

# DANISH TECHNOLOGY IN THE AISA PIG INDUSTRY

丹麦养猪技术在亚洲猪业的实践

DanAg International  
丹俄国际

American system, European management, Chinese solution  
美式体系，欧式管理，中国方案

# Stefan Juul Ladefoged

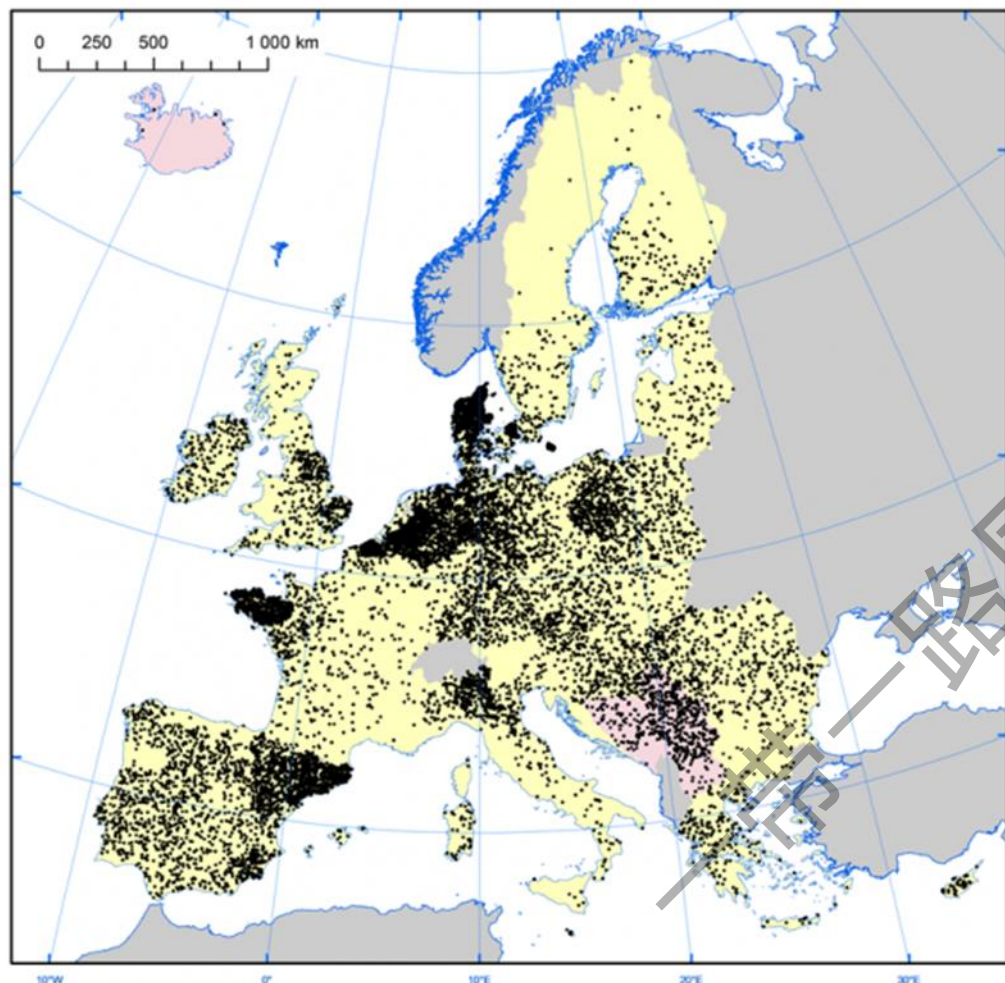
## 史蒂芬



- Professional experience: 职业经历
  - - Founder of DanAg in China, 2018 – until today 2018年至今 丹俄国际创始人
  - - Bashkirsk meat company genetic support 2019-2021  
2019-2021 巴斯克斯可肉食公司基因支持
  - - Bashkirsk meat company LTD Chief Technologist Of the genetic Centre, 2018 – 2019  
2018-2019 巴斯克斯可肉食公司首席技术官
  - - CM China, Technical Service Manager, 2017 – 2018 2017-2018 卡美中国技术服务经理
  - - Neofarm Russia, Farm Manager, 2014 – 2016 2014-2016俄罗斯新农场场长
  - - Isgaard GGP, Farm Manager, 2009 – 2013 2009-2013埃斯科的核心场场长
  - - Sjørupgård GGP, Farm Manager, 2007 – 2009 2007-2009斯克高核心场场长
  - - Krekærgård, Farm Manager, 2006 – 2007 2006-2007科瑞科的场场长
  - - Terphøjgård, Farm Manager 2002 – 2005 2002-2005特斯可场场长
  - - Department Manager during college period, 1996 – 2001  
1996-2001求学期间担任部门主管
  - - Kalø Agricultural College, Modul 1,2,3,4, 1996 – 2001 1996-2001卡洛农学院



# Pigs in EU 欧盟的猪群



## Denmark: 丹麦

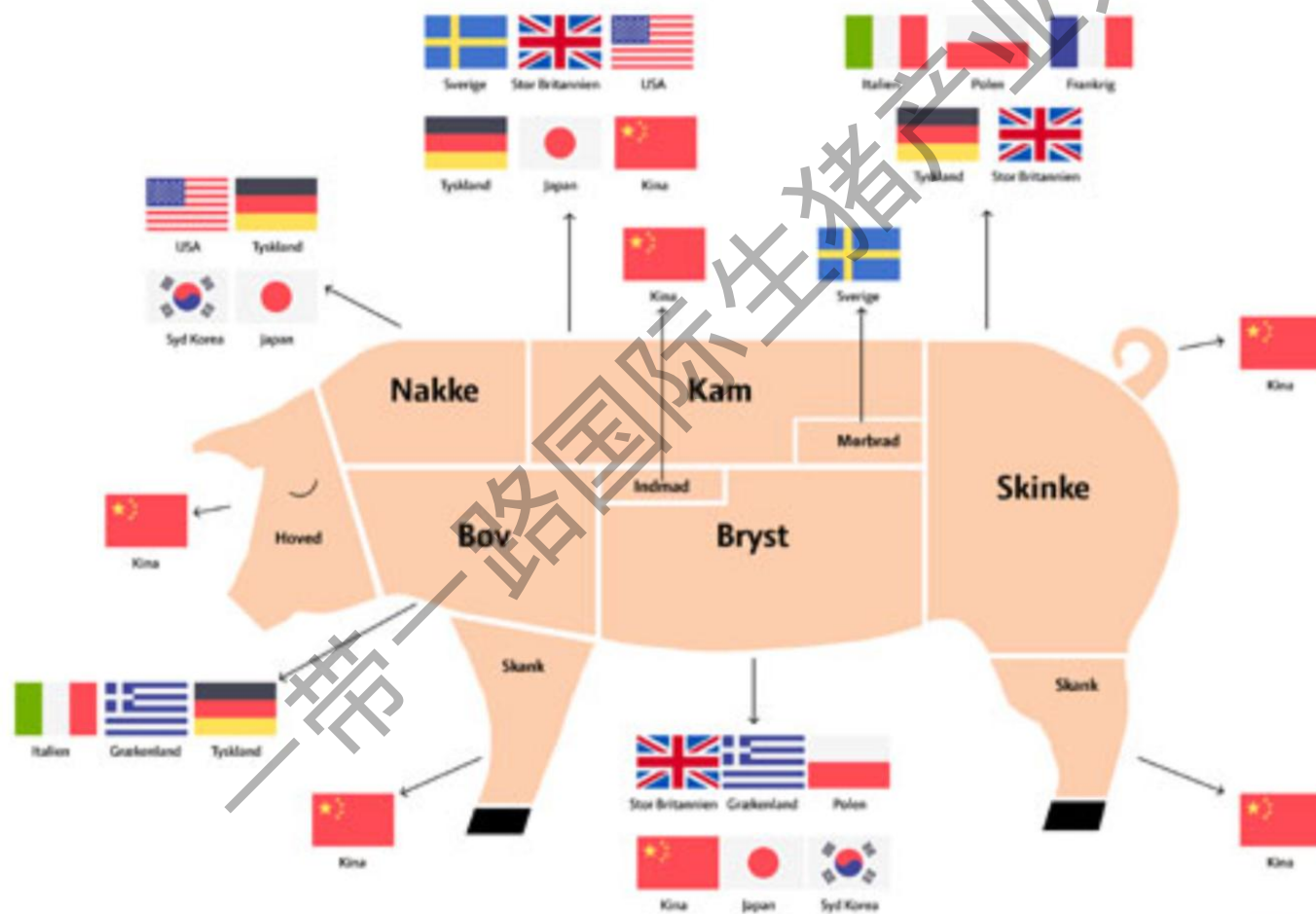
- 5.8 mill people 580 万人
- 1 mill sows 100 万头母猪
- 17 mill finishers slaughtered/year 每年屠宰 1700 万头成品猪
- 17 mill 30kg pigs exported/year 每年出口 1700 万头 30 公斤重的猪

Denmark is among the world 's largest pig meat exporters 丹麦是世界上最大的猪肉出口国之一

The Danish pig industry is among the world leaders in areas such as breeding, quality, food safety, animal welfare and traceability. This is the reason why Denmark is among the world 's largest pig meat exporters. 丹麦养猪业在育种、质量、食品安全、动物福利和可追溯性等领域处于世界领先地位。这也是丹麦跻身世界最大猪肉出口国行列的原因。

# Denmark is among the world's largest pig meat exporters

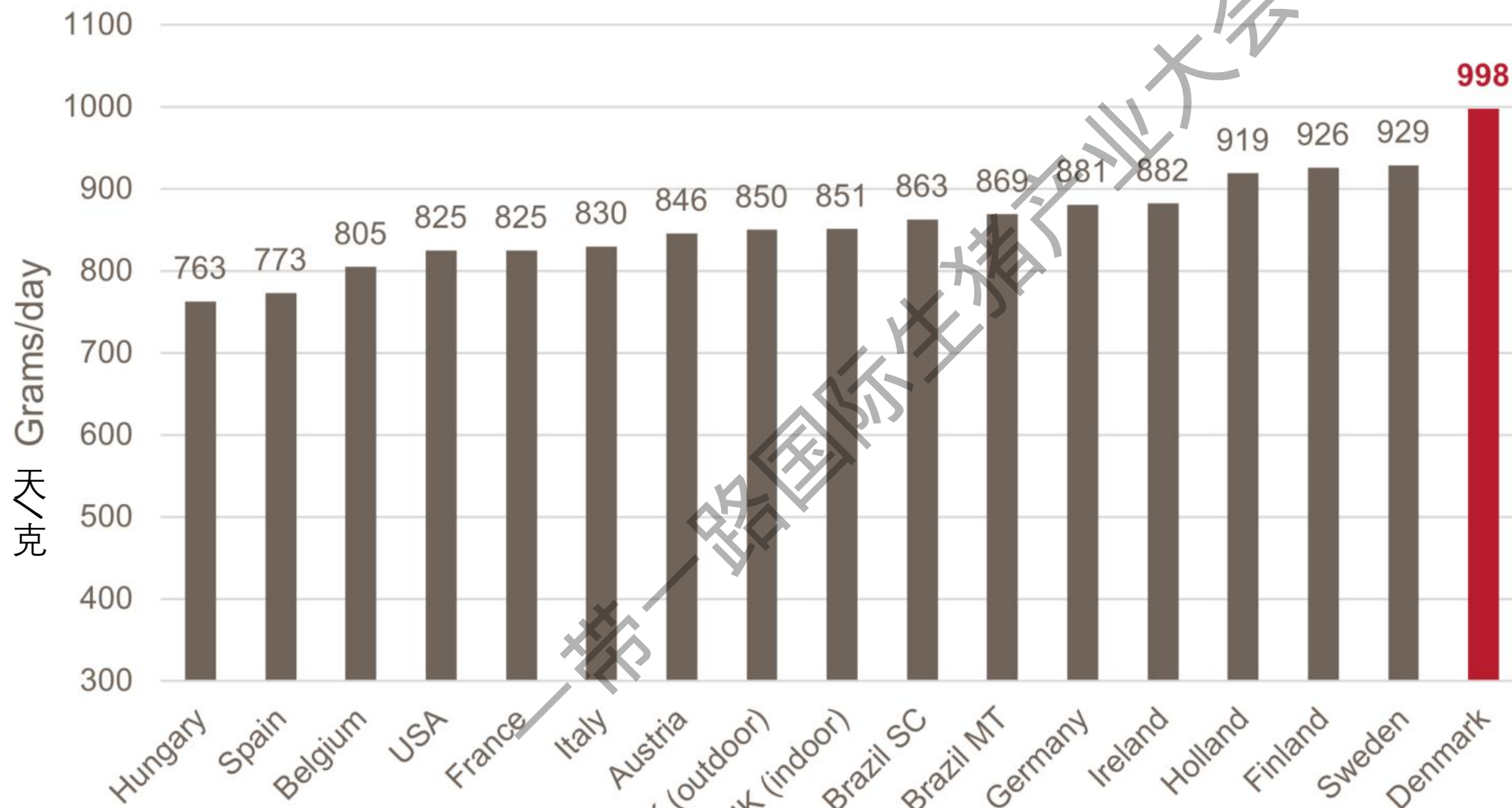
丹麦是世界上最大的猪肉出口国之一





# 丹麦全国2022年30-120公斤育肥猪日增重

## Denmark Daily gain g/day, 30-120 kg, 2022

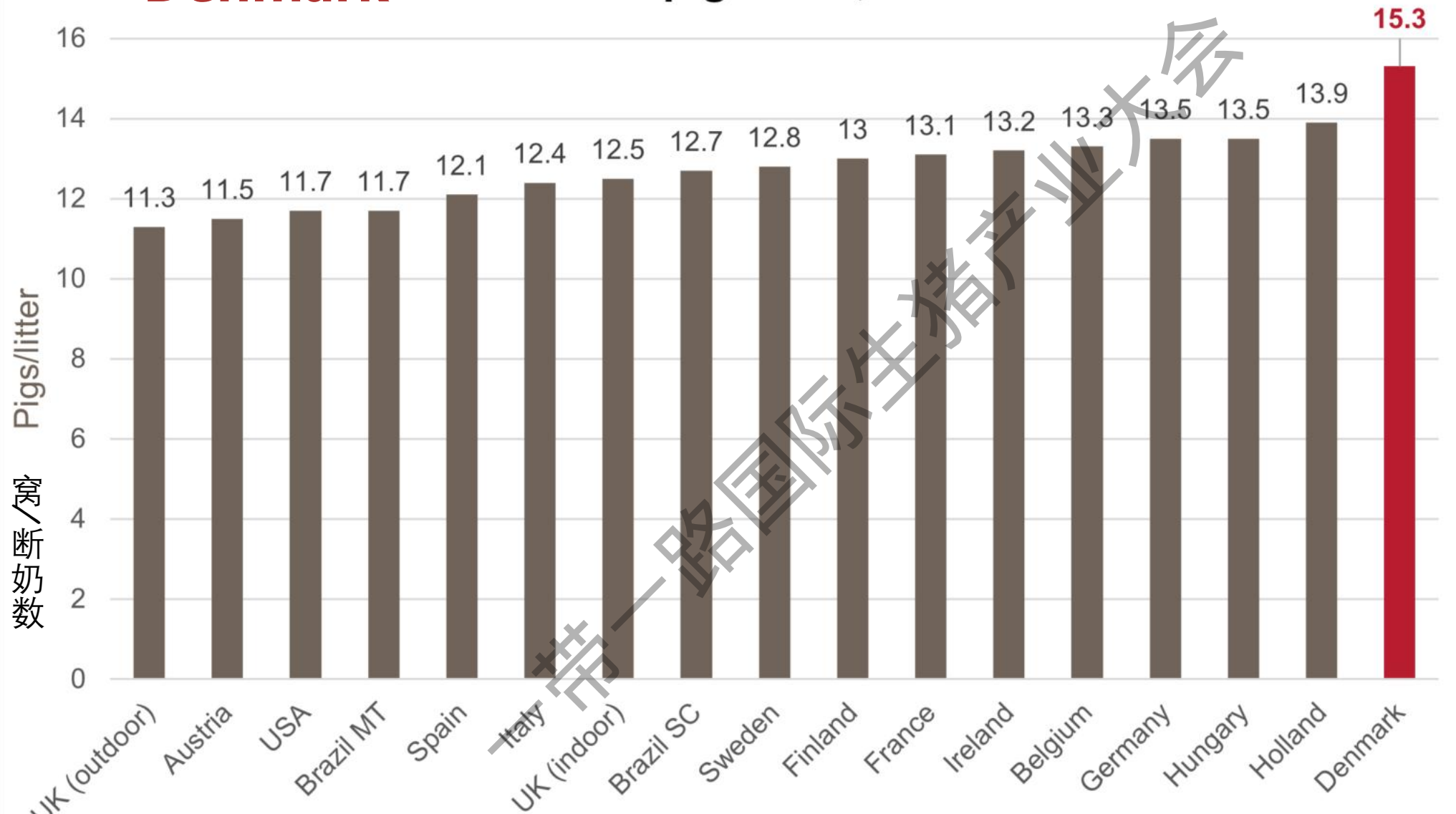


匈牙利 西班牙 比利时 美国 法国 意大利 奥地利 英国 (户外) 英国 (室内) 巴西SC 巴西MT 德国 爱尔兰 荷兰 芬兰 瑞典 丹麦

# 丹麦全国2022年窝均断奶数

**Denmark**

**Weaned pigs/litter, 2022**



英国（户外） 奥地利 美国 巴西MT 西班牙 意大利 英国（室内） 巴西SC 瑞典 芬兰 法国 爱尔兰 比利时 德国 匈牙利 荷兰 丹麦

# Denmark 丹麦

## 7 – 30 KG 7-30公斤

(Average for all 平均)

Daily gain	日增重	465 g
Feed conversion ratio	饲料转化率	1.60 kg
Dead	死亡率	4.3 %

## 7 – 30 KG

(25% with best production value/pen place/year) 前25%的最佳产值

Daily weight gain	日增重	506 g
Feed conversion ratio	饲料转化率	1.50 kg
Dead	死亡率	3.1 %

## SLAUGHTER PIGS 屠宰猪 (30 Kg -> 30公斤以上)

(Average for all 平均)

Feed conversion ratio	饲料转化率	2.60 kg
Average slaughter wgt	平均屠宰体重	87.6 kg
Average lean meat pct	平均瘦肉比例	62.5 %
Dead	死亡率	3.5 %

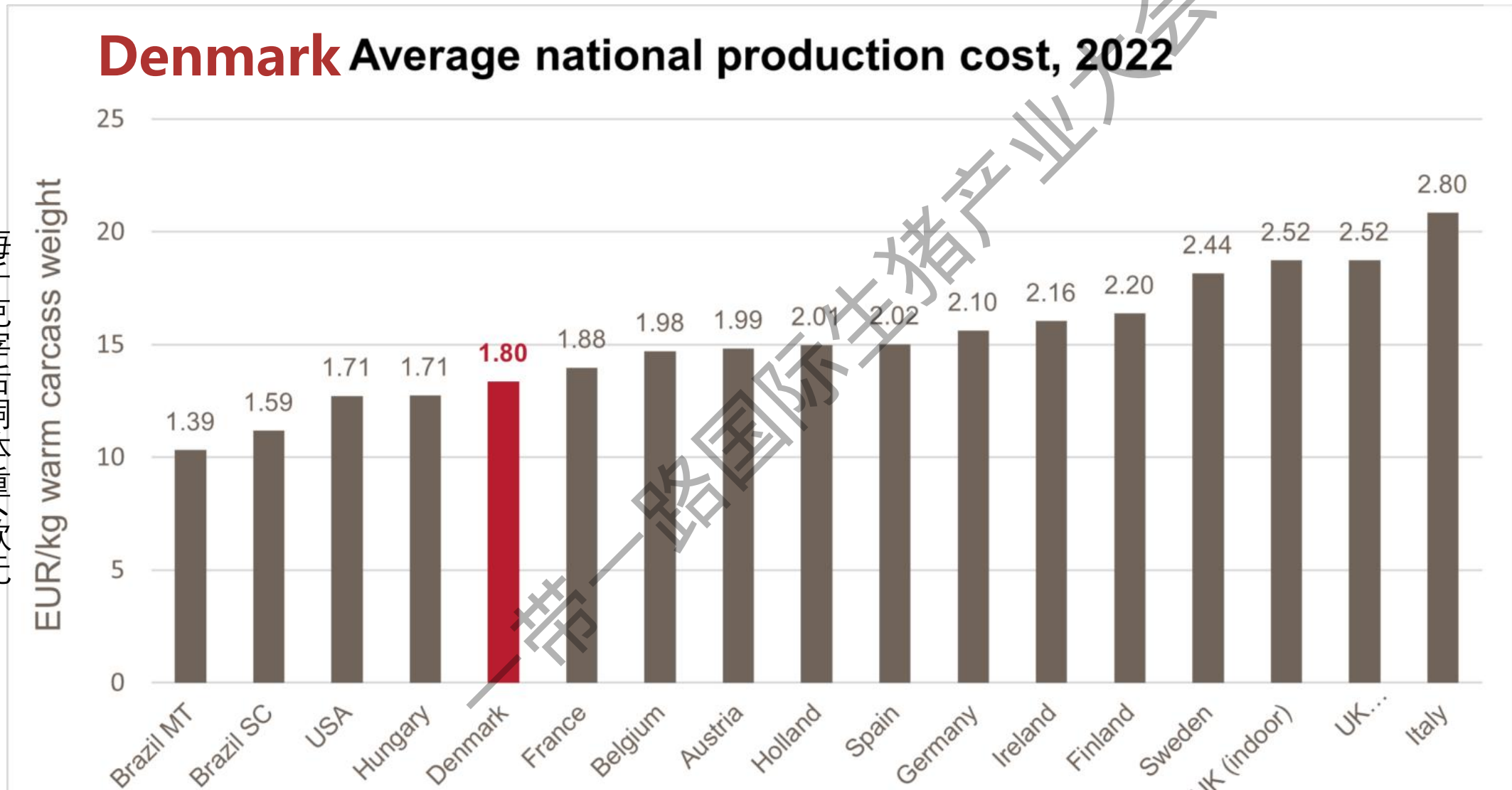
## SLAUGHTER PIGS

(25% with best production value/pen place/year) 前25%的最佳产值

Feed conversion ratio	饲料转化率	2.30 kg
Average slaughter wgt	平均屠宰体重	87.6 kg
Average lean meat pct	平均瘦肉比例	62.5 %
Dead	死亡率	3.4 %

# 丹麦全国2022年平均生产成本

每千克宰后胴体重\欧元



巴西MT 巴西SC 美国 匈牙利 丹麦 法国 比利时 奥地利 荷兰 西班牙 德国 爱尔兰 芬兰 瑞典 英国（室内） 英国（户外） 意大利



# 丹麦

## Denmark

	2022	2022	2022	2023	2023	变化
	1月1日 10月1日	4月1日 2022	7月1日	1月1日 2023	Changes	变化
	1. jan.	1. april	1. juli	1. okt.	1. jan.	1.jan.2022 - 1.jan.2023
	1000头为单位 1000 PCS					2022年1月1日- 2023年1月1日
实际生猪存栏数 Pigs in total, actual numbers	13 152	12 465	12 179	11 902	11 541	-1 611
采精公猪 Breeding Boar	1 0	1 0	1 0	1 0	1 0	0
母猪总数 Sow in total	1 020	9 78	9 68	9 39	9 15	-105
后备数 Gilt	1 92	1 85	1 86	1 79	1 74	-18
其他怀孕母猪 Other pregnant	5 85	5 55	5 48	5 31	5 24	-61
哺乳母猪 Lactating	2 07	2 05	2 01	1 96	1 86	-21
淘汰母猪和公猪 Sows and boars fore slaughter	0 7	0 7	0 8	0 6	0 6	-1
配种后备 Breeding gilts	2 15	2 13	2 23	2 18	2 03	-12
哺乳仔猪 Piglets with sows	2 592	2 569	2 512	2 472	2 332	-260
50公斤内的断奶猪 Weaned pigs under 50 kg	6 048	5 774	5 664	5 485	5 357	-691
50公斤上的育肥猪 Fattening pigs 50 kg and above	3 260	2 914	2 794	2 772	2 718	-542

Kilde: [www.statistikbanken.dk/svin](http://www.statistikbanken.dk/svin)

# Part 1

## How DanAg help farms in Asia 丹俄国际如何帮助亚洲农场

- Education system 教育系统
- Training on farm 农场培训
- Visit the farm 农场拜访
- Biosecurity audit 生物安全审计
- Report of visiting 拜访报告
- Track the implementation of the plan 追踪计划执行情况
- Improve KPIs 改进关键绩效指标
- Cost reduction 降低成本



How DanAg help

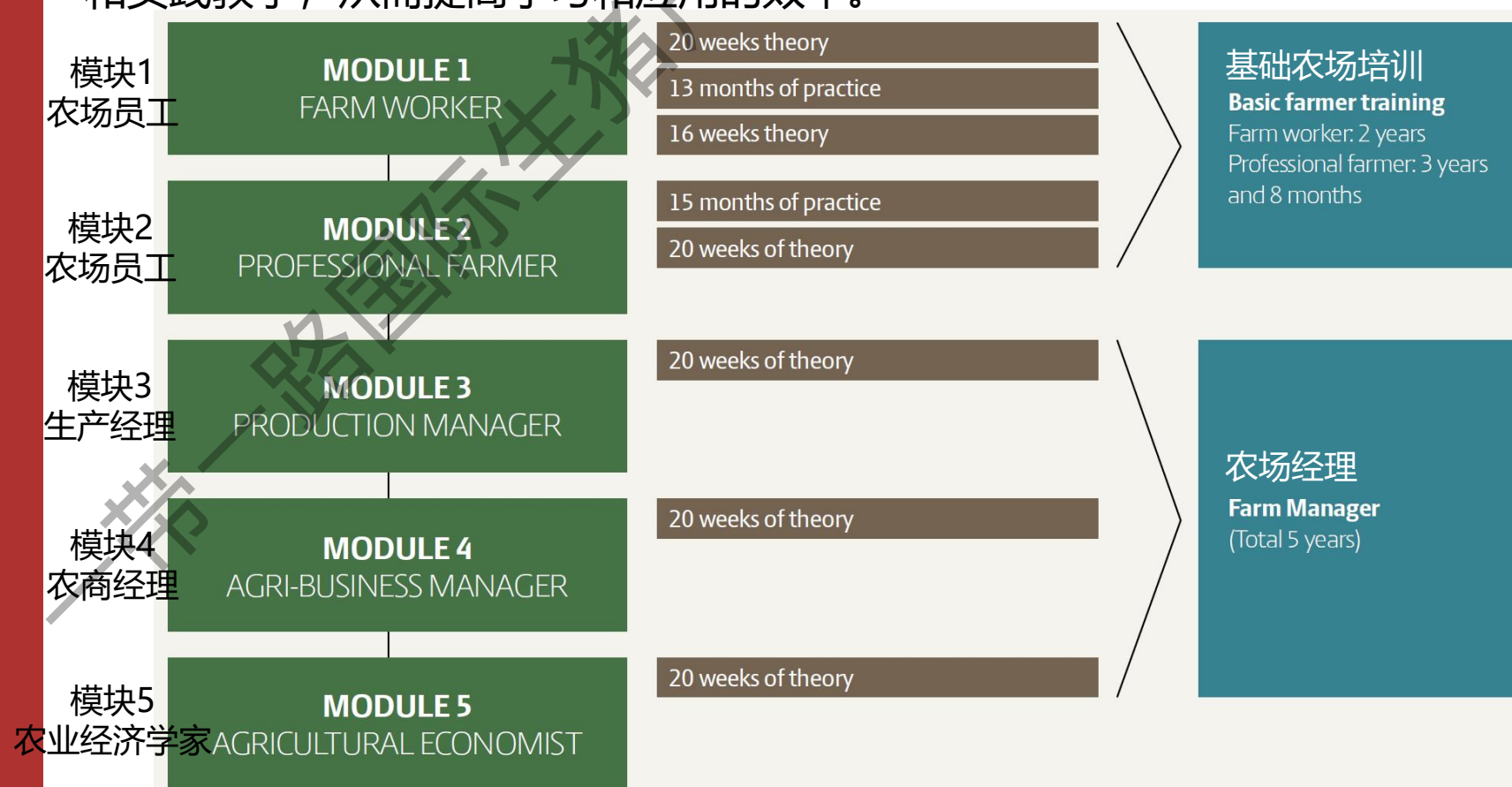
farms in Asia

丹俄国际如何帮助亚

洲农场

## Education system 教育系统

Utilizing the "sandwich" educational approach from Denmark's SEGES, the teaching of knowledge and practice is conducted in an alternating and iterative fashion, which enhances the efficiency of both learning and application. 利用丹麦 SEGES 的 "三明治" 教学法, 以交替和迭代的方式进行知识和实践教学, 从而提高学习和应用的效率。



# How DanAg help farms in Asia

## 丹俄国际如何帮助亚洲农场

## Training on farm 农场培训



The training content includes 8 modules: production safety, Biosecurity and health, Gilts development, production management of breeding and gestation barn, farrowing production management, production management from weaner to finisher, production data analysis, and swine economics. This comprehensive training is designed to help employees grow into roles as managers and coaches. 培训内容包括 8 个模块：生产安全、生物安全与健康、猪群发展、配种舍和妊娠舍的生产管理、产仔生产管理、从断奶仔猪到育成猪的生产管理、生产数据分析以及猪经济学。该综合培训旨在帮助员工成长为管理者和教练。

模块 1 Module 1	生产安全 Work Safety	模块 2 Module 2	生物安全与健康 Biosecurity and Health Management	模块 3 Module 3	后备培育 Gilts Development	模块 4 Module 4	环境控制与数据管理 Climate Control And Data Management
5 晚课堂培训 5-night Classroom Training	工作安全 Work Safety	5 晚课堂培训 5-night Classroom Training	生物安全 Biosecurity	5 晚课堂培训 5-night Classroom Training	繁殖生理学基础 Basic Reproductive Physiology	5 晚课堂培训 5-night Classroom Training	猪舍环境 Stable Environmental
	用火安全 Fire Safety		车辆运输生物安全 Transport Biosecurity		后备母猪培育 Gilts Development		场长的环境医学工具箱 Environmental Medicine Tool For Farm Management
	猪行为学 Pig Behavior		洗浴进出 Shower In/Shower out		猪发情周期 The Porcine Estrous Cycle		数据管理 Application of Data Management
	安全与猪工作 Safe Pig Handling		治疗管理 Treatment Management		后备母猪发情管理 Gilt Estrus Cycle Management		可视化管理应用 Visual Management
	人畜共患病 Zoonosis		日常护理 Basic Daily Care				
	安全工具箱课程 Safety Toolkit Lessons		免疫指导 Vaccination Guidelines				
5 天现场实操培训 5-Day On-farm Practice	针对上述专题的实操培训 On-farm training on the above topics	5 天实操培训 5-day On-farm Training	针对上述专题的实操培训 On-farm training on the above topics	5 天实操培训 5-day On-farm Training	针对上述专题的实操培训 On-farm training on the above topics	5 天实操培训 5-day On-farm Training	针对上述专题的实操培训 On-farm training on the above topics
	制定上述专题的标准操作流程 Make SOP for the above topics		制定上述专题的标准操作流程 Make SOP for the above topics		制定上述专题的标准操作流程 Make SOP for the above topics		制定上述专题的标准操作流程 Make SOP for the above topics



# How DanAg help farms in Asia

## 丹俄国际如何帮助亚洲农场

## Visit the farm 农场拜访

Training and inspection are conducted on-site at the pig houses. The key points of the Standard Operating Procedures (SOPs) are explained, followed by on-site demonstrations. Finally, the operations of the on-site personnel are inspected, and any mistakes are pointed out.

培训和检查在猪舍现场进行。首先讲解标准操作程序 (SOP) 的要点，然后进行现场演示。最后，对现场人员的操作进行检查，并指出任何错误。

### 1 Teach 教学

### 2 Show 演示

### 3 Check 检查



1 Teach on site 现场教学



# How DanAg help farms in Asia

## 丹俄国际如何帮助亚洲农 场



## Visit the farm 农场拜访

Conduct additional training in stable again, accompanied by operational demonstrations. While demonstrating the key movements, explain the associated knowledge. Ensure that employees understand and appreciate the importance of the SOP, and help them to remember the essential points of the operations.

再次在稳定状态下进行补充培训，同时进行操作演示。在演示关键动作的同时，讲解相关知识。确保员工理解并认识到 SOP 的重要性，帮助他们牢记操作要点。

### 1 Teach 教学

### 2 Show 演示

### 3 Check 检查

### 2 Show on site 现场演示



# How DanAg help farms in Asia

## 丹俄国际如何帮助亚洲农场

### 1 Teach 教学

### 2 Show 演示

### 3 Check 检查

## Visit the farm 农场拜访

Perform another check on the employees' operations to ensure they are being carried out correctly. Point out any errors and suggest which movements can be made faster and more efficiently. Train the employees to calculate their working time and help them understand how long it takes to assist in the farrowing of a single sow.

再次检查员工的操作，确保其正确执行。指出任何错误，并建议哪些动作可以做得更快、更有效。培训员工计算工作时间，帮助他们了解协助一头母猪产仔需要多长时间。

### 3 Check on site 现场检查



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丹俄国际如何帮助亚

洲农场

## Biosecurity audit 生物安全审计

Biosecurity is one of the most critical aspects of a pig farm. It encompasses measures to prevent external pathogens from entering the farm and to stop the spread of internal pathogens between different stables. In Asia, African Swine Fever (ASF) poses one of the greatest challenges. Many pig farms opt to establish their own trucks wash and disinfection station and drying station to enhance biosecurity measures.

生物安全是养猪场最关键的环节之一。它包括防止外部病原体进入猪场和阻止内部病原体在不同猪舍之间传播的措施。在亚洲，非洲猪瘟（ASF）是最大的挑战之一。许多养猪场选择建立自己的卡车清洗消毒站和干燥站，以加强生物安全措施。





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丹俄国际如何帮助亚

洲农场

## Biosecurity audit 生物安全审计

In addition to controlling all entries into the pig farm, including trucks, personnel, and supplies, it is also crucial to pay attention to the farm's exits. The transportation and disposal of dead pigs can also pose a significant risk for disease transmission. It is essential to ensure that there is no cross-contamination during the handling of deceased animals and to guarantee that external personnel and vehicles do not bring pathogens into the farm.

除了控制所有进入养猪场的人员（包括卡车、人员和供应品）外，还必须注意养猪场的出口。死猪的运输和处理也会带来重大的疾病传播风险。必须确保在处理死亡动物时没有交叉感染，并保证外部人员和车辆不会将病原体带入猪场。



# How DanAg help farms in Asia

## 丹俄国际如何帮助亚洲农场

## Report of visiting 拜访报告

After each visit, a visit report is compiled. This report documents all issues that require rectification, including biosecurity, data, production processes, and SOP operations, among others. Detailed solutions and deadlines, along with the person responsible, are provided. During subsequent visits, the progress of these rectifications is tracked.

每次考察后，都会编写一份考察报告。该报告记录了所有需要整改的问题，包括生物安全、数据、生产流程和 SOP 操作等。报告还提供了详细的解决方案和期限，以及负责人。在随后的考察中，将跟踪这些整改的进展情况。

访问	顾问	日期	2021年03月31日
Consultant	赵毅博	Date	Mar 31st 2021
客户代表	翻译	赵毅博	
Client representative	李颖	Translator	Joey
审核人1	审核人2	史蒂芬	
Reviewer1	王博彪	Reviewer2	Stefan

猪场概况	Farm profile
开始使用时间	2020年1月
Start usage time	January 2020
存栏规模	1300头母猪
Inventory	1300 sows
生产级别	普格代场
Production level	GOP
母猪来源	自繁自育
Gilt's source	Self-reproduction
种猪品种	大白、长白、杜洛克、皮特兰
Genetics	Large white, Landrace, Duroc and Pietrain
生产模式	周批次
Production mode	Weekly batch
隔离舍容量	2栋，一栋20个大栏，一栋60个限位栏
ISO capacity	2 buildings, 20 pens in one, 60 stalls in another one
保育舍容量	没有
GDU capacity	None
配怀舍容量	1栋，1192个限位栏，34个大栏，每个大栏4.3平方米
Mating & gestation capacity	1 building with 1192 stalls and 34 pens, 4.3 m <sup>2</sup> of each pen
分娩舍容量	5个单元，50个产床单元
Farrowing capacity	1 building with 5 units, 50 crates per unit
保育舍容量	1栋，5个单元，共计160大栏，每个大栏2.4m*3.6m
Nursery capacity	1 building with 5 units, total 160 pens, each pen is 2.4m*3.6m
育肥舍容量	3栋，5个单元，共计197大栏，每个大栏10.8m*3.6m
Finisher capacity	3 buildings with 5 units, total 197 pens, each pen is 10.8m*3.6m
公猪站栏位	2个单元，172个定位栏，18个大栏，2个训练栏位
AI station capacity	2 units with 172 stalls and 18 individual pens, 2 training pens and 4 semen collection pens



公猪站	问题	改善方案
AI station	Questions	Improvements
1	淋浴间未使用，存在生物安全风险 The shower room is not used with Biosecurity risk	进出公猪站洗澡 Took shower in and out of the boar stud
2	无物品消毒间，存在生物安全风险 There is no disinfection room with Biosecurity risk	进入物资要进行臭氧或紫外消毒 The incoming materials should be disinfected by ozone or UV
3	实验人员不熟悉精子密度仪的使用 Lab worker is not familiar with the use of Magapor MAGACELL	培训 Had training

8	冷冻冰箱内无高度温度计，无温度记录 There is no height thermometer in the constant temperature refrigerator, no temperature record	购买高低温度计，每天记录2次温度 Bought a high and low thermometer to record the temperature in the constant temperature refrigerator twice a day
9	料盒内有饲料结块，未及时处理 There is feed cake in the feed box and it is not cleaned up in time	定期清理料盒 Clean the feed box regularly

分娩舍	问题	改善方案
Farrowing room	Questions	Improvements
1	产房没有全进全出 No all-in and all-out in farrowing room	产房必须执行全进全出 Must implement all-in and all-out in farrowing room
2	产房冲洗不干净，粪坑粪污没有排空 The farrowing room was not washed clearly, and the manure in the pit is not emptied	产房冲洗后，由分娩舍主管负责检查，通知兽医再次检查，检查合格后签字确认，检查不合格重新冲洗。 After the farrowing room is power washed, the farrowing manager will be responsible for the inspection, and the veterinarian will check again. After passing the inspection, sign for confirmation. Re-wash if the inspection fails.



How DanAg help

farms in Asia

丹俄国际如何帮助亚

洲农场

# Track the implementation of the plan 追踪计划执行情况



During each visit to the farm, discussions are held with the managers of each stable regarding the implementation status of the previous visit 's report. These discussions cover which issues have been resolved and which ones remain outstanding, along with the reasons for any unresolved issues. It is also important to explore any difficulties they may be facing and what kind of support they might need. By assisting them in overcoming these challenges, the goal is to continuously improve the farm' s production performance. 每次访问农场时，都会与每个单元的管理人员讨论上次访问报告的执行情况。讨论内容包括哪些问题已经解决，哪些问题仍未解决，以及未解决的原因。同样重要的是，要探讨他们可能面临的任何困难，以及他们可能需要什么样的支持。通过帮助他们克服这些挑战，目标是不断提高农场的生产绩效。



# How DanAg help

## farms in Asia

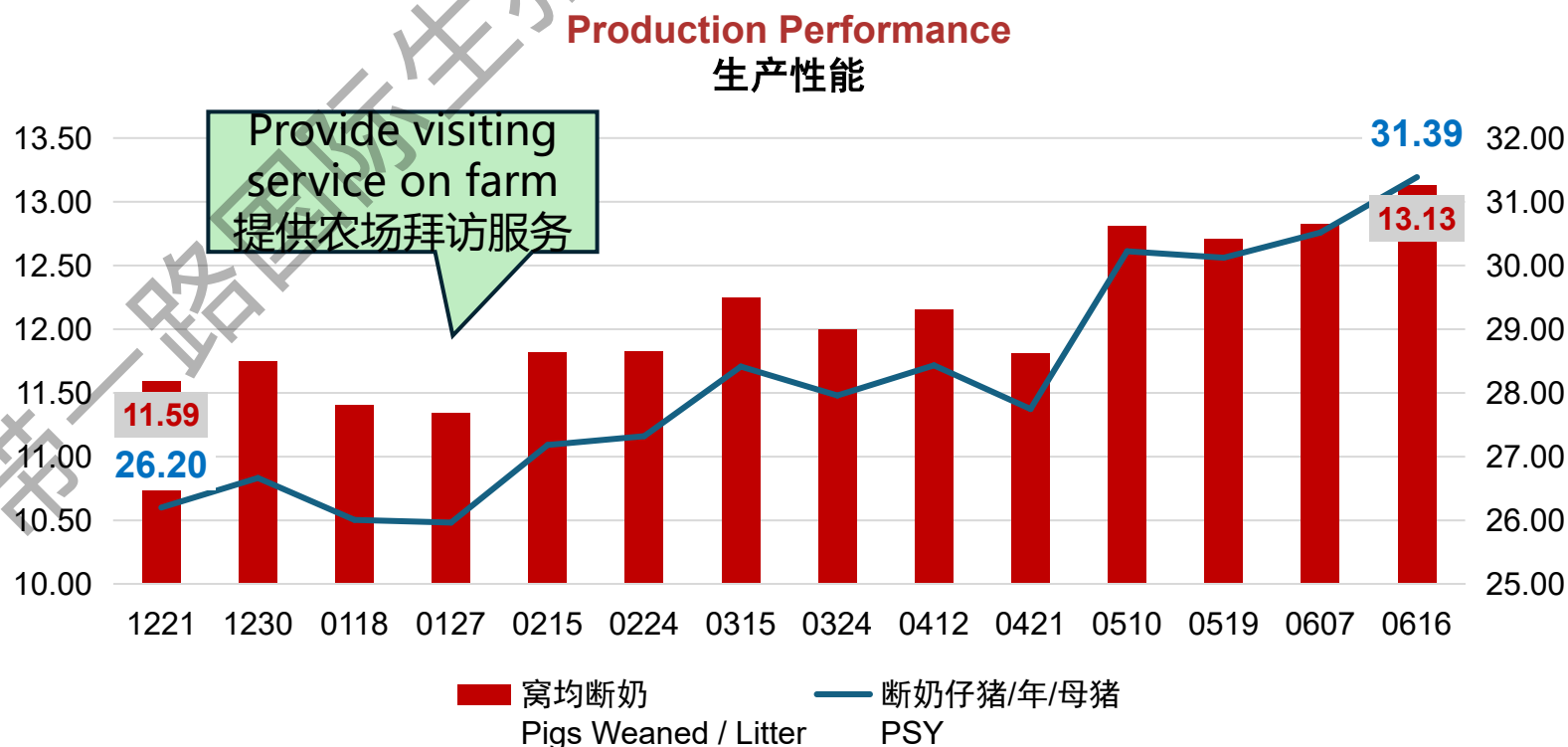
## 丹俄国际如何帮助亚

## 洲农场

## Improve KPIs 改进关键绩效指标

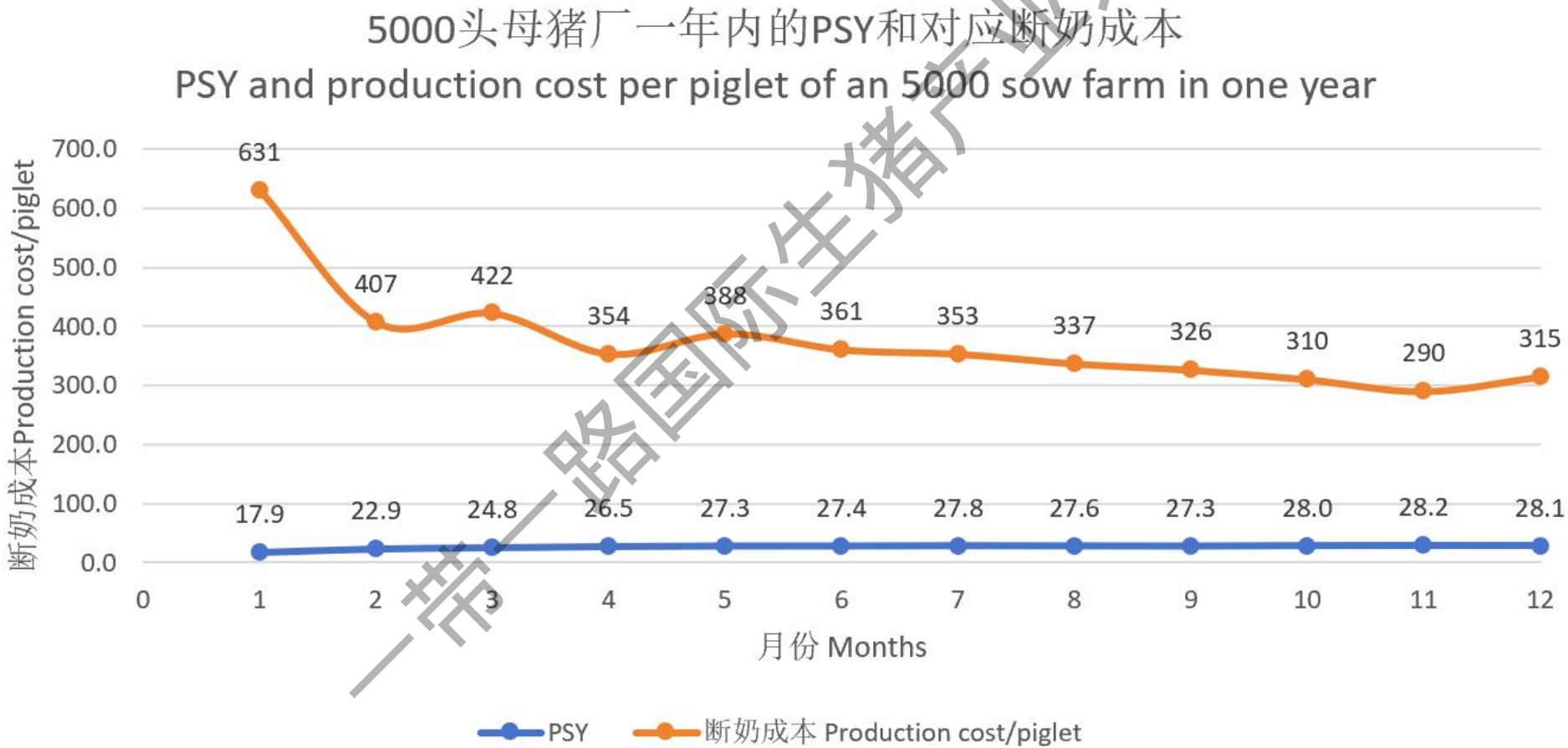
Data analysis is a powerful tool for assessing current performance, tracking improvements, and setting future goals. When employees see tangible improvements in performance, it can have a profound impact on their morale and motivation.

数据分析是评估当前绩效、跟踪改进情况和设定未来目标的有力工具。当员工看到自己的绩效有了切实的提高，就会对他们的士气和积极性产生深远的影响。



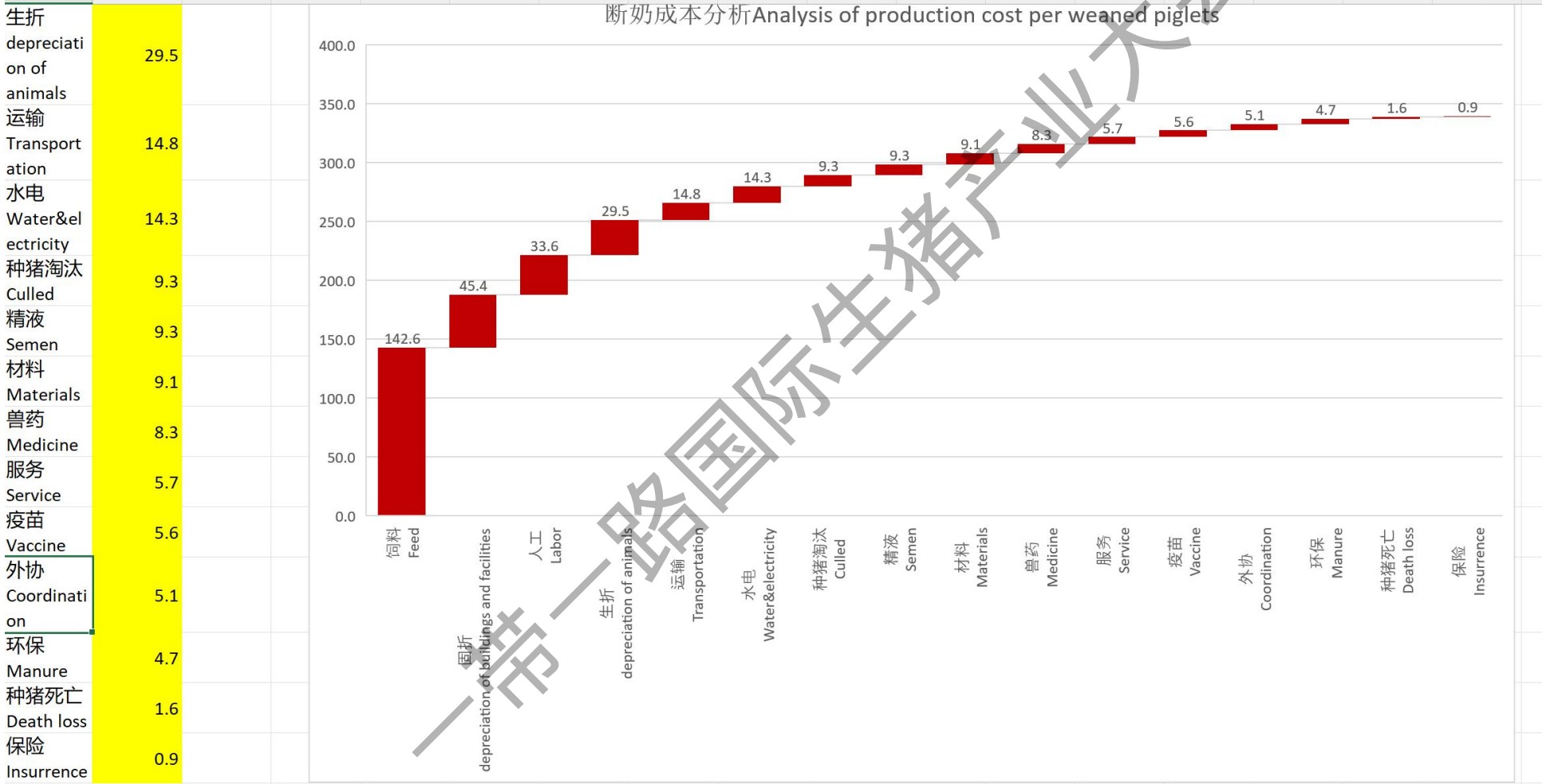
# How DanAg help farms in Asia

## 丹俄国际如何帮助亚洲农场



# How DanAg help farms in Asia

## 丹俄国际如何帮助亚洲农场



# How DanAg help

## farms in Asia

## 丹俄国际如何帮助亚

## 洲农场

### Cost reduction 降低成本

Here's how it can be applied:下面是它的应用方法:

- Current Position: By analyzing the data, you can determine the farm's current standing in terms of key performance indicators (KPIs) such as production efficiency, biosecurity compliance, health and mortality rates, and financial metrics. This provides a clear picture of where the farm stands at the moment.
- 当前状况：通过分析数据，您可以确定农场在关键绩效指标 (KPI) 方面的现状，如生产效率、生物安全合规性、健康和死亡率以及财务指标。这样就能清楚地了解农场目前的状况。
- Post-Improvement Position: Continuous improvement initiatives can lead to significant changes in these KPIs. By analysing data before and after implementing changes, you can observe the progress made. This might include increased production rates, reduced disease incidence, improved biosecurity practices, and better financial outcomes.
- 改进后的状况：持续改进措施可使这些关键绩效指标发生重大变化。通过分析实施变革前后的数据，您可以观察到所取得的进展。这可能包括提高生产率、降低疾病发生率、改进生物安全措施以及改善财务结果。





# How DanAg help

## farms in Asia

### 丹俄国际如何帮助亚

### 洲农场

## Cost reduction降低成本

- Goals: Setting clear, measurable goals is essential for guiding the farm 's strategic direction. These goals could be related to increasing production, reducing costs, enhancing biosecurity, or achieving specific health targets. Data analysis helps in setting realistic targets by providing a baseline and allowing for the tracking of progress towards these objectives.
- 目标：制定明确、可衡量的目标对于指导农场的战略方向至关重要。这些目标可能与提高产量、降低成本、加强生物安全或实现特定健康目标有关。数据分析通过提供基线和跟踪实现这些目标的进展情况，有助于制定切合实际的目标。
- When employees see tangible improvements in performance, it can have a profound impact on their morale and motivation. Recognizing and celebrating achievements, no matter how small, can foster a sense of accomplishment and encourage a culture of continuous improvement. This, in turn, can lead to a more engaged workforce that is committed to the farm 's success.
- 当员工看到绩效得到切实改善时，会对他们的士气和积极性产生深远影响。表彰和庆祝所取得的成就，无论多么微小，都能培养成就感，并鼓励不断改进的文化。反过来，这也会使员工更加投入，致力于农场的成功。



# 丹俄国际如何帮助亚洲农场



# How DanAg help farms in Asia

## 丹俄国际如何帮助亚洲农场

It works as a tool in a constant progress:  
它是一个不断进步的工具:

- Create overview
- Work planning / resource planning
- Follow up on targets
- Sop
- Suggestion/improvement board

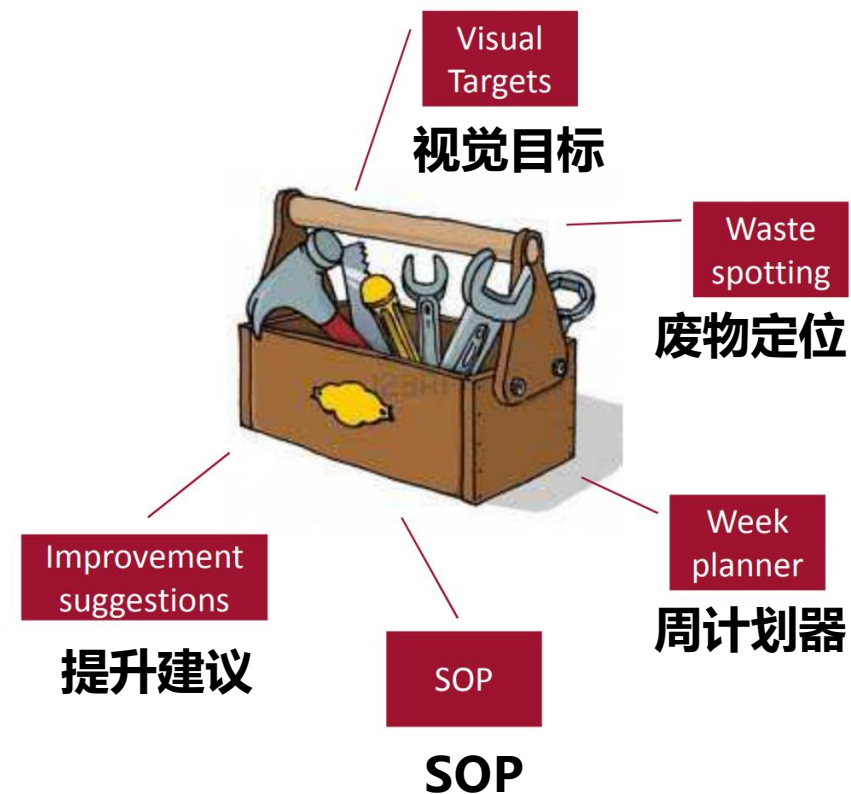
创建概览

工作规划/资源规划

追踪目标

标准操作流程

建议/改进板



丹 俄 国 际



INTERNATIONAL

感谢关注!

THANKS FOR YOUR ATTENTION!

丹俄农业技术咨询（郑州）有限公司

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