

规模猪场繁殖现状和突破思路

Reproduction status and breakthrough ideas of large-scale pig farms

Science-driven solutions[®]

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今日主题

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2024年我国生猪产业的母猪繁殖力概况（农业农村部统计数据）

Overview of sow fertility in Chinas pig industry in 2024 (Statistics from the Ministry of Agriculture and Rural Affairs)

- 能繁母猪**年平均存栏数**：4078万头（全球占比58.47%）。
- **Annual average inventory of breeding pigs: 40.78 million (58.47% of the world).**
- 生猪出栏总数：7.0256亿头（全球占比54.41%,头均体重128.55公斤）。
- **Total number of pigs sold: 702.56 million (global proportion 54.41%, average weight per head 128.55 kg).**
- 其中**TOP20**出栏占比：27.63%
- **Among them, TOP20 accounted for 27.63% of the total output**
- **TOP4 (CR4:牧原,温氏,双胞胎,新希望) 出栏占比：19.35%~1.359亿头**
- **TOP4 (CR4: Muyan, Wens, Twins, New Hope) output ratio: 19.35% ~ 135.9 million head**
- 生猪产业繁殖力的整体水平：
- **Overall level of reproductive capacity in pig industry:**
- MSY17.29头（PSY19.88头）。
- MSY17.29 head (PSY19.88 head).
- NPD? (>56天), LSY? (<2.15胎)
- NPD? (> 56 days), LSY? (< 2.15 fetuses)
- 断奶配种率 (<82%) ~ 断奶分娩率? (<75%)
- Weaning breeding rate (<82%) ~ weaning delivery rate (<75%)
- ...

TOP4全球出栏占比10.53%

TOP4 accounted for 10.53% of global shipments



一，2024年规模化猪场繁殖力现状

I. Current status of reproductive capacity in large-scale pig farms in 2024

从多家大型猪企 (76.3万头母猪/263家猪场) 数据，评估母猪繁殖能力和效率现状
Evaluate the reproductive capacity and efficiency of sows based on data from multiple large pig enterprises (763,000 sows/263 pig farms)

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(数据存在局限，仅供参考)

(Data is limited and for reference only)

PSY < 24头, 占比44.3%
PSY < 26头, 占比78.9%

263家猪场PSY分布状况
PSY distribution status of 263 pig farms

PSY > 26头
21.2%

占比	6.7%	14.4%	23.2%	34.6%	12.3%	7.7%	1.2%
PSY分布 (头)	<20头	20-22头	22-24头	24-26头	26-28头	28-30头	>30头

263家猪场NPD分布状况
Distribution of NPD in 263 pig farms

NPD < 55天
56.8%

占比	9.5%	18.7%	28.6%	23.4%	19.8%
NPD分布 (天)	<35天	33-45天	45-55天	55-65天	>65天

NPD > 55天,
占比43.2%

XX省37家 < 2500头规模猪场NPD分布状况
NPD distribution status of 37 pig farms with 2,500 heads or fewer in XX province

NPD < 55天
68.5%

适度规模
猪场

占比	17.5%	21.3%	29.7%	15.9%	15.6%
NPD分布 (天)	<33天	35-45天	45-55天	55-65天	>65天

NPD > 55天,
占比31.5%

配分率 < 85%,
占比 57.3%

263家猪场断奶配种分娩率分布状况

Distribution of weaning, breeding and delivery rates in 263 pig

配分率 > 85%,
占比 42.7%

占比	12.2%	17.4%	27.7%	26.5%	16.2%
分娩率分布 (%)	<75%	75-80%	80-85%	85-90%	>90%

LSY < 2.2胎,
占比 34.5%

263家猪场年均胎次LSY分布状况：三分天下

Annual average parity distribution of LSY in 263 pig farms: Three parts of the world

LSY > 2.3胎,
占比 30.9%

占比	5.8%	8.4%	20.3%	34.6%	21.3%	9.6%
LSY分布 (胎/年)	<2胎	2.0-2.1胎	2.1-2.2胎	2.2-2.3胎	2.3-2.4胎	>2.4胎

不同猪企、同一猪企不同猪场间母猪繁殖效率差异大

There are significant differences in the reproductive efficiency of sows between different pig companies and different pig farms within the same pig company

生猪产业面临“中等繁殖力陷阱”的困扰

The pig industry is facing the "medium fertility trap"

长期PSY在24~25头左右徘徊
PSY has been hovering around 24-25 heads for a long time.

表面上是两大障碍
On the surface, there are two obstacles

母猪繁殖障碍
Sow reproductive disorders

母猪乏情、非生产天数高(繁殖效率低下)
Sows show low libido and have a high number of non-productive days (indicating poor reproductive efficiency)

仔猪腹泻死淘
Wean piglet diarrhea death

产房死淘率高(PED, RV, GETV...影响大)
The delivery room has a high rate of premature deaths (PED, RV, GETV... with significant impact).

深层次是复杂性和不确定性
Depth is complexity and uncertainty

今天中国养猪业的规模化是史无前例的
Today, the scale of Chinas pig farming industry is unprecedented

这种复杂性靠单一的系统、流程、产品无法解决
This complexity cannot be solved by a single system, process, or product

我国生猪养殖损失最大的10种疫病

The top 10 diseases causing the greatest losses in pig farming in China

疫病损失只是表面现象，深层次的根源？
Is the loss caused by the epidemic only a superficial phenomenon, but a deep-seated root cause?

病原名称	爆发频率	防控成本	全国经济损失
非洲猪瘟	偶发	45元/头	670亿元/年
蓝耳病	高发	32元/头	480亿元/年
流行性腹泻	高发	36元/头	260亿元/年
轮状病毒	频发	32元/头	120亿元/年
圆环病毒	频发	24元/头	90亿元/年

防控成本：>1200亿元
Prevention and control costs:> 120 billion yuan

经济损失：>1500亿元
Economic loss:> 150 billion yuan

头均商品猪>380元
The average price of commercial pigs is more than 380 yuan

实验室持续监测情况
Continuous monitoring in the laboratory

- 1, 蓝耳病困扰: NADC30/34-Like~大型规模化猪场普遍的适配毒株。
1. PRRS challenge: The NADC30/34-Like strain is widely used in large-scale pig farms as a suitable vaccine candidate.
- 2, PED持续影响: 2025年上半年的G2c变异株, 局地死亡率高达90%。
2. Persistent PED effects: The G2c variant in the first half of 2025 showed a local fatality rate of up to 90%.
- 3, 盖塔病毒: 2024年GETV G II 1变异株扩散迅速, 单纯感染致死率高达80%。
3. Geta virus: The 2024 GETV G II 1 variant spread rapidly, with a fatality rate of 80% in single infections.
- 4, 轮状病毒新基因型: G9p(8)变异株影响仔猪成活率。
4. The novel rotavirus genotype G9p(8) variant has been shown to reduce piglet survival rates.
- 5, 诺如病毒: 严重影响产房仔猪死淘率, 繁殖群规模越大风险越大。
5. Norovirus: It significantly increases the mortality rate of piglets in farrowing rooms, with higher risks associated with larger breeding herds.



二，养猪“福建模式”的五大突出点

2. Five outstanding points of "Fujian model" of pig breeding

深层次的根源： Deep roots:

- ①生产资源、管理思维与劳动对象的矛盾。
① The contradiction between production resources, management thinking and labor objects.
- ②规模大而不精、不细、不强，健康逻辑混乱。
② Large in scale but not refined, not detailed, not strong, and the logic of health is confused.
- ③后备猪培育的粗放和滞后。
③ Extensive and backward breeding of replacement pigs.

福建省生猪产业概况

Overview of pig industry in Fujian Province

- 福建省2024年能繁母猪存栏约70万头左右。
 - Fujian province has about 700,000 breeding sows in 2024.
 - 300~1000头母猪猪场约500余家（30万头母猪）；
 - There are approximately 500 pig farms with 300 to 1,000 sows, totaling 300,000 sows.
 - >1000头母猪猪场约150余家（32万头母猪）。
- There are more than 150 swine farms with 1,000 sows (320,000 sows).
- 规定疫病净化率全国第一**：蓝耳病阴性场160余家（15-20万头母猪，20%），经典猪瘟和猪伪狂犬病基本实现净化。
- It has been designated as the country's first in disease eradication rate**: more than 160 farms have been negative for PRRSV (150,000-200,000 sows, 20%), and classic swine fever and swine pseudorabies have been basically eradicated.

- 福建省4200万人口；
- Fujian province has a population of 42 million:
 - 饲养70万头母猪
 - Raise 700,000 sows
- 中国14亿人口：
 - 只需要2500万头母猪
 - Only 25 million sows

福建生猪产业：Fujian Pig Industry:

①规模化率92.5%（全国第三位），猪肉自给率102%。

① The scale rate is 92.5% (the third place in the country), and the self-sufficiency rate of pork is 102%.

②种业健康水平、规定疫病净化水平领先全国。

② The health level of the seed industry and the level of eradication of specified diseases are leading in China.

福建省生猪产业五大突出点

Five outstanding points of pig industry in Fujian Province

(一) 独特的天然屏障，猪场间有良好的自然隔断。

(1) Unique natural barriers, with good natural partitions between pig farms.

(二) 重视猪场选址，舍得“精准”配套，多点式生产。

(2) Pay attention to pig farm site selection, be willing to provide "precise" supporting facilities, and adopt multi-point production.

(三) 闽东、闽北、闽东南基本没有受到集团化养猪公司+养户的乱象影响，这方面在全国独树一帜。

(3) Min Dong, Min Bei, and Min Southeast are basically unaffected by the chaos of group pig farming companies and farmers, which is unique in the country.

(四) 严厉的环保监管，福建猪场规模适度（大多数猪场规模500-2000头母猪）。

(4) Strict environmental supervision and moderate scale of pig farms in Fujian (most farms have 500-2000 sows).

(五) 猪业协会核心成员“做表率，立示范”，主管部门支持，产学研推动。

(5) The core members of the Pig Industry Association set an example and set a good example, with the support of the competent department and the promotion of industry university research.



2024年福建生猪产业规模化猪场生产水平简况(供参考)

Overview of the Production Level of Large scale Pig Farms in Fujian's Pig Industry in 2024 (for Reference)

指标	前20平均	后20 平均	总体平均
MSY (头)	27.85	22.88	23.81
PSY (头)	29.53	24.76	25.73
窝均断奶仔数 (头)	12.35	11.1	11.34
产仔数 (头)	13.77	12.72	12.95
健仔数 (头)	12.97	11.74	11.96
育肥死亡率%	5.68	7.59	7.46
产房死亡率%	4.73	5.43	5.21
年胎次	2.39	2.23	2.27
胎次非生产天数 (天)	14.86	25.68	22.79
断配间隔 (天)	7.05	9.47	8.72
断奶分娩率%	87.83	79.81	82.41
断奶仔猪成本	<260元	<350元	300元左右

2024年福建生猪出栏量: 1653万头
2024 Fujian pig output: 16.53 million heads

资料来自于产业客服统计 (93家规模化猪场统计, 能繁母猪规模360-2670头)

The data is sourced from industry customer service statistics (covering 93 large-scale pig farms with breeding sow populations ranging from 360 to 2,670 heads).

我近两年参与产业工作的体会，总结分享给大家

I would like to share with you my experience of working in the industry for nearly two years

- **集团化养猪： Group pig farming:**
 - 用产能看战略； -Look at strategy in terms of capacity;
 - 用极致成本看底线；
 - Look at the bottom line at the highest cost;
 - 用扩大和争夺养户看发展。
- Look at development in terms of expanding and competing for feeders.
- **福建养猪模式：**基本没有集团养猪。
 - **Fujian pig farming model:** there is basically no group pig farming.
 - 用“**适度规模**”看战略。
 - Look at strategy in terms of "moderate scale".
 - 用实实在在的“**健康**”看底线。
 - Look at the bottom line in terms of real health.
 - 用“**养好猪**”看发展。
 - Look at development by "raising good pigs".

如何“养好猪” How to raise pigs

三，提升母猪繁殖效率的建议
3. Suggestions for improving sow reproductive efficiency

生产体系化工作的四项建议

Four suggestions for systematic production

Science-driven solutions®

一，重视猪舍的选址、建设和配套

First, pay attention to the site selection, construction and supporting facilities of the pig house

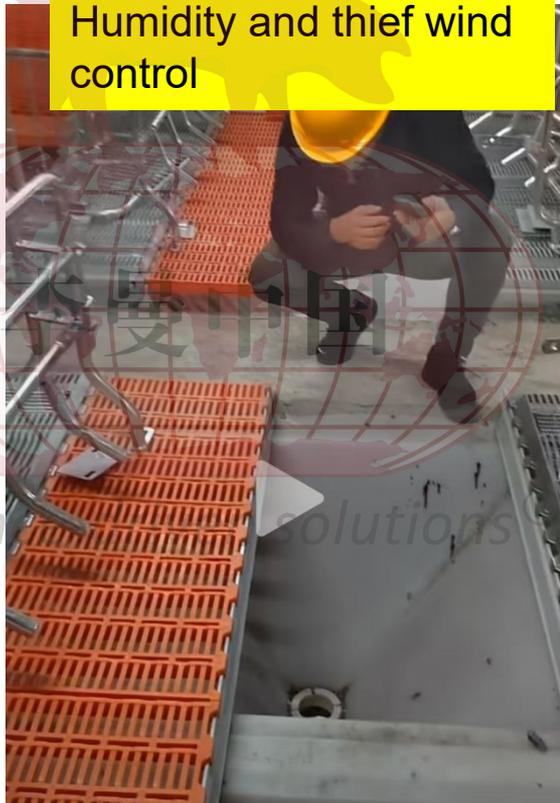


设施和配套 Facilities and amenities

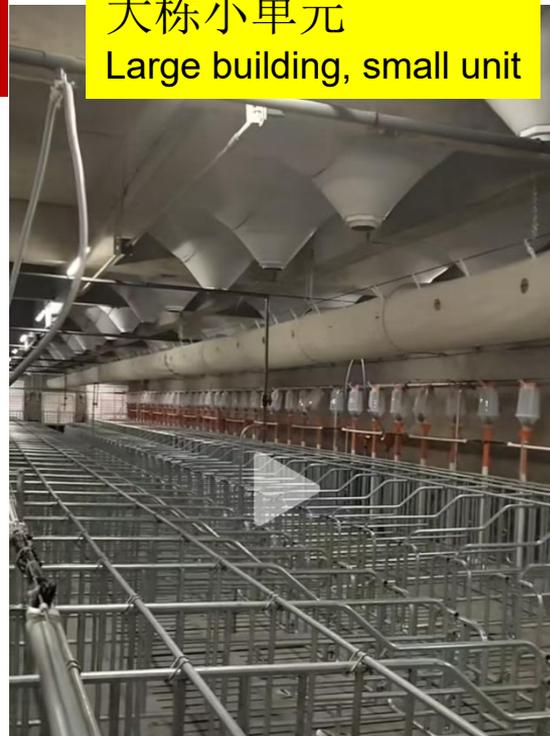
湿度和贼风控制
Humidity and thief wind
control



粪尿适时清空猪舍
Empty the pig barn at the right time



大栋小单元
Large building, small unit



智能化轻风环控系统
Intelligent light wind environmental
control system

(1) 环保：极大减少臭气污染。

(1) Environmental protection: **greatly reduce odor pollution.**

(2) 环控质量大幅提升，改善猪只健康度。

(2) The quality of environmental control has been greatly improved, and the health of pigs has been improved.

- 眼屎、泪斑、咳嗽大幅度减少，肤色好，采食量提高。
- Eye dirt, tear spots, coughing are greatly reduced, skin color is good, feed intake is increased.
- 母猪腹部无贼风，不着凉。
- Sows have no cold wind in the abdomen and do not catch cold.

影响状况 建设类型	眼屎、泪斑 (重度)	眼屎、泪斑 (中度)	眼屎、泪斑 (轻度)	哺乳母猪 平均采食量	仔猪 断奶重	健仔断奶 成活率
旧式(水泡粪) 正/负压通风	18.7%	23.3%	32.6%	5.27公斤	6.38公斤	93.5%
新型猪场	4.3%	8.5%	11.7%	6.76公斤	6.97公斤	96.6%

眼结膜、呼吸道黏膜损伤减少，血氧交换水平提高，母猪气色健康

Reduced damage to the conjunctiva and respiratory mucosa, increased blood oxygen exchange levels, and healthy complexion of sows



二，区域性，建立高健康繁殖群

2. Regional, establish high health breeding groups

打造无规定疫病繁殖群

Create a breeding group free of specified diseases

在免疫和治疗方面做减法

Subtract in immunology and therapy

猪场疫病净化评测Dp值

Disease Control Evaluation for Pig Farm Dp Value

- 相交互养殖规模评分（6级），50公里区域内养殖集中度（6级），20公里区域内病毒强度评估（6级），猪场所处自然隔断强度（6级），场间距离评分（10级），猪场生物安全等级评分（8级）。
- Inter-farm breeding scale rating (6 levels), breeding concentration within 50 km (6 levels), viral intensity assessment within 20 km (6 levels), natural barrier strength of the pig farm (6 levels), farm-to-farm distance rating (10 levels), and biosafety level rating of the pig farm (8 levels).
- $$Dp \text{ 值} = \frac{\int (\text{相交互养殖规模} + \text{区域性养殖集中度} + \text{区域内病毒强度})}{\sum (\text{自然隔断强度}) (\text{场间直线距离评分}) (\text{猪场生物安全评分})}$$
- $$Dp \text{ value} = \frac{\int (\text{intersecting pig raise scale} + \text{regional pig raise concentration} + \text{virus intensity within the region})}{\sum (\text{natural partition strength}) (\text{straight-line distance score between farms}) (\text{biosecurity score of pig farms})}$$
- **理想状态：Dp值 < 0.65，猪场完全可做疫病净化。Ideal condition: When the Dp value is below 0.65, the pig farm can achieve complete disease eradication.**
 - 当Dp值 > 0.65 < 1.0时，有阳转风险，改善后争取做净化。When the Dp value is greater than 0.65 and less than 1.0, there is a risk of positive transformation. After improvement, strive to achieve eradication.
 - 当Dp值 > 1.0 < 2.0时，两年内基本被转阳。When Dp value is greater than 1.0 and less than 2.0, it is basically positive within two years.
 - 当Dp值 > 2.0时，就不要做净化努力了，做稳定场就好。When Dp value is greater than 2.0, do not make eradication efforts, just do stable field.

具备净化条件的猪场坚定做双阴场，
不具备条件的猪场做假定阴场或稳定场，管理和配置上强化。

Pig farms with eradication conditions should firmly establish double negative farms, while pig farms without conditions should establish hypothetical negative farms or stable farms, and strengthen management and configuration.

(1) **精液**～必须来自双阴性公猪站。

(1) Semen must originate from a boar station with dual-negative status.

(2) Dp值 <0.65 的猪场：强化一切中转管理、后备猪的同源性管理和猪只流动性控制，做繁殖群双阴性猪场

(2) For pig farms with a Dp value <0.65 : Strengthen all transfer management, ensure genetic homogeneity of replacement pigs, and control pig mobility to establish a breeding herd with double-negative status.

(3) Dp值 $>0.65/ <1.0$ 的猪场：尽一切努力做双阴或假定阴性猪场，①繁殖母猪闭群循环生产和管理，②不免疫，管理配置加强。

(3) For pig farms with a Dp value >0.65 or <1.0 : Make every effort to achieve double-negative or presumed-negative status. ① Implement closed-loop production and management for breeding sows; ② Avoid immunization and enhance management protocols.

(4) Dp值 $>1.0/ <2.0$ 的猪场：①做阳性稳定场或假定阴性场；②采用驯化和使用安全的疫苗免疫。

(4) For pig farms with Dp values >1.0 or <2.0 : ① Designate as positive stable farms or presumed negative farms; ② Implement vaccination protocols using adapted and safe vaccines.

(5) Dp值 >2.0 的猪场：①疫苗免疫或驯化；②只能做阳性稳定场。

(5) Pig farms with D p value > 2.0 : ① Vaccination or domestication; ② can only be a positive stable field.

净化

闭群

免疫

高健康猪场具有高价值(尤其蓝耳病阴性场)

High health pig farms have high value (especially those with negative for PRRSV)

(1) 母猪繁殖力稳定, 仔猪断奶成本低 (<300元/头)。

(1) The sow fertility is stable, and the cost of weaning piglets is low (<300 yuan per head).

(2) 保育和育肥猪好养, 死淘率低 (<3%), 料肉比低 (<1: 2.65)。

(2) The pigs in nursery and fattening were easy to raise, with low mortality rate (<3%) and low feed-to-meat ratio (<1:2.65).

(3) 自繁自养猪场, 每头肥猪综合效益增加>200元/头。

(3) For self-breeding pig farms, the comprehensive benefit of each fat pig increased by more than 200 yuan per head.

(4) 商品猪平均动保费用<40元/头。

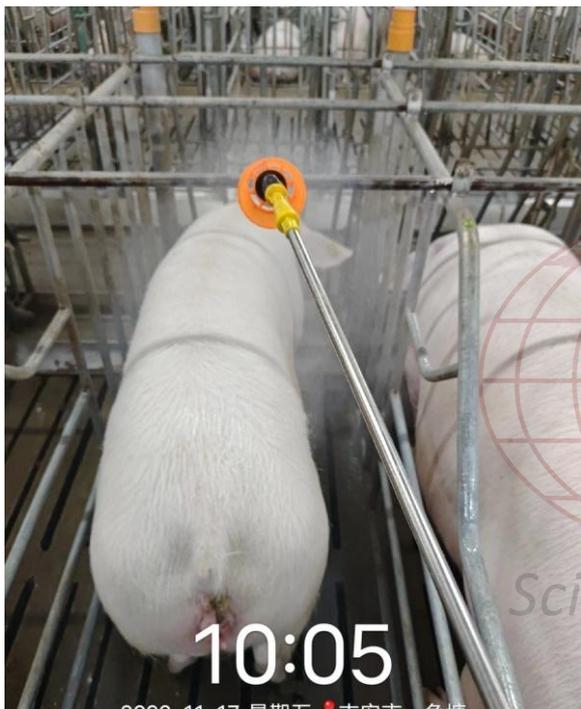
(4) The average animal protection cost of commercial pigs is less than 40 yuan per head.

福建养猪老板: 打造“高健康猪场”已形成普遍共识

Pig owners in Fujian: Building a "high health pig farm" has formed a general consensus

母猪生产稳定，MSY>26头，七天断配率>93%，断奶分娩率>90%

The number of sows was stable, MSY> 26, the rate of seven-day dismounting was> 93%, and the rate of weaning delivery was> 90%



高健康阴性场
High health negative farm



母猪皮毛润哲，健康度高，抗压性好（好养）

The mother pig has smooth fur, high health and good stress resistance (easy to raise)

亚健康母猪比例高，体况差，“三斑”普遍：泪斑、耳斑、锈斑

The proportion of suboptimal sows was high, the condition was poor, and the "three spots" were widespread: tear spots, ear spots and rust spots



亚健康阳性场

Sub-health positive farm



能繁母猪PSY < 24头，七天断配率 < 70%，断奶分娩率 < 80%

The number of fertile sows PSY < 24, the seven day weaning breeding rate is < 70%, and the weaning delivery rate is < 80%

亚健康哺乳母猪 Suboptimal lactating sows



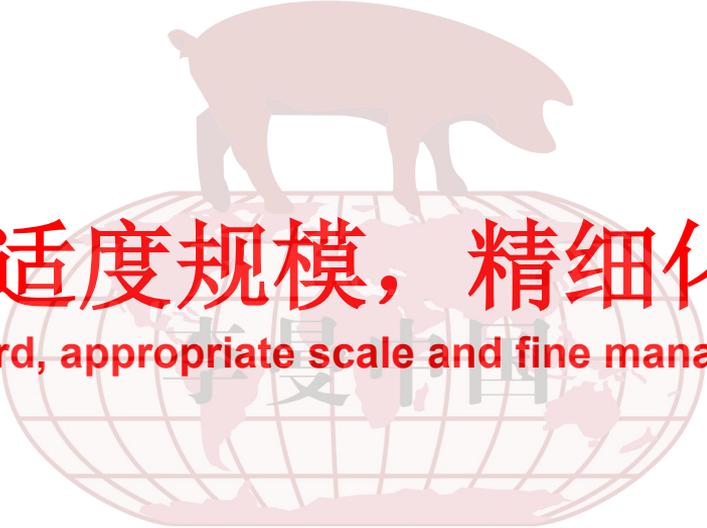
睾丸液PCR: 阳性率 > 70%
Testicular fluid PCR: positive rate > 70%
抗体S/P平均值: 1.87
Antibody S/P mean: 1.87
猪瘟抗体平均阻断值: 62.7
Average blocking value of swine fever antibody: 62.7
CV值: 32
PSY: 22.62头

持续病毒血症 Persistent viremia



高健康哺乳母猪
High health of lactating sows

睾丸液PCR: 0%
Testicular fluid PCR: 0%
抗原和抗体双阴性
Both antigens and antibodies are negative
猪瘟抗体平均阻断值: 84.3
Antibody average blocking value against swine fever: 84.3
CV值: 12
PSY: 29.85头



三，适度规模，精细化管理

Third, appropriate scale and fine management

Science-driven solutions[®]



③2025年福建生猪产业提出“区域产业联动，质量发展”新思路

③ In 2025, Fujian pig industry put forward a new idea of "regional industrial linkage and quality development"



en solutions

①自然屏障① Natural environmental barrier
②适度规模② Appropriate size



第一

抓母猪健康的精准管理

Precision management of sow health

福建养猪人观念：Concepts of pig farmers in Fujian:

- ① “一分钱一分货”，用优质原料和饲料。
- ① "One penny, one product" with high quality raw materials and feed.
- ② 科学饲喂，不浪费饲料，不从“母猪嘴里”抠成本。
- ② Scientific feeding, no waste of feed, no cost from "sows mouths".
- ③ 针对性小群护理和治疗，少用药，用好药。
- ③ Targeted small group care and treatment, less medication, good medication.



异常母猪小群护理
Care of small groups of abnormal sows



每周一健康评估：
Weekly health assessment:

- 抓体况恢复
- Focus on body condition
- 抓异常猪管理
- Manage abnormal pigs



料量调整和校正
Material adjustment and correction



异常“三斑”母猪分区
Zoning of abnormal "three spots" sows





第二

抓肠道健康

Focus on gut health

肠道：健康的第二大中心

The gut: the second most healthy center

健康第一大中心：心理健康(动物福利~神经系统感知和调节)

The first health center: mental health (animal welfare ~ nervous system perception and regulation)

肠道健康的重要性 The importance of gut health

(1) **代谢功能**: 多数维生素和必需氨基酸由肠道菌群合成, 饲料营养 80%的消化、100%的吸收在肠道完成。

(1) Metabolic function: Most vitamins and essential amino acids are synthesized by the gut microbiota, and 80% of the digestion and 100% absorption of feed nutrients are completed in the intestine.

(2) **防御功能**: 肠道是第一道屏障, 动物最大的免疫器官, 70%以上的免疫细胞在肠道。

(2) Defense function: The intestine is the first barrier and the largest immune organ in animals, with over 70% of immune cells located in the intestine.

(3) **调节功能**: 肠脑轴~肠心轴调控神经与内分泌...深度

(3) Regulatory function: gut brain axis~gut axis regulates nerves and endocrine... Depth
影响猪只心理、睡眠状态和生理功能。

Affects the psychological, sleep, and physiological functions of pigs.

65%以上的饲料成本与肠道有关

More than 65% of feed costs are related to the gut



肠道血便

Intestinal blood stool



梭菌性胀气死亡

Clostridium induced gas death



便秘

Constipation

功能紊乱性肠炎

Dysfunctional enteritis

母猪的肠道健康问题非常突出

Intestinal health problems in sows are very prominent

肠道菌群丰度检测～分析粪便Test的微生物种类和数量 Intestinal flora abundance detection ~ Analysis of microbial species and quantity in stool Test

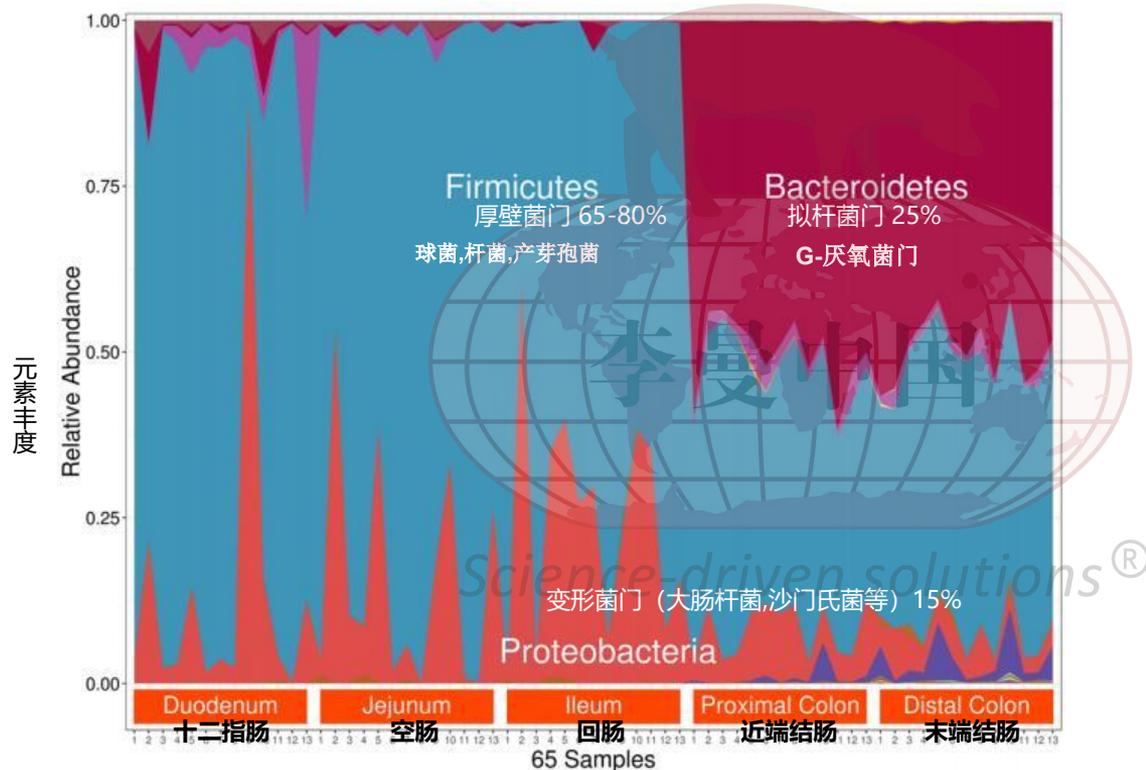
- 临床观察：掌握不同阶段、季节、饲料和饲喂模式，第一手粪便物理状态数据。
- Clinical observation: grasp the first-hand physical state data of feces at different stages, seasons, feeds and feeding patterns.
- 实时荧光定量PCR：特定功能引物扩增，检测目标菌群、菌种载量，筛查和监测。
- Real-time quantitative PCR: Amplification of specific functional primers to detect target microbial communities, strain load, and for screening and monitoring.
- 16S rRNA基因片段测序：鉴定肠道菌群组成和相对丰度。
- 16S rRNA gene fragment sequencing: to identify the composition and relative abundance of gut microbiota.

建立猪群肠道菌群丰度和平衡基准线，针对性进行肠道健康管理

Establish baseline for gut microbiota abundance and balance in swine herds, and implement targeted gut health management

猪的消化道菌群 Pig digestive tract microbiota

肠道共生菌群的丰度和平衡 Abundance and balance of intestinal symbiotic flora



Phyla	菌群
Euryarchaeota	广古菌
Actinobacteria	放线菌
Bacteroidetes	衣原体
Chlamydiae	蓝藻菌
Cyanobacteria	脱铁杆菌
Deferribacteres	迷踪菌
Elusimicrobia	纤维杆菌
Fibrobacteres	厚壁菌
Firmicutes	梭菌
Fusobacteria	浮霉菌
Planctomycetes	变形菌
Proteobacteria	螺旋菌
Spirochaetes	互养菌
Synergistetes	TM7
TM7	软壁菌
Tenericutes	疣微菌
Verrucomicrobia	WPS-2
WPS-2	



①水料，湿拌料喂母猪

① Feed the sow with water and wet mix



4月

黔东南苗族侗族自治州

上午9:10

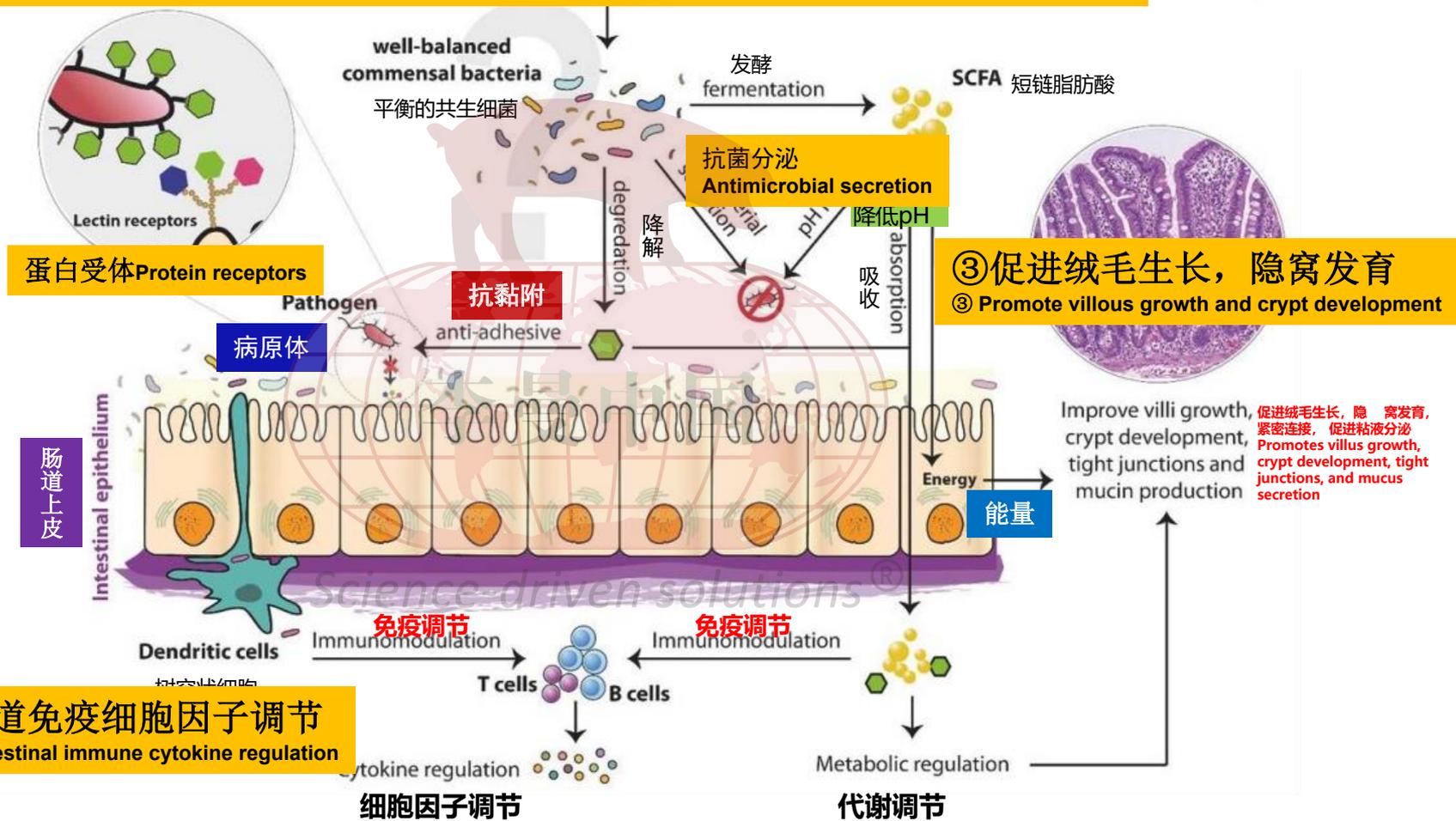
周日	周一	周二	周三	周四	周五	周六
18	19	20	21	22	23	24

②发酵水的应用

② Application of fermentation water

- 酵母细胞 yeast cell
- 乳酸菌 lactobacillus
- 芽孢杆菌 bacillus

①改善肠道共生菌群平衡 ① Improve intestinal symbiotic balance



微生态制剂新发展

New development of microecological agents



★ - 含水解啤酒酵母菌细胞: **Cellular hydrolytic brewers yeast:**

① 酵母细胞在**有丝分裂前期**被终止: 保持高营养和生物活性。

① Yeast cells are terminated in the prophase of mitosis: maintain high nutrition and biological activity.

② 细胞壁被“完全”水解: 释放**选择性甘露聚糖**、葡聚糖复合物“配体

② Cell walls are "completely" hydrolyzed: release of selective mannans and glucan complexes as "ligands" 识别”物质, 刺激和增强肠道免疫细胞功能。

Identify "substances" that stimulate and enhance the function of intestinal immune cells.

★ - 含发酵活性代谢产物:

- **Contains fermentation active metabolites:**

- ① 为肠道共生菌群提供营养底物, 促进肠道微生物区系的稳定和平衡。

- ① Provide nutrient substrate for intestinal symbiotic flora and promote the stability and balance of intestinal microbiota.

- ② 阻止有害微生物在肠道的增殖。

- ② Prevent harmful microbes from proliferating in the gut.

- ③ 阻断其黏附于肠道绒毛表面的定植, 养分分解吸收, 促进绒毛生长, 隐窝发育。®

- ③ Block the colonization of intestinal villi surface adhesion, nutrient decomposition and absorption, promote villus growth, crypt development.

★ - **水溶剂:** 有效成分被标准化, 兑水使用方便。

-Water solvent: the active ingredient is standardized and easy to use with water.

每头哺乳母猪科维多
5ml/天，然后加水
Administer 5ml of
Keweiduo per sow
daily, followed by
water

哺乳母猪
Lactating sow



怀孕母猪
Pregnant sow



每头怀孕母猪科维多
2-3ml/天，然后
加水Administer 2-
3ml of Keweiduo
per pregnant sow
daily, followed by
water.



怀孕、哺乳母猪液态饲喂，料槽中加入发酵水液2升/头，然后下料，每周2-3次，可大幅度减少便秘、血痢、胀气、消化道溃疡。
Pregnant and lactating sows are fed liquid feed. 2 liters of fermented water is added to the trough for each head, and then the feed is fed 2-3 times a week, which can greatly reduce constipation, bloody dysentery, gas and digestive tract ulcer.

干料、+发酵液、水解酵母+发酵代谢产物饲喂效果比较

Comparison of feeding effects of dry feed, hydrolyzed yeast, and fermented metabolites

47553头母猪（三个片区），8个月（2月份-9月份经历冬春夏）比对数据

Comparative data of 47,553 sows (across three zones) aged 8 months (covering winter, spring, summer, and autumn seasons from February to September)

饲喂模式 \ 消化道影响	胃溃疡淘汰率 (血便、呕吐、 苍白消瘦)	便秘发生率 (不同程度)	血痢发生率 (低胎龄较多)	胀气死亡率	产房采食量 (夏季)	效果总结
干料（粉料 或颗粒料）	7.47%	10.37%	3.59%	2.26%	4.93公斤	肠道问题多
水料+发酵液	3.82%	1.73%	1.89%	1.07%	5.66公斤	效果很明显 但费时费工 品质受季节影 响
水解酵母+ 发酵代谢产物 (水溶液)	3.96%	2.16%	1.77%	0.63%	5.75公斤	效果好 使用方便 品质稳定

断奶仔猪过渡管理

Weaning piglet transition management

大料盆 Large trough



粥料饲喂 Feed with porridge like feed

2020-12-02 星期三 云冈

断奶仔猪和保育猪：干料+科维多水液（1:3）粥料饲喂，每天6次，促进上料，
Weaning piglets and nursing pigs: Feed with dry feed and Keweiduo liquid (1:3) porridge six times daily to promote feeding.
减少饲料过渡应激和腹泻，不掉膘。Reduce feed transition stress and diarrhea, do not lose weight.

保育猪转群饲喂管理

Management of pig transfer and feeding in nursery

粥料槽

添加含有发酵代谢物的粥料，
仔猪上料快，采食量显著增加。

Add porridge with fermented metabolites,
The piglets fed quickly and their feed intake increased significantly.

干料槽

断奶三天

断奶后恢复快，日增重提高，
腹泻死淘大幅降低。

Fast recovery after weaning, increased daily weight gain,
The number of dead pigs with diarrhea was greatly reduced.

第三

PED、RV、GETV防控

Prevention and control of PED, RV, and GETV

- 生物安全
- Biological safety
- 疫苗免疫
- Vaccine immunity
- 饲养管理
- Feeding and management
- 后备猪驯化
- Gilt domestication
- 发病后干预
- Intervention for pigs after onset of illness

猪场PED检测流程 PED testing process for swine farms



- ① 肛拭子采样PCR，评估毒株、毒价和感染状况。
① Collect anal swab samples for PCR to evaluate the strain, viral load, and infection status.
- ② 腹泻仔猪小肠采样PCR和测序。
② PCR and sequencing of small intestinal samples from diarrheic piglets.
- ③ 血液、乳汁采样，监测IgG, IgA，与稳定阶段比对。
③ Collect blood and breast milk samples to monitor IgG and IgA levels, then compare them with the baseline values.
- ④ 环境采样(产房和妊娠舍)，检出率与稳定阶段比对。
④ Environmental sampling (from delivery rooms and gestation barns) with detection rates compared to the stable phase.



评估标准 Evaluation Criteria

- ① 在生产稳定阶段建立基准线(Ct值和阳性率)。
① Establish baseline metrics (Ct value and positive rate) during the production stabilization phase.
- ② 超出基准线+10%，预防方案控制。
② Exceed the baseline by +10% and implement preventive measures.
- ③ 超出基准线+25%，紧急方案控制。
③ Exceed the baseline by +25%, emergency plan control.



酸化剂在粪口传播腹泻病毒防控中的应用

Application of acidifying agents in prevention and control of fecal-oral transmission of diarrhea virus

(1) **预防方案（结合实验室监测）**：30-60头母猪肛拭子采样（3混1），PCR>基准线+10%阳性，仔猪无明显症状：每吨饲料添加酸化剂1公斤，全群母猪（或产前母猪）连用10-15天/每个月或每季度。

(1) Preventive protocol (laboratory monitoring integrated): Collect anal swabs from 30-60 sows using the 3-in-1 sampling method. Positive results require PCR values exceeding baseline by 10% with no clinical symptoms in piglets. Add 1 kg of acidifier per ton of feed to all sows (including pre-weaning sows) for 10-15 days monthly or quarterly.

(2) **紧急方案**：①PCR>基准线+25%的母猪肛拭子阳性，母猪血液、乳汁和唾液IgA均检出阳性，②产房仔猪>25%小肠PCR阳性，并已经出现零星发病。每吨饲料添加2-3公斤，全群母猪连用15-20天。

(2) Emergency Protocol: ① Sows showing anal swab positivity exceeding baseline +25% with detectable IgA antibodies in blood, milk, and saliva; ② Piglets in farrowing crates with over 25% intestinal PCR positivity showing sporadic clinical symptoms. Administer 2-3 kg per ton of feed to the entire sow herd for 15-20 consecutive days.

(3) **后备猪驯化方案**：后备猪PED活体驯化后，每吨饲料添加2公斤，进群前连用15天，排毒量大幅减少（通过肛拭子监测）。

(3) Weaning Pig Domestication Protocol: After live PED (Porcine Epidemic Disease) domestication, administer 2 kg per ton of feed for 15 consecutive days prior to herd integration, resulting in a significant reduction in excretion levels (measured via rectal swab).

只要PRRS相对稳定，这套防控模式在生产中非常行之有效

As long as PRRS remains relatively stable, this prevention and control model proves highly effective in production.

酸化剂控制PED\RV\GETV

Acidifiers control PED\RV\GETV

- 高效有机酸（富马酸,乳酸,柠檬酸,苹果酸等有机酸）。
- High efficiency organic acids (fumaric acid, lactic acid, citric acid, malic acid and other organic acids).
- 胶囊包被, 能安全过胃, 不损伤上消化道。
- The capsule coating can pass safely through the stomach without damaging the upper digestive tract.
- 在肠道中逐步释放, 降低肠道PH值。
- It is gradually released in the intestine to reduce the intestinal PH value.



微胶囊包被酸化剂

Acid preparation coated with microcapsules



产前母猪饲喂酸化剂

Sows were fed acid preparations before delivery



每星期定位栏消毒

Disinfect the stalls weekly

08:46

2022-05-17
星期二 多云 17°C

今日水印
相机





四，强化后备猪饲养和进群管理

Fourth, strengthen the breeding and herd management of gilt

Science-driven solutions®

后备猪配套和管理

Gilt matching and management

(1) 种源：来自专业化种业公司，或父母代后备猪代培。

(1) Breeding stock: sourced from specialized breed companies or parent-offspring replacement breeding.

(2) 猪场内闭环扩繁：通过精液配送选配选留，杜绝频繁引种造成的不利影响。

(2) Closed-loop breeding in pig farms: Through semen distribution, selection and retention, the adverse effects caused by frequent introduction are eliminated.

(3) 猪场内配套 >90天的独立后备栏舍和设施。

(3) The pig farm is equipped with independent gilt pens and facilities for more than 90 days.

(4) 后备猪的饲养管理交给团队中最好的主管和饲养员。

(4) The feeding and management of the gilts are entrusted to the best supervisors and feeders in the team.

- 密度合理 Density is reasonable
- 光照,通风 Light, ventilation
- 自由采食 Ad libitum
- 杜绝霉变饲料 Prevent moldy feed

后备母猪培育过程的四项评估目标

Four evaluation objectives for the breeding process of replacement sows

(1) 饲养环境: 通风、密度和光照等, $>1.4\text{m}^2/\text{头}$, 光照时间与强度对于后备猪进入初情期也非常重要。每天最少16个小时、强度至少270lux的间断照射, 6月龄后备母猪需要用人工光源补偿日照的不足。

(1) Breeding Environment: Key factors include ventilation, stocking density, and lighting. The minimum space requirement is 1.4m^2 per sow, with lighting duration and intensity crucial for sows entering puberty. Sows require at least 16 hours of uninterrupted light exposure daily at 270lux. For 6-month-old sows, artificial lighting should compensate for insufficient natural light.

(2) 饲料营养和饲喂模式: (2) Feed nutrition and feeding mode:

- 营养标准、配方, 饲料品控, 各阶段料耗量跟踪和统计。

- Nutritional standards, feed formulation, feed quality control, and tracking and statistics of feed consumption at each stage.

- 日龄与体重关系的评估 (60日龄、4月龄、6月龄和配种前), 后备猪配种时最佳的背膘(P2)厚度应在16~18mm之间, 保证分娩时背膘厚度能达到18~20mm。

- Assessment of age-weight relationship (60 days, 4 months, 6 months, and pre-sbreeding): The optimal backfat (P2) thickness for sows should be 16-18 mm, ensuring 18-20 mm at farrowing.

(3) 繁殖性能评估: 6-7月龄初情期比例, 发情和静立状态, 180-210日龄的初情期比例 $>80\%$, 初次发情时体重控制在120公斤之内。

(3) Reproductive performance evaluation: Proportion of first estrus at 6-7 months of age, estrus and standing still status. The proportion of first estrus at 180-210 days of age should be $>80\%$, and the body weight at first estrus should be controlled within 120 kg.

(4) 健康评估: 外观评估, 选留率, 育成率, 实验室监测指标。

(4) Health assessment: appearance evaluation, retention rate, breeding rate, and laboratory monitoring indicators.

亚健康后备猪育成率 $<75\%$

The growth rate of sub-health pigs was less than 75%



亚健康后备母猪平均初情期197.6天

The average age of first puberty of subhealthy replacement sows was 197.6 days



后备猪培育质量和成本差异巨大

There is a huge difference in the quality and cost of breeding gilts



健康后备母猪平均初情期182.3天

The average age of first puberty of healthy gilt was 182.3 days



健康后备猪育成率 $>85\%$

The breeding rate of healthy gilts is $>85\%$



5.5月龄起：多分子信息素诱情
Starting from 5 and a half months of age: multi molecule pheromone induced arousal



6月龄后：公猪+信息素诱情
After 6 months of age: boar + pheromone to attract females



- 雄烯酮
- Androstenedione
- 雄烯醇
- Xiongenol
- 喹啉
- Quinine

后备猪初情期管理：公猪+“信息素”诱情
Breeding Management for Sows: Boar + Pheromone for Sexual Stimulation

一胎断奶母猪查诱情工作极为重要

It is very important to check the mating behavior of weaned sows

每5-6头母猪为一个小单元

Each small unit consists of 5-6 sows

公猪+信息素诱情

Boar + pheromone attraction



福建生猪产业近五年走不同的道路，跨越式的质变，超出了很多人的想象。

The pig industry in Fujian has taken different paths in the past five years, with a leapfrog qualitative change that exceeds the imagination of many people.

不仅是思想革命的一股清流，而且给了养猪业未来发展方向殊多的启示和思考，彻底在体系上打翻身仗。

Not only is it a clear stream of ideological revolution, but it has also provided many inspirations and reflections on the future development direction of the pig farming industry, completely turning the tide in the system.



感谢大家的聆听!
Thank you for
listening!

Science-driven solutions