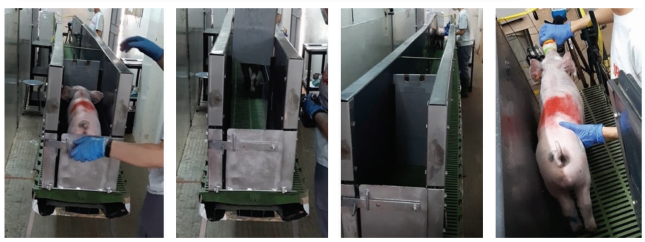
[1]Animal Welfare Program, Institute of Agrifood Research and Technology, Barcelona, Spain, [2]HIPRA, Girona, Spain

피내 백신 접종과 동물복지

ID VACCINATION AND PIGLET WELFARE

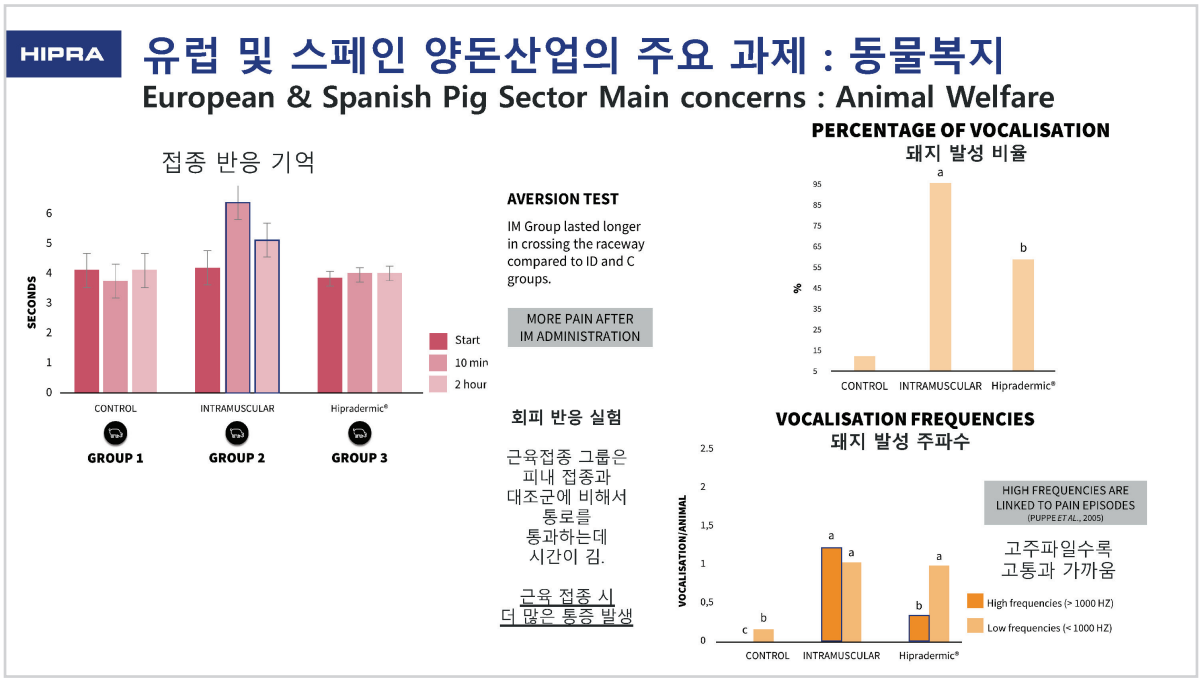
회피 반응 실험(4미터 길이 복도 통과 시간 측정) 및 발성 측정 및 평가

An aversion test (time taken to cross a 4-meter raceway) and vocalisation were evaluated at different times using video and audio recordings.



12 PIGS
IN EACH GROUP

GROUP 1	GROUP 2	GROUP 3
CONTROL	IM AT DAY 28	ID AT DAY 28


HIPRA
유럽 및 스페인 양돈산업의 주요 과제 : 동물복지
European & Spanish Pig Sector Main concerns : Animal Welfare
접종 반응 기억
SECONDS
Start
10 min
2 hour
CONTROL
INTRAMUSCULAR
Hiprademic®
GROUP 1
GROUP 2
GROUP 3
AVERSION TEST
IM Group lasted longer in crossing the raceway compared to ID and C groups.
MORE PAIN AFTER IM ADMINISTRATION
회피 반응 실험
근육접종 그룹은 피내 접종과 대조군에 비해서 통로를 통과하는데 시간이 김.
근육 접종 시 더 많은 통증 발생
PERCENTAGE OF VOCALISATION
돼지 발성 비율
%
CONTROL INTRAMUSCULAR Hiprademic®
VOCALISATION FREQUENCIES
돼지 발성 주파수
VOCALISATION/ANIMAL
HIGH FREQUENCIES ARE LINKED TO PAIN EPISODES
(PUPPE ET AL., 2005)
고주파일수록 고통과 가까움
High frequencies (> 1000 HZ)
Low frequencies (< 1000 HZ)
CONTROL INTRAMUSCULAR Hiprademic®


백신 혼합 접종
Vaccines combination
to face current challenges

HIPRA

백신 접종 프로그램
VACCINATION PROGRAM

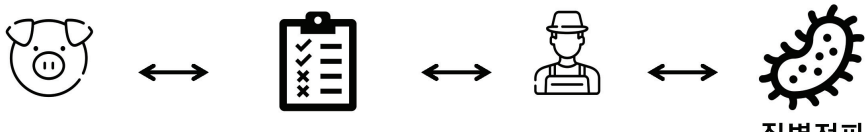
후보돈 Gilts	PRRS	PRRS*	Rhinitis(위축성비염)
	SE+PPV (단독, 파보) / PPV	Influenza*	Neonatal diarrhoea 신생자돈 설사 1, 2 or 3
	CSF(돈열)		Influenza*
	APP*(흉막폐렴)		Glässer(글래써)
	Mycoplasma+PCV2*		...
	격리(Quarantine)	일괄(Mass)	임신(Gestation)
모돈 Multiparous	SE+PPV / PPV	PRRS	Rhinitis
	CSF	Influenza*	Neonatal diarrhoea 1, 2 or 3
		PCV2*	Influenza
			Glässer
			PCV2*
			...
	포유(Lactation)	일괄(Mass)	임신(Gestation)

HIPRA

현재 문제를 해결하기 위한 백신 혼합 접종

Vaccines combination to face current challenges

현안 문제 CHALLENGES



고려 사항 ASPECTS TO CONSIDER

동일한 안정성 및 효과 Same safety & efficacy

핵심 요소 : 동일한 어쥬번트와 제형 + 높은 안전성 + 불활화된 항원

Key point : Same adjuvant and excipients + High safety + Inactivated antigens

HIPRA

현재 문제를 해결하기 위한 백신 혼합 접종

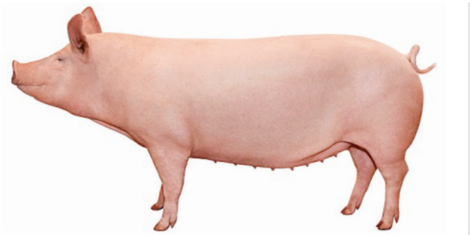
Vaccines combination to face current challenges

기대 효과 WHAT SHOULD WE EXPECT?

= 효과 및 안전성
Efficacy & Safety

= or 동물복지 welfare

접종 시간 Time



- 안전성 Safety
- 항체형성 Seroconversion
- 생산성 Reproductive parameters
- 동물복지 Welfare

HIPRA

인력관리 People

다음 세대 Next Gen

- 다음 세대는 양돈업을 계속할까?
  Next gen will not continue the business?
- 지방 vs 대도시 Rural areas vs big cities



노동력 Work force

- 전문성 부족 Lack of skill professionals
- 낮은 급여 Low paycheck
- 사업을 성장시키기 위해 필요한 전문성
  What professionals do I need to grow my business?

교육, 인력 유지 및 참여 → 더 나은 기술,
더 우수한 전문가, 부가가치 향상 → 사업 성장
Training, retention and engagement → Better skills, better professionals, added value → Business growth



현장 직원을 위한 백신 접종
Adjust the Vaccination to STAFF NEEDS

거치대 BRACKETS



새로운 백신 접종 방식, IT 시스템 도입으로 동물복지 및 직원 근무 개선
Improving labour use and animal welfare with new protocols and combinations, and innovative IT systems

수레 TROLLEY



HIPRA

위생 및 차단방역
Sanitary & biosecurity Challenges

HIPRA

2006~2016년 사이 지역별 가장 중요한 돼지 질병들을 게재된 논문 기준으로 정리

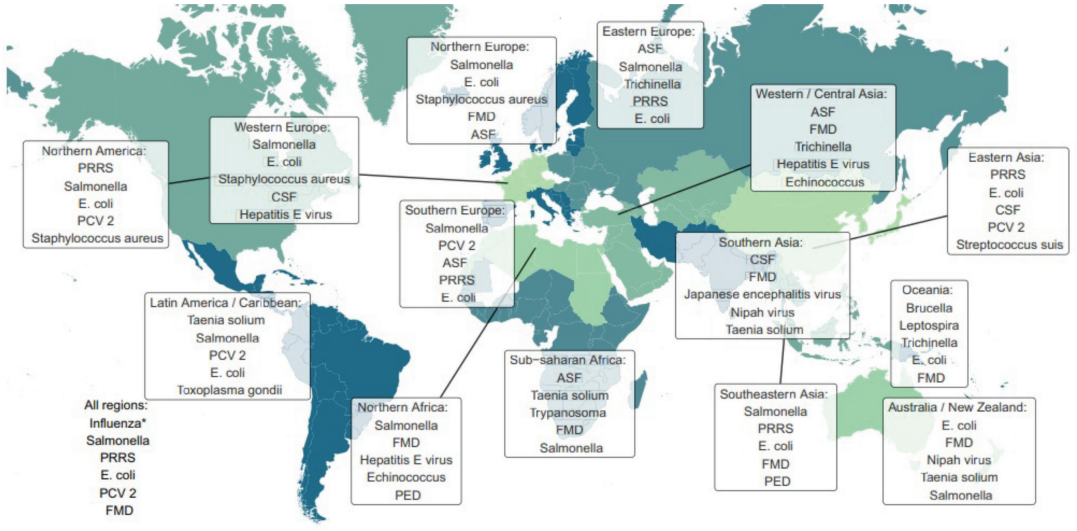


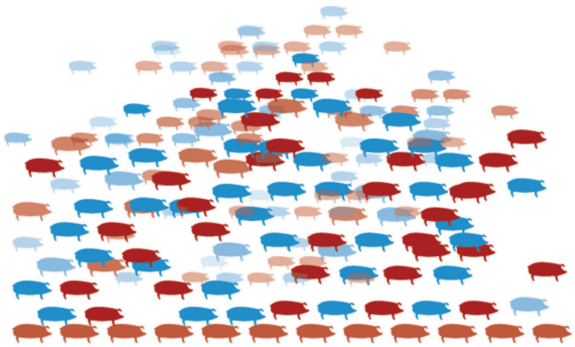
Fig. 1. Most important pathogens of swine by region during 2006–2016, ranked in descending order by publication number. Asterisk indicates pathogens appearing on each regions list and thus excluded from regional lists.

HIPRA

질병 Health

ASF

HP PRRSV STRAINS



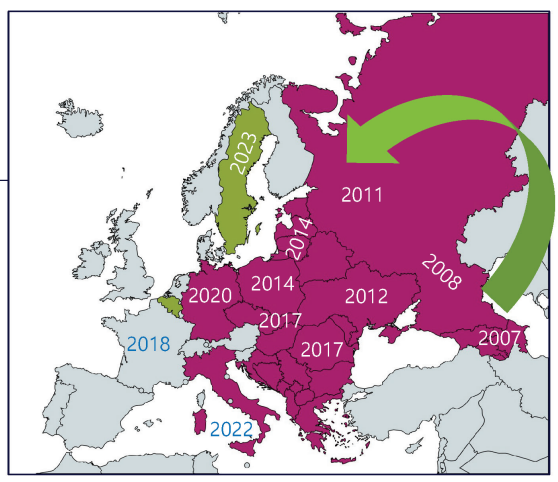
HIPRA

아프리카돼지열병 ASF

Reported ASF since 2007

Reported ASF since 2007 – and were declared free

2014 Poland
2017 Romania
2017 Czech Republic
2018 Belgium
2020 Germany
2022 Italy
2023 Sweden



HIPRA

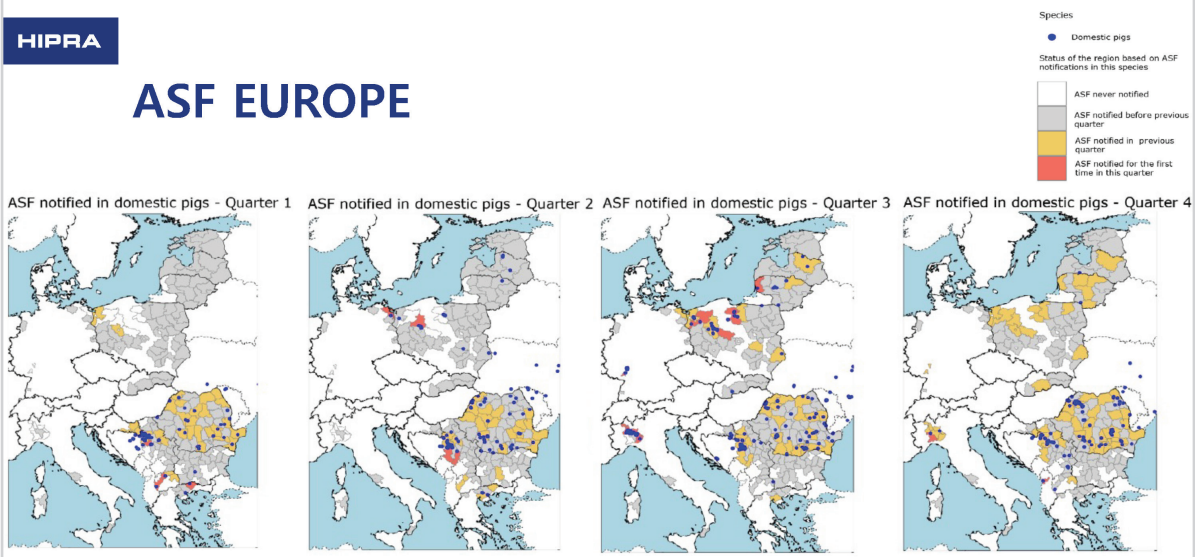
ASF

Health : ASF(EU level)

- 감염 지역, 고위험 / 저위험 지역의 **식별** Identification of **infected** zones, high risk & low risk zones
- 해당 지역 내 돼지·사료·고기 운송 중단 **Standstill** of pig/feed/meat transport in these zones
- 감염된 농장 내 돼지 살처분 **Culling** of pigs on infected farm
- 다른 농장에 대한 검사 실시 **Testing** of other farms
- 감염 지역 내 사냥 금지 **Ban** on hunting inside infected zones
- 감염 지역 내 멧돼지 모니터링 **Passive surveillance** to wild boar carcasses in infected zones
- 장기적 : 감염 지역 집중 사냥 실시 Longer-term : intensive hunting **around** infected zone
- EU 내 돈육 거래 지역화 적용 **Regionalisation** takes place for pig/pork trade inside the EU
- 제3국(비EU 국가) 국경 폐쇄 **Third** countries close borders

HIPRA

ASF EUROPE



- **루마니아 : 발병 사례의 66%가 자국 돼지** ROMANY : 66% de los brotes en cerdos domésticos.
- **폴란드 : 30%가 멧돼지에서 발생** POLAND : 30% de los brotes en jabalíes.
- **GERMANY : 남서부에서 장거리 이동에 의한 새로운 발생 확인** nuevo foco en el suroeste por translocación de larga distancia.

HIPRA About HIPRA Animal Health Human Health CDMO Services Careers EN Country

Home > Animal Health > News > The European VAX4ASF project will study next-gener ...

The European VAX4ASF project will study next-generation vaccines against African Swine Fever (ASF)

Corporate

유럽 VAX4ASF 프로젝트로 아프리카돼지열병(ASF)에 대한 차세대 백신을 연구 중

The European project VAX4ASF —New Technologies for African Swine Fever (ASF)— begins with the aim of developing a next-generation vaccine against ASF virus, finding a means to eradicating the disease globally.

The project, supported by the EU Horizon Europe program, is led by HIPRA and formed by an international consortium of 17 partners.

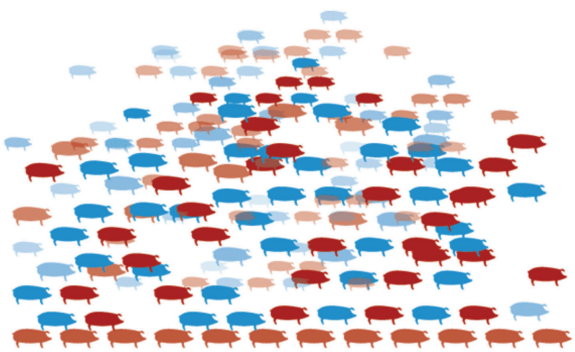
The goal of VAX4ASF is to provide a definitive, effective, and safe solution against the highly contagious, unpredictable, and complex ASF virus that affects pigs and wild boars, causing high mortality among the affected animals. The project aims to innovate based on previous vaccination approaches and strategies with the potential for success.



HIPRA 질병 Health

ASF

고병원성 PRRS
HP PRRSV STRAINS

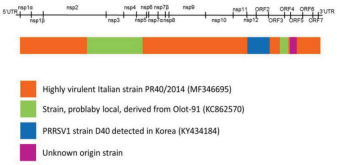


HIPRA

RESEARCH Open Access

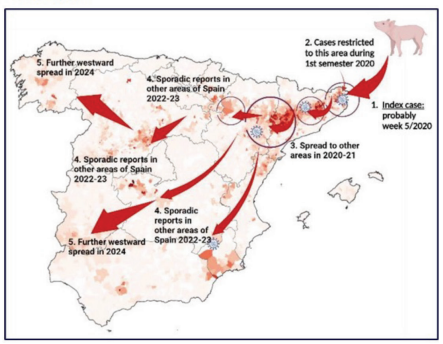
Introduction of a PRRSV-1 strain of increased virulence in a pig production structure in Spain: virus evolution and impact on production

Gerard E. Martín-Valls[1†], Martí Cortey[1†], Alberto Allepuz[1], Francesc Illas[2], Montserrat Tello[1] and Enric Mateu[1*]



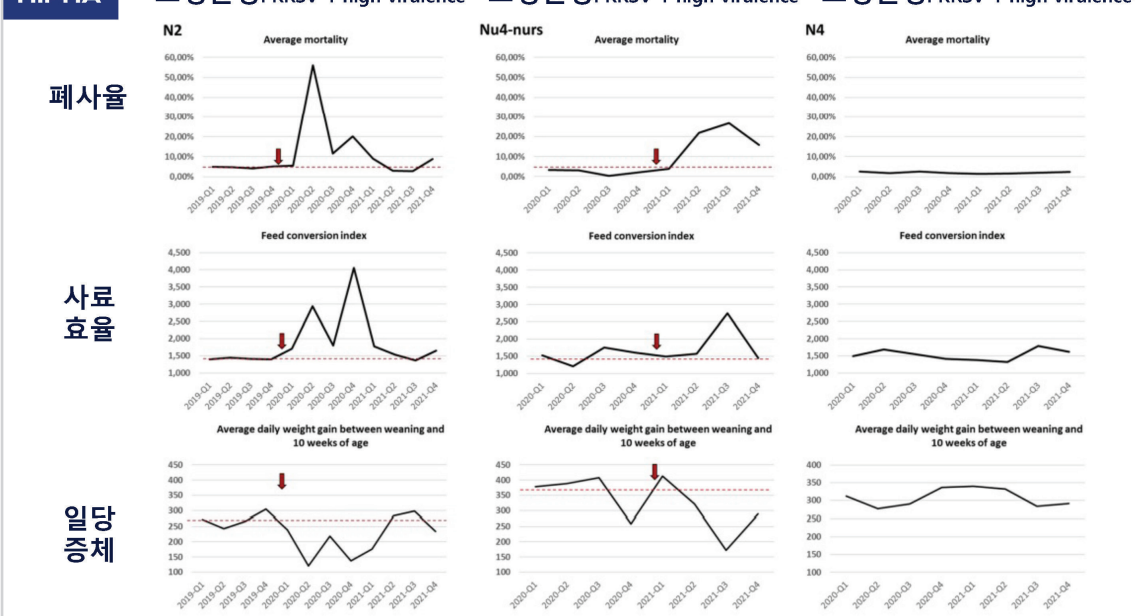
스페인 양돈농장에 독성이 강한 PRRS1형바이러스 확인 : 바이러스 진화와 생산성에 미치는 영향

모자이크 변종	Mosaic strain
고병원성	Highly pathogenic
모돈 폐사	Sow mortality
유산	Abortions
사산된 새끼돼지	Stillborn piglets
육성돈 폐사	Grower mortality
비육돈 폐사	Finisher mortality



Source: E. Mateu, Universitat Autònoma de Barcelona, Spain; IPVS-ESPHM 2024.

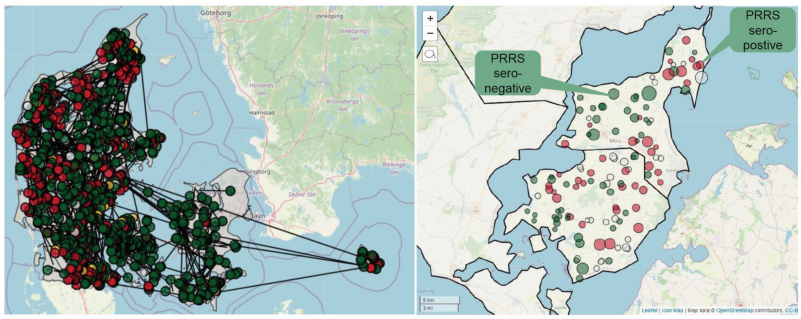
HIPRA



HIPRA

PRRSV

덴마크 Denmark



- **주요 생산국** Major pig producer
- **모돈 약 912,000두** Approx 912,000 sows
- **연간 생산량 : 2800만두** Production: 28 million pigs/ year
- **약 2,300개 농장(2022년)** 2,300 pig farms (2022)
- **생축 수입 없음** No live pig imports
- **혈청학적 상태 기반** Based on serological status
- **2022년부터 박멸 프로그램 시작** Eradication programme started in 2022
- **전액 민간 부문에서 자금 지원** Entirely funded by the private sector
- **SPF 시스템** Within SPF system
- **3개의 데이터베이스** 3 overlapping databases

Source : Dr E.O. Nielsen et al., SEGES, ESPHM 2023.

HIPRA

PRRSV → 박멸이 항상 정답이 아님 Eradication is not always an option

HIPRA

ASSESSMENT OF THE EFFICACY OF A LIVE ATTENUATED VACCINE AGAINST AN EXPERIMENTAL CHALLENGE WITH A HIGHLY VIRULENT PRRSV1 STRAIN

S. Cros et al, Leman Swine Conf. 2024

89% 폐사율 감소 Mortality reduction

(p<0.001)

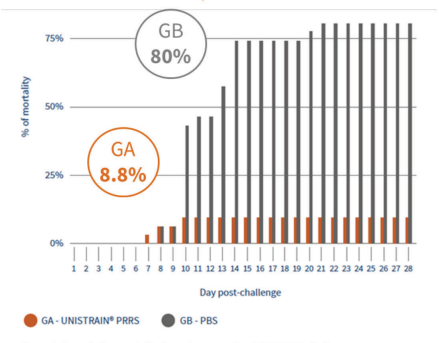


Figure 2. Cumulative mortality in each group after HP-PRRSV1 challenge.

58% 임상증상 감소

Clinical symptoms reduction

(p<0.001)

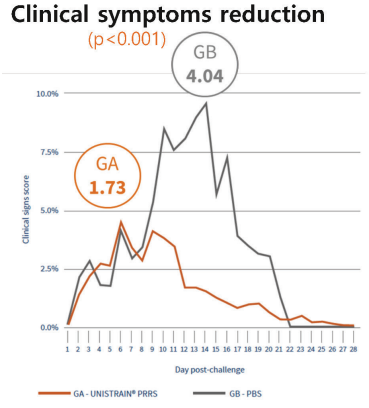


Figure 3. Clinical signs score after HP-PRRSV1 challenge by day and group.

HIPRA



스페인 양돈은 차단방역 강화로 나아가는 중

Spanish sector towards enhance biosecurity measures

양돈농장의 차단방역을 위한 국가 전략 계획 수립 : 농식품부

National Strategic Plan for Biosecurity in Pig Farms

Developed by : Ministry of Agriculture, Fisheries and Food (MAPA)

목적 Objectives

- 양돈장의 생물보안 수준 평가
  Assess biosecurity levels in pig farms
- 효과적인 방역조치의 중요성 인식 제고
  Raise awareness on the importance of effective measures
- 질병통제 : PRRS, 살모넬라, 써코바이러스, 오제스키 등
  Control diseases such as PRRS, Salmonella, Circovirus, Aujeszky, etc.

도구 Tools

- 우수 사례 지침 Good practice guidelines
- 차단방역 10계명 Biosecurity decalogue
- 통제된 돈사 인증제 Controlled housing certification

HIPRA

질병-차단방역 Health-Biosecurity

히프라더믹(무침피내) 사용하였을 때 ASF 및 PRRS 주사침 전파 예방

Hipradermic® PREVENTS ASF AND PRRS TRANSMISSION

IPVS2022

Evaluation of ASF and PRRS virus transmission between pigs when using conventional needles and a needle-free device

Dachrit Nilubol[1,2,*]; Joel Miranda[3]; Salvador Romero[3]; Sittikorn Traiyarach[3]; Angkana Tantituvanont[2,4]; Dante Palabrica[2]

[1]Swine Viral Evolution and Vaccine Development Research Unit and [2]Department of Veterinary Microbiology, Faculty of Veterinary Science, Chulalongkorn University, Thailand, [3]HIPRA, Amer (Girona), Spain, [4]Department of Pharmaceutic and Industrial Pharmacies, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand, [5]Robina Farms Diagnostic Laboratory, Universal Corn Products Compound, Philippines,
*Corresponding author: dachrit@gmail.com







RESULTS

감염돈에 접종한 주사침 / 히프라더믹 재사용 시 혈청전환

SEROCONVERSION OF SENTINELS TO ASF AND PRRS AFTER ID AND IM INOCULATION

	GROUP	0 DPI	7 DPI	14 DPI	21 DPI	28 DPI
ASF	Needle 주사침	0/6 (Negative)	0/6 (Negative)	4/6 (Positive)	6/6 (Positive)	6/6 (Positive)
	Hipradermic® 히프라더믹	0/6 (Negative)	0/6 (Negative)	0/6 (Negative)	0/6 (Negative)	0/6 (Negative)
PRRS	Needle 주사침	0/6 (Negative)	0/6 (Negative)	2/6 (Positive)	6/6 (Positive)	6/6 (Positive)
	Hipradermic® 히프라더믹	0/6 (Negative)	0/6 (Negative)	0/6 (Negative)	0/6 (Negative)	0/6 (Negative)

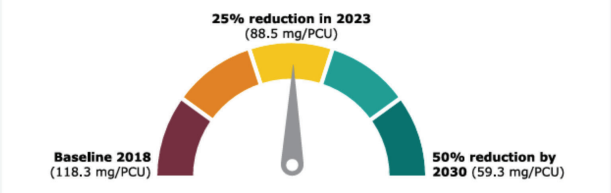
IPVS2022

HIPRA

항생제 저감 및 산화아연 금지
Antibiotic reduction & ZnO banned

규제 Legislation

항생제 사용
Antibiotics usage



2030년까지 유럽은 전체 항생제 판매량 절반 감축이 목표

EU's progress towards 50% reduction of overall antimicrobial sales for farmed animals and in aquaculture by 2030

산화아연 금지
ZnO banned

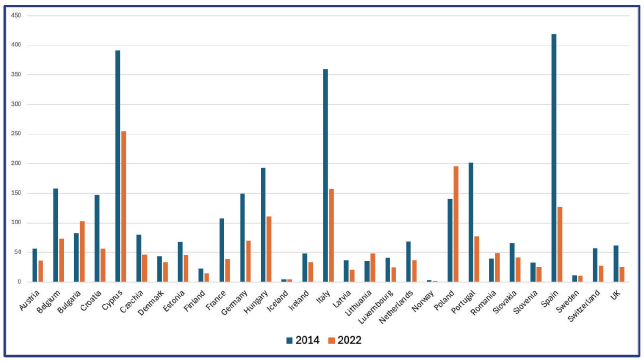
Table 1- Zinc oxide: 2 different uses - 2 different situations.

	ZnO as a feed additive	ZnO as a veterinary medicinal product (VMP)
EU agency	European Food Safety Authority (EFSA)	European Medicines Agency (EMA)
Legislation	Regulation (EC) No 1831/2003 on additives for use in animal nutrition	Directive 2001/82/EC on veterinary medicinal products + Regulation (EC) No 726/2004
Levels	Max. total 150ppm of zinc (from ZnO and other sources)	Normal dosage ca. 2500ppm
Ban?	No! There is no indication that ZnO will be banned as a feed additive.	Yes! Marketing authorisations for ZnO-based VMPs will be withdrawn the across EU by June 2022.

HIPRA

항생제 사용 Antibiotics usage

현재와 미래 What is the present and will be the future?



Comparative ESVAC : 2014~2022. mg/PCU

항생제 저항 수준 감소
Reduce the level of antimicrobial resistance

책임 있는 항생제 사용
By responsible use of antibiotics :

- 예방이나 성장 촉진제 용도 금지
- 치료용으로만 사용

eliminating the use as prevention or growth promoters
using only for treat sick animals

항생제 없는 사육
Raising livestock without antibiotics

생산 계획에서 예방 혹은 성장 촉진 목적으로 사용하지 않음
as prophylaxis or growth promoter in the production plan

위장관 질병의 모돈 두당 비용
GASTROINTESTINAL DISORDERS COST/SOW



6th European Symposium of Porcine Health Management, Sorrento, Italy, 7-9 May 2014

Financial impact of disease on pig production. Part III. Gastrointestinal disorders

Marie Sjölund, Mate Zoric, Per Wallgren
National Veterinary Institute, SVA, SE-751 89 Uppsala, Sweden; marie.sjolund@sva.se



	신생자돈 설사 Neonatal Diarrhoea		이유 후 설사 Post weaning Diarrhoea		증식성 회장염 Proliferative Enteropathy		돈적리 Swine Dysentery	
Time	6 days	43 $	3.5 days	28 $	6 days	45 $	5 days	59 $
Mortality	10 %	103 $	1.5 %	15 $	5 %	51 $	3 %	84 $
Cost/Sow	145 $		43 $		96 $		143 $	



HIPRA

신생자돈 설사로 발생하는 많은 비용 발생 HIGHLY COSTLY : WHY?

덴마크 4개 농장의 신생자돈 설사가 일당 증체량 및 폐사율에 미치는 영향 연구

Kongsted et al. BMC Veterinary Research 2014, 10:90
http://www.biomedcentral.com/1746-6148/10/90

BMC Veterinary Research

RESEARCH ARTICLE Open Access

The effect of New Neonatal Porcine Diarrhoea Syndrome (NNPDS) on average daily gain and mortality in 4 Danish pig herds

Hanne Kongsted[1,2*], Helle Stege[2], Nils Toft[3] and Jens P Nielsen[2]

* Correspondence: hko@lf.dk
[1]Danish Pig Research Centre, Danish Agriculture and Food
13, Kjellerup 8620, Denmark
[2]HERD – Centre for Herd-oriented Education, Research an
Department of Large Animal Sciences, University of Copen
Groennegaardsvej 2, Frederiksberg C 1870, Denmark

단 하루만 신생자돈 설사를 하여도 일당증체량 9g 감소

Conclusions: NNPDS negatively affected ADG in piglets, and even piglets that were diarrhoeic for one day only experienced a reduction in ADG. However, the study showed that diarrhoea restricted to the day of birth did not affect ADG and suggested this phenomenon to be unrelated to the syndrome. Since the diarrhoeal status of the litter had important effects on ADG, future research on NNPDS probably ought to focus on piglets from severely affected litters.

설사 DIARRHOEA	손실 인당 증체량 ADWG (GRAMS)
설사 1일 1 DAY	9
설사 1일 이상 >1 DAY	14
심한 신생자돈 설사 HIGH PREVALENCE OF DIARRHOEA	38



HIPRA

신생자돈 설사로 발생하는 많은 비용 발생 HIGHLY COSTLY : WHY?

↑ 폐사율 증가 Mortality

↑ 항생제 사용 증가 Antibiotic

↑ 관리 비용 증가 Management

이유체중 Weaning weight
일당 증체량 Average daily gain
이유 균일도 Uniformity at weaning
이유체중 5kg 이상 개체 ↑ piglets < 5kg

염증 및 장 손상 Inflammation and intestinal damage

장내 미생물총에 나쁜 영향 Negative effect on microbiota

HIPRA



HIPRA

산화아연 금지
ZnO Banned



급사, 안면 부종 Sudden death Facial edema



Edema in digestive tract
소화기관 부종



Hyperemia in organs
장기 발적



Retarded growth (ADG↓ / FCR↑) 성장 지연

VAS
Verotoxin Associated Syndrome
베로독소 관련 증후군



Impaired immunity?
면역 이상



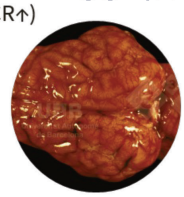
신경증상 Neurologic disorder



귀괴사 Ear necrosis



Post-weaning diarrhea 이유 후 설사



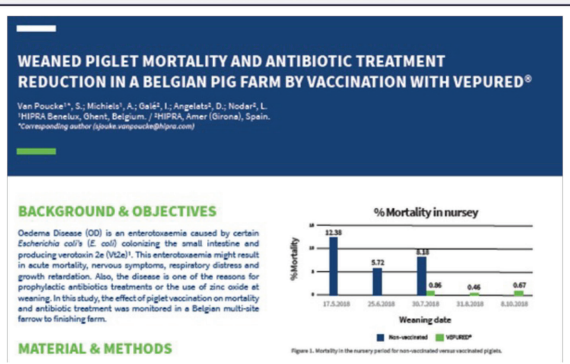
Interplay with *S.suis*
연쇄상구균

HIPRA

산화아연 금지
ZnO Banned

건강과 생산성은 저해하지 않으면서
항생제 사용 저감 프로그램으로 식육 가치를 높이기

Improving end-product value with antibiotic reduction programs without compromising health and productivity



WEANED PIGLET MORTALITY AND ANTIBIOTIC TREATMENT REDUCTION IN A BELGIAN PIG FARM BY VACCINATION WITH VEPURED®

Van Poucke[1*], S.; Michiels[1], A.; Gali[2], I.; Angelats[2], D.; Nodar[2], L.
[1]HIPRA Benelux, Ghent, Belgium. / [2]HIPRA, Amer (Girona), Spain.
*Corresponding author (sjouke.vanpoucke@hipra.com)

BACKGROUND & OBJECTIVES

Oedema Disease (OD) is an enterotoxaemia caused by certain *Escherichia coli*'s (*E. coli*) colonizing the small intestine and producing verotoxin 2e (Vt2e)[1]. This enterotoxaemia might result in acute mortality, nervous symptoms, respiratory distress and growth retardation. Also, the disease is one of the reasons for prophylactic antibiotics treatments or the use of zinc oxide at weaning. In this study, the effect of piglet vaccination on mortality and antibiotic treatment was monitored in a Belgian multi-site farrow to finishing farm.

MATERIAL & METHODS

Figure 1. Mortality in the nursery period for non-vaccinated versus vaccinated piglets.

HIPRA Conclusions

- 일부이지만 모든 변화가 "브뤼셀"이나 새로운 정치적 움직임에 영향을 받는 것은 아니며, 이들이 양돈산업에 영향을 줄 수 있다.
  Some, but not all developments are related to "**Brussels**" or **new political winds that** will affect swine industry
- 경제가 성장할수록 환경 문제에 대한 우려가 커질 것.
  Environmental concerns will grow as economies continue to grow
- 복지 향상은 "생산 면허" 개념과 연결되며,
  새로운 기술과 더 나은 근무 환경 도입으로 인해 직원 이직률이 낮아질 수 있음.
  Welfare developments as "**licence to produce**", Staff turnover could be reduced with use of new technology and better job conditions
- ASF나 PRRS 같은 질병 문제가 계속 도전 과제로 남아 있으며,
  향후 생산성에 중요한 영향을 미침 → 내부 및 외부 차단방역
  Health issues like **ASF** or **PRRS** continue to pose challenges and will determine the future production
  → Internal and external biosecurity
- 항생제 규제 및 ZnO(산화아연) 금지로 인해 예방 및 영양 관리의 중요성이 더욱 커짐.
  Antibiotics regulation and ZnO banned put more importance on Prevention and Nutrition developments.

HIPRA 히프라가 제시하는 미래 How will HIPRA help me?

