

# Emergency Treatment Plans and Effect Appraisal of PED Under the Mode of 4-week Batch

---

Reported by: **Chen Laiyun**

*Science-driven solutions®*

# The background of PED treatment case in a pig farm –

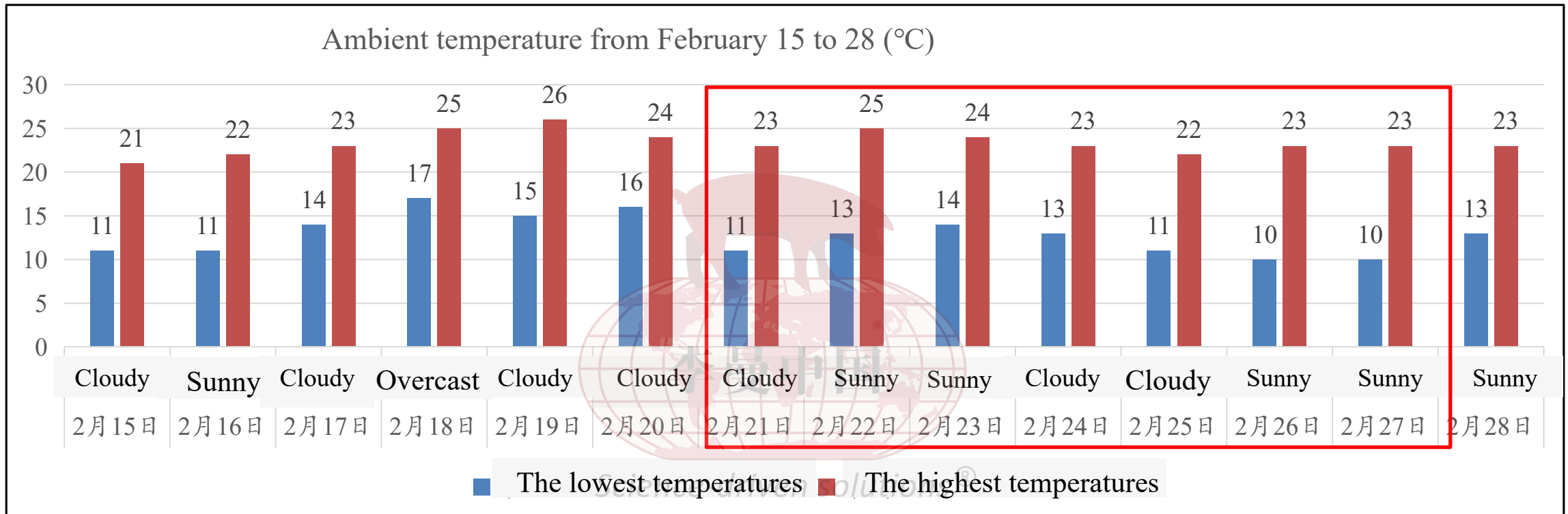
## 01. A brief introduction to the pig farm

- **The scale of this pig farm:**
- **The specific site of the first occurrence of PED:** Unit3-3 in mating and gestation house
- **The time of the first detection of suspected PED case:** February 24, 2023
- **The time of confirmed diagnosis of PED:** February 25, 2023
- Introduction to other background:
  1. **The farrowing date of the sow which had the longest pregnancy on the scene was:** February 26-28. Besides, the sow only had 1 day before farrowing, and the due date was February 25, 2023;
  2. The PED immunization programs before the onset of PED was 1 dose of live PED vaccine 4 weeks before delivery (the immunity procedure has gone through the application process)

Science-driven solutions®

# The background of PED treatment case in a pig farm –

## 02. The background of external temperature factors during the PED



➤ The temperature difference between day and night was more than 10 degrees.

# Procedures of emergency treatment plans of PED under the mode of 4-week a batch

Procedures of emergency treatment plans of PED under the mode of 4-week a batch (Take a pig farm for example )

## 1. Diagnosis of PED

1. Initial diagnosis of clinical symptoms
2. Pathological anatomy
3. Laboratory-confirmed diagnosis

## 3. Implementation of PED treatment plans

1. Treatment process of mating and gestation house
2. Treatment process of farrowing house

## 2. Preparation of PED treatment

1. Holding an emergency meeting
2. Determining the treatment plans
3. Determining materials and division of labor

## 4. Results tracking of PED treatment

1. Control test of PED antibody
2. Effect verification of PED treatment

Science-driven solutions®

李曼中国

Emergency Treatment Plans and Effect  
Appraisal of PED Under the Mode of  
4-week Batch

# Step I: diagnosis of PED

1. Initial diagnosis of  
clinical symptoms

2. Pathological  
anatomy

3. Laboratory-confirmed  
diagnosis

Science-driven solutions®

# Step I: diagnosis of PED

Early detection, early reporting, early control

## - 01. Initial diagnosis of clinical symptoms

If the keeper/technician finds the following clinical symptoms of suspected PED cases during the inspection, he/she should immediately observe and record them carefully, and report them to the head of the sub-farm, head of the farm, and company's veterinarian in time; After checking the initial diagnosis on the spot, the veterinarian should immediately report to

**【Members of the veterinary disease control team: deputy general manager and general manager of the company, veterinary technology department】。**

## Common clinical symptoms of PED :

### ■ Finishing pigs/nursery pigs/sows:

1. Watery diarrhea can be found, with cement-like or yellow pig slurry, and the watery stools are in the form of spray;
2. Nursery pigs lose weight, with stools on their body surfaces, and they huddle together for warmth;
3. Sows in the delivery room often show mastatrophy, insufficient milk and decreased feed intake;

### ■ Piglets:

1. Severe watery or mushy defecation can be found, with loose stools on their body surfaces, and the pig slurry is yellow, brown, white, etc.;
2. Having a fear of cold after dehydration and huddling together for warmth;
3. Some piglets vomit, with increased body temperature, and most of them die quickly;
4. Suffering from depression, with dull eyes and inelastic skin, growing slowly and getting thinner;



Watery diarrhea



Huddling together for warmth



Pigs vomit or become lethargic

# Step I: diagnosis of PED

Early detection, early reporting, early control

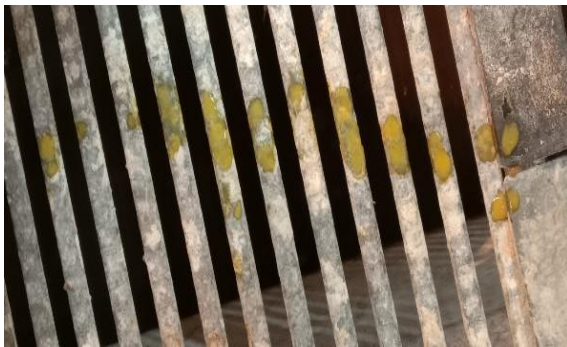
## - 01. Initial diagnosis of clinical symptoms

On the afternoon of February 24, 2023, an employee of the mating and gestation house in the pig farm found the following suspected PED clinical symptoms during the daily patrol and immediately reported to the head of the sub-farm:

**Suspected symptoms:** A large number of watery defecation were found on the ground, and the pig slurry were **large plate-like** on the thermal pad and **could flow**;

Some of the loose stool was in the form of spray on the leaky plate in the shape of strips or beads;

The stool was yellowish-green or gray, and often contained undigested curds and powdered feces;



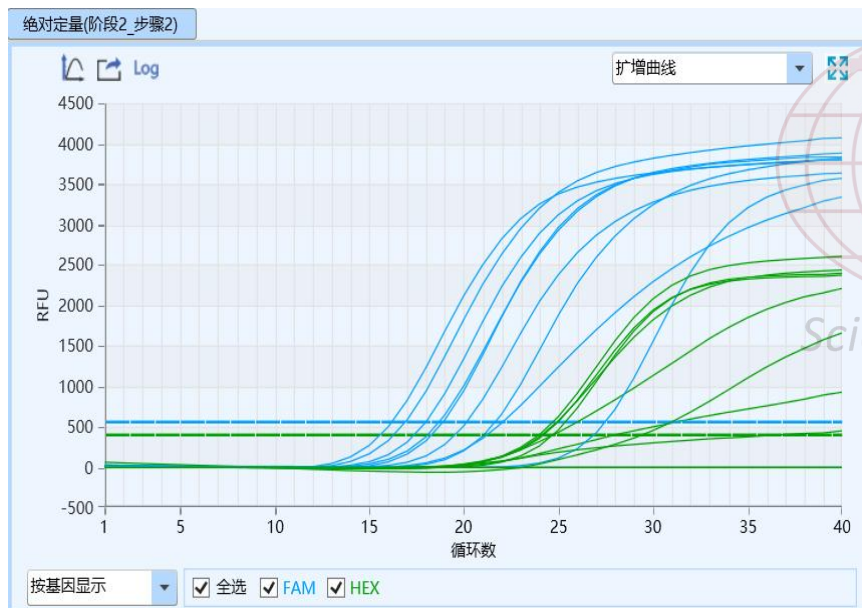
Science-driven s



## Step I: diagnosis of PED - 02. Laboratory-confirmed diagnosis

Laboratory diagnostic methods include **colloidal gold strip rapid detection, RT-qPCR detection** and so on.

Laboratory diagnostic results of a pig farm:

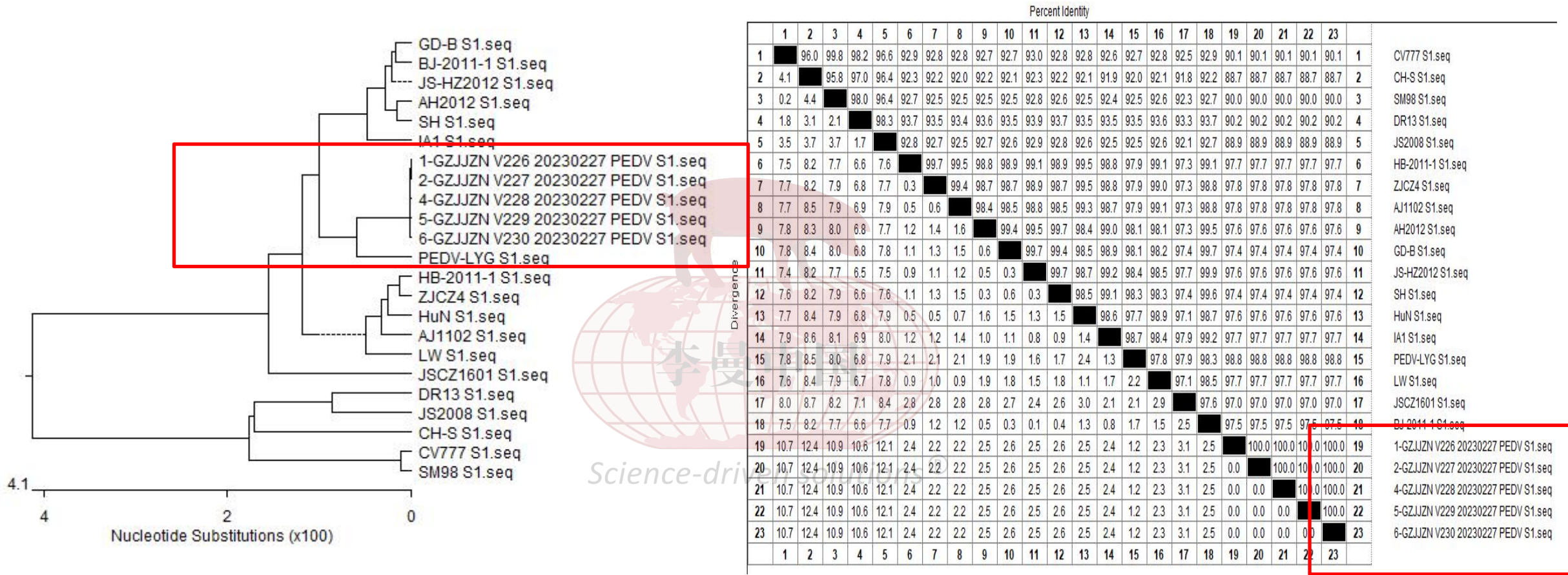


Picture of the increasing PCR

Position of holes	FAM	HEX	Result	Note
	PEDV	Interior standard		
A2	18.691	24.168	positive	
B2	18.902	24.707	positive	
C2	27.488	24.723	positive	
D2	17.988	29.363	positive	
E2	16.910	23.949	positive	
F2	16.184	24.207	positive	
G2	22.035	0.000	Sample was suppressed	Without internal standard, PCR amplification was inhibited. However, the PEDV amplification curve was normal and the viral load was very high.
H2	21.668	27.941	positive	
A4	20.137	36.254	Sample was suppressed	Internal standard Ct > 35 showed inhibition by PCR. However, the PEDV amplification curve was normal and the viral load was very high.
G6-positive control	27.809	24.410	阳性	



# Step I: diagnosis of PED - 03. Laboratory-confirmed diagnosis



The test result of the pig farm :

**Diagnosis of positive PED was confirmed, and sequencing results of PED were 2a subtype**

**Emergency Treatment Plans  
and Effect Appraisal of PED  
Under the Mode of 4-week  
Batch**



**Step II: Preparation of PED  
treatment**

**1. Holding an emergency  
meeting**

**2. . Determining the  
treatment plans**

**3. . Determining materials  
and division of labor**

## StepII: Preparation of PED treatment - 01. Holding an emergency meeting

After the laboratory confirmed positive PED, the subsidiary veterinarian immediately set up the **Enterprise WeChat communication group**, and organized the “emergency meeting of PED treatment” as soon as possible to jointly discuss the best plan for PED treatment.

**Theme of the meeting:** emergency meeting of PED treatment

**Necessary participants:**

- **Our company:** General Manager, Deputy General Manager, head of the farm, head of the sub-farm, Veterinary Manager/Deputy manager/supervisor, Laboratory Director, head of general Management Department
- **Our department:** Veterinary Technology Department, Production technology Department
- Other participants who should attend

## StepII: Preparation of PED treatment - 02. Determining the treatment plans

Different backgrounds and conditions of pigs may lead to slightly different final plans of treatment, but the overall operation process is similar. Take a pig farm as an example:

Main resolution of the meeting :

### 1. Vaccine emergency immunization

- **Farms with confirmed PED:** intestinal homogenate of all "sows waiting to farrow" returned-feeding piglets;
  - **Other farms in the area:** all "sows waiting to farrow" in these facilities were given 4 weeks pre-natal live + inactivated vaccine and 2 weeks pre-natal inactivated vaccine ;
2. It is imperative to do a good job in biosafety cross-prevention work and detailed control in immunization and dead pig handling;
  3. **Staff from other farms** will be transferred from the farrowing room to support **the farms with confirmed PED**, and they will no longer work across units;
  4. After 5 days of age, carefully do piglet care work, and mix piglet dry powder, oral rehydration salt, and Gentamicin into porridge. 2 ml of Gentamicin per pig **( Later proved invalid )** ;
  5. Prepare piglet milk powder for use, mixed with warm water;
  6. Sows can receive a shot of Scillum (2% acemequine) if they have diarrhea;
  7. The transmission route of epidemic diarrhea should be traced;

### Classified measures:

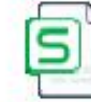
Types of pigs	Measures being taken
Mating and gestation	Enteric feedback of piglets
Farrowing	Independent management, biosecurity



Plans of PED feedback301.docx



Operation specification in farrowing houses during the PED diarrhea.xls



Record table of abnormal diarrhea of sowsV1.0.xls



Record table of diarrhea in farrowing housesV1.0.xlsx

## StepII: Preparation of PED treatment - 03. Determining materials and division of labor

The list of essential supplies in PED treatment			
Classification of supplies	Name of supplies	Quantity	Note
Isolated living supplies	Quilt	18	
	kettle	20	
	Tissue	200packs	
	Socket	20	Cell phone charging for isolated personnel in farrowing room
	Disposable food box	5000	
	Disposable chopsticks	5000	
Drying and disinfection supplies	Dried powder	50packs	
	Dry powder disinfectant	50packs	Equipped with dry powder disinfectant sprayer
	Quicklime	500kg	500kg
Piglet treatment supplies	Feedbag	4000	Dead pigs need to be handled with an inner membrane to prevent leakage
	Gentamicin	2000ml	Piglets over 10 days of age have diarrhea
	Oral rehydration salts	100kg	
	200 piglet feed	1ton	Piglet bed feeding, weaning weak pig care
Testing supplies	IDEXX IgA	100	
	PED antigen detection	500	

Note:

1, 200 piglets feed, dry powder disinfectant as a regular reserve materials, with monthly rotation;  
2. Materials can be increased or decreased according to the actual situation.

## StepII: Preparation of PED treatment - 03. Determining materials and division of labor

Division of staff in the feedback working group of PED treatment					
General commander:					
No.	Group	Work matters	Time	Group leader	Members
1	Group of preparing supplies	Preparation of materials such as disease material collection, production and feeding			
2	Group of pig health care	Health care of pigs before feeding			
3	Group of collecting disease material	Identification, collection and preservation of disease materials			
4	Group of producing disease material	The disease material is broken and homogenized			
5	Group of detecting disease material	No other pathogens, PEDV, PDcoV content and wheel shape were detected before and after collection and feeding			
6	Group of feedback disease material	Allocation of disease material, feeding operation			
7	Record of feedback effect	Abnormal observation records of pigs after feeding			
8	Environmental purification after feeding	The environment was disinfected 3 days after the second feeding			

- The field position and ear size of pigs with diarrhea were recorded daily before and after the first feeding. Pigs without diarrhea were fed for a second feeding after 2 days of feeding;
- After the second feeding, 3 days later, the pregnant sows were washed and sterilized (Weike 1:100) to keep the house environment clean and tidy. At the same time, use chlorine disinfectant to disinfect utensils, pig farm roads and items that have come into contact with pig manure, such as shovels, buckets, and bags containing pig manure;
- 7 days after the second feeding, the whole group was injected with an inactivated vaccine (inactivated vaccine with high tissue or antigen content), and 7 days later, the heavy fetal pigs two weeks before the birth were immunized with a PED inactivated vaccine, which lasted until the end of March (mid-April at the latest).
- This batch of weaning sows were fed with intestinal tubes (previously retained disease material) 7 days after breeding (14 days after weaning, April 7).

**Procedures of emergency  
treatment plans of PED  
under the mode of 4-week  
batch**

**Step III: Implementation of PED  
treatment plans**

1. Treatment process of  
mating and gestation house

2. Treatment process of  
farrowing house

3. Treatment process of nursery  
and finishing house

*Science-driven solutions®*

# Step III: Implementation of PED treatment plans

## - 01. Treatment process of mating and gestation house

### Measures being taken in controlling PED – prerequisite of PED feeding and material preparation

- Prerequisite :
- 1. Ensure that there is no African swine fever infection, no wild virus infection of pseudorabies, negative to PRRS or CT value cannot be lower than 35
- 2. The disease material (intestinal) should not be used for more than 24 hours after diarrhea, preferably between 24-36 hours after onset;
- 3. The content of PED antigen was detected in the diluted samples, and the CT value was about 25.
- **Facilities and commonly used drugs**
- 1. Fresh milk or saline (refrigerated); Anatomical instruments: scalpel, scissors
- 2. Dry and clean plastic bucket (black garbage bag to avoid light), ziplock bag, glass rod, 10g spoon
- 3. Disinfectant: chlorine preparation, caustic soda, lime
- 4. Homogenizer, ice pack
- 5. Drugs: After dilution, add 10ml Qingda and 1g cephalosporin (or 1g amoxicillin) per liter of disease feed, 5g/ head of sow feeding Ligor per day, add for 5 days, start to add 2 days before feeding



# Step III: Implementation of PED treatment plans

## - 01. Treatment process of mating and gestation house

### Infection period and object

1. After the whole group was infected at one time (except in the farrowing house, after weaning, they were herded into the mating and gestation house for re-feeding), the amount of re-feeding was 1:1 diluted with pre-cooled normal saline, 10g/ head; Repeat the process the next day (the second feed must be prepared on the same day) .
2. The pigs in the 750 Zudai farm were fed 20% flufenicol 800g/ ton + chlortetracycline 1kg/ ton before re- feeding, supplemented with medicine in drinking water for 5 days, starting from 2 days before re-feeding; Feed for half a day before return, after 5g/ head evenly 10 kg of mix, spread a thin layer to the pen ;
3. The disease material should be accurately measured, and the container of the disease material should be protected from light. Black containers are best.
4. The field position and ear size of pigs with diarrhea were recorded daily before and after the first feeding, and the pigs without diarrhea were fed for a second feeding after 2 days.
5. After the second feeding, 3 days later, the pregnant sows were washed and sterilized ( Weike 1:100) to keep the house environment clean and tidy. At the same time, use chlorine disinfectant to disinfect utensils, pig farm roads and items that have come into contact with pig manure, such as shovels, buckets, and bags containing pig manure.
6. 7 days after the second feeding, the whole group was injected with an inactivated vaccine (inactivated vaccine with high tissue or antigen content), and 7 days later, the heavy fetal pigs two weeks before the birth were immunized with a PED inactivated vaccine, which lasted until the end of March (mid-April at the latest).

# Step III: Implementation of PED treatment plans

## - 01. Treatment process of mating and gestation house

### Measures being taken in controlling PED - Records of abnormal feedback of sows

The table of records of abnormal feedback of sows

Date	Sub-farm	Unit	The number of previous pigs with diarrhea	Eat nothing	Diarrhea	Breeding stock	Rate of abnormality	Record of abortion	Recorded by
March 17	No.1 breeding sub-farm	1-1				240	0.00%		
March 17	No.1 breeding sub-farm	1-2		5	2	300	2.33%		
Summarizing				162	216	540	80.00%		

The table of records of abnormal feedback of sows

Date	Unit	The number of previous pigs with diarrhea	Eat nothing	Diarrhea	Breeding stock	Rate of abnormality	Record of abortion	Recorded by
March 17	2-1		6	6	393	3.05%		
	2-2		16	6	391	5.63%		
	2-3				619	0.00%		
	3-1		1		390	0.26%		
	3-2		5	4	391	2.30%		
	3-3		74	13	442	19.68%		
Summarizing			1057	472	2568	59.54%		

The table of records of abnormal feedback of sows

Date	Sub-farm	Unit	The number of previous pigs with diarrhea	Eat nothing	Diarrhea	Breeding stock	Rate of abnormality	Record of abortion	Recorded by
March 17	No.3 breeding sub-farm	4-1				618	0.00%		
March 17	No.3 breeding sub-farm	4-2		1	7	396	1.77%		
March 17	No.3 breeding sub-farm	4-3				395	0.00%		
March 17	No.3 breeding sub-farm	5-1				506	0.00%		
March 17	No.3 breeding sub-farm	5-2		11	38	390	9.74%		
March 17	No.3 breeding sub-farm	5-3			3	390	0.77%		
Summarizing				610	816	2695	52.91%		

# Step III: Implementation of PED treatment plans

## - 01. Treatment process of mating and gestation house

### Measures being taken in controlling PED – Selection of disease materials of PED feedback

#### Selection and treatment of disease materials:

1. Piglets with diarrhea should be carefully cut open the abdominal skin with a scalpel. Do not cut the intestine, and take out the entire intestine.



2. After opening the abdomen, the whole front end of the small intestine was knotted; after that, the entire intestinal tube and the contents of the small intestine were put into a ziplock bag, one ziplock bag for every five intestinal pieces. The ziplock bag should be kept away from light during the process. The ziplock bag should be put into a light-resistant plastic bucket with an ice pack.
3. Keep intestine in cold storage. Chop with a kitchen knife before homogenizing, and homogenize with a homogenizer.

## Step 3: PED disposal program implementation - 02. Delivery house disposal process

### Farrowing room management

Prevention and control principle	Farrowing bed as protection unit, prevent cross of different delivery beds, reduce viral load and piglets infection	
Prevention and control thinking	Operation content	Operation details
1. Temperature control	Temperature	Turn on the heat preservation lamp in advance before delivering; increase the temperature of the farrowing room by 2 degrees and the mating room by 1-2 degrees, and keep the sliding curtain plate closed before piglets aging 7 days, and only small Windows were ventilated;
2. Feces cleaning	Farrowing sows	No excrement within 7 days
	Suckling piglets	Stop all operations on piglets in the farrowing room with no cage adjustment, no foster, and no excrement within 7 days, the time of tail docking and iron supplementation is tentatively set at day 7, and this batch does not use coccidium drugs; Cover diarrhea feces and vomit with dry powder timely.
3. Farrowing sows	Outside breeding bed	No visible feces on the pig, and take the pig to disinfect (Weike 1:200)
	On breeding bed	Re-disinfect all sows on delivery bed (Weike 1:200)
	Before farrowing	Disinfect sows once a day after pregnancy (Weike 1:200)
	After farrowing	Spray dry powder disinfectant on sows once at the beginning of birth, once after birth, and then once a week. Breeder and technician operate with unit: reduce all unnecessary movements and eliminate the crossing between different delivery beds;
4. Personnel management	Fixed Staff	Within pig age 7dpi, the delivery room is isolated in the unit, and after 7 days, every two units of the delivery room is managed by one fixed staff.
	Shoe disinfection	After 7 days, the entry and exit units are pedaled with 3% caustic soda foot basin daily to wash the rain shoes used in the unit, especially the soles, and wash the rain shoes with caustic soda water
	tool management	No excrement within 7 days
	Daily operation	Stop all operations of the piglets, and consider iron supplementation for health care and immunization five days later; Hand contact with the delivery bed with a pair of gloves each litter, and then get hand disinfected and take off gloves inside into a garbage bag; Feet in contact with the delivery bed must wear shoe covers, which is thrown after each litter, and get off the delivery bed with one foot off at a time, and foot disinfection is required;
5. Diarrhea pig field	Piglet treatment	Spray disinfect the diarrhea pig field, then cover it with dry powder; According to the position of the diarrhea field and the situation of diarrhea piglets, report to the supervisor, decide whether to kill the piglets or the whole litter, treatment process undertaken with spray disinfection, hands washed and feet disinfection, gloves and shoe covers should be changed each litter;
6. Disposal of dead pigs	Disposal of dead pigs	Disposal of dead pigs should begin with the healthy litters, and then the diarrhea litters. One glove per litter for the hand contact, and one shoe cover per litter for the foot contact are necessary. Aisles should be disinfected after disposal of dead pigs.
7. Daily management	Keepers and technicians should control all movements in the delivery room that may cause crossing infection, request instructions from supervisors and branch captains before each new movement, correct operational errors, bad habits that are not conducive to disease prevention and control on the spot in time, and summarize feeding management methods.	

## Step 3: PED disposal program implementation - 02. Delivery house disposal process

### PED control measures - delivery room treatment and precautions

- **Management of delivery room before and after infection**
- Raise the temperature of the delivery room by 1-2 degrees (maximum temperature  $\leq 26^{\circ}\text{C}$ , after which the sow will reduce the feed, and the milk quality will decline), prepare the balancing solution, and if necessary, rehydrate the diarrhea solution or irrigation, combined with antibiotic irrigation (Qingda), Mistoto or dry powder disinfectant to keep the delivery room dry.
- **Additional notes**
- 1. Prepare diluents, containers and tools in advance to prevent ultraviolet radiation and direct sunlight during the production and use of disease materials.
- 2. The second feeding in the interval of 2 days (the disease material used each time should be prepared on the same day).
- 3. The farrowing room and nursery room are kept warm and dry. (Add a thermal lamp and place lime around).
- 4. Add trichloride disinfectant in deodorization room.
- 5. If sows did not eat for 2 consecutive days after refeeding, individual treatment was performed: 2 Houttuynia + 3 to 4 penicillin; At the same time, strengthen the symptomatic treatment such as Qingda, enrofloxacin.

# PED control measures - operational improvement

past		now	
Original practice	Original results	Improvable practices	Ideal results
Gilts were immunized with one dose of live vaccine and one dose of inactivated vaccine	Rapid onset	Gilt immunization: PED inactivated +PED live vaccine for 125 dpi, enhanced PED inactivated vaccine for 160 dpi	The herds have good immunity
The fetus is immune to only one shot of live vaccine	Unable to fend off the virus	Immunization with PED inactivated +PED live vaccine 4 weeks before delivery, and enhanced immunization with PED inactivated vaccine 2 weeks before delivery	Sows and piglets gain more antibodies and do not develop disease
PED antigen was not detected in gilts admitted to the herd	Allowing gilts with virus into the PS branch	Collect 30 stool and anal swabs for PED antigen detection	Prevent gilts carrying virus into the herd
Herds were not tested for PED antibodies	No knowledge of herd immunity	Test for IgA	Master the immune protection of herds
Monitor PED antigen regularly	PED was discovered relatively late	Establish a systematic early warning mechanism	Able to detect PED in the bud stage, and reduce losses
Field personnel are inexperienced	Treating PED as a common diarrhea, the epidemic was found late	Train field personnel	Personnel increased their sensitivity and quick-response

# PED control measures - **strengthen pathogen surveillance**

	采样时间	采样方法	采样份数	采样频次	备注
PED抗原	人员	纱布与棉签	进场前	每次	
	车辆	纱布	拉猪前	每次	
	物资	纱布	进场时	每次	
	每批后备猪入母猪群前7天检测	棉签采样	每个栏1份	每批	
	怀孕100-108天母猪	棉签采样	每次采40头猪粪便/肛门拭子, 每批猪采10-15头头	2周一次	
	脐带血	棉签采样	每窝1份, 每单元10份, 一次送3单元	2周一次	合样, 同类同舍可3合1
	产房仔猪	棉签采样	有症状的每窝一份	阳性场, 周/次	
	保育、育肥、公猪、后备、基础母猪	棉签采样	有症状的1份/栏	阳性场, 周/次	
	引种前后备猪前7天检测	棉签采样	每个栏1份	每批	

- **Peripheral PEDV screening to reduce the introduction of virus by personnel, vehicles and materials**
- **On-site seed introduction and production conversion detection to reduce virus cross infection**
- **Prenatal testing to strengthen immunity to positive pregnant sows**
- **When diarrhea occurs, take differential diagnosis and response at first time**

Procedures of emergency  
treatment plans of PED under the  
mode of 4-week batch



## Step 4: Tracking PED disposal results

1. PED Antibody  
control test

2. PED disposal effect  
verification

*Science-driven solutions*®



## Step 4: Tracking PED disposal results - 01. PED antibody control test

### PED Antibody control test

#### - March 19 (before and after feeding)

March 5th CF1 L03135	3.002	Positive
CF1 L03678	3.777	Positive
CF1 L03372	4.599	Positive
CF1 L03788	3.479	Positive
CF1 L03093	2.196	Positive
CF1 L03793	3.888	Positive
March 5th Cf3 pregnant 23 batch 5-1A5 24848 4 litters	3.123	Positive
March 5th Cf3 pregnant 23 batch 5-1A7 M1257 1 litters	0.097	Negative
March 5th Cf3 pregnant 23 batch 5-2B64 M2540 0 litters	0.071	Negative
March 5th Cf3 pregnant 24 batch 4-1E5 M0005 2 litters	0.379	Negative
March 5th Cf3 pregnant 24 batch 4-1E6 005442 4 litters	3.557	Positive
March 5th Cf3 pregnant 24 batch 4-1D56 M2744 0 litters	0.228	Negative
March 5th Cf3 pregnant 25 batch 4-2E10 21786 4 litters	4.140	Positive
March 5th Cf3 pregnant 25 batch 4-2E11 M0449 2 litters	1.493	Positive
March 5th Cf3 pregnant 25 batch 4-2A38 M3153 0 litters	0.227	Negative

March 19th CF1:L03793	4.052	Positive
CF1 L03788	3.954	Positive
CF1: L03372	4.263	Positive
CF1 L03135	2.738	Positive
CF1: L03093	2.732	Positive
CF1: L03678	2.724	Positive
March 19th CF2: 23P M1067	4.007	Positive
CF2: 23P 25300	5.021	Positive
CF2: 23P M0983	1.073	Positive
CF2: 24P M1385	4.558	Positive
CF2: 24P 23248	4.868	Positive
CF2: 24P M0214	2.953	Positive
CF2: 25P M1696	3.206	Positive
CF2: 25P M0219	2.297	Positive
CF2: 25P 005435	4.818	Positive
CF2: Blank: 22319	4.947	Positive
CF2: Blank: M1049	5.208	Positive
CF2: Blank: M1239	4.858	Positive
CF2: Blank: 01668	3.761	Positive
CF2: Blank: 22207	5.085	Positive
CF2: Blank: M0813	1.024	Positive
CF2: Blank: 02111	4.863	Positive
CF2: Blank: 01942	4.802	Positive
CF2: Blank: 63015	5.123	Positive
CF3 pregnant: M0005	2.127	Positive
CF3 pregnant: 005442	4.232	Positive
CF3 pregnant: 24848	5.114	Positive
CF3 pregnant: M1257	3.662	Positive
CF3 pregnant: M2540	2.911	Positive
CF3 pregnant: M2744	2.695	Positive
CF3 pregnant: M3153	3.268	Positive
CF3 pregnant: 21786	4.394	Positive
CF3 pregnant: M0449	3.918	Positive

67% positive rate of IgA antibody, AVG 2.28;  
100% positive rate of IgA antibody, AVG 3.80

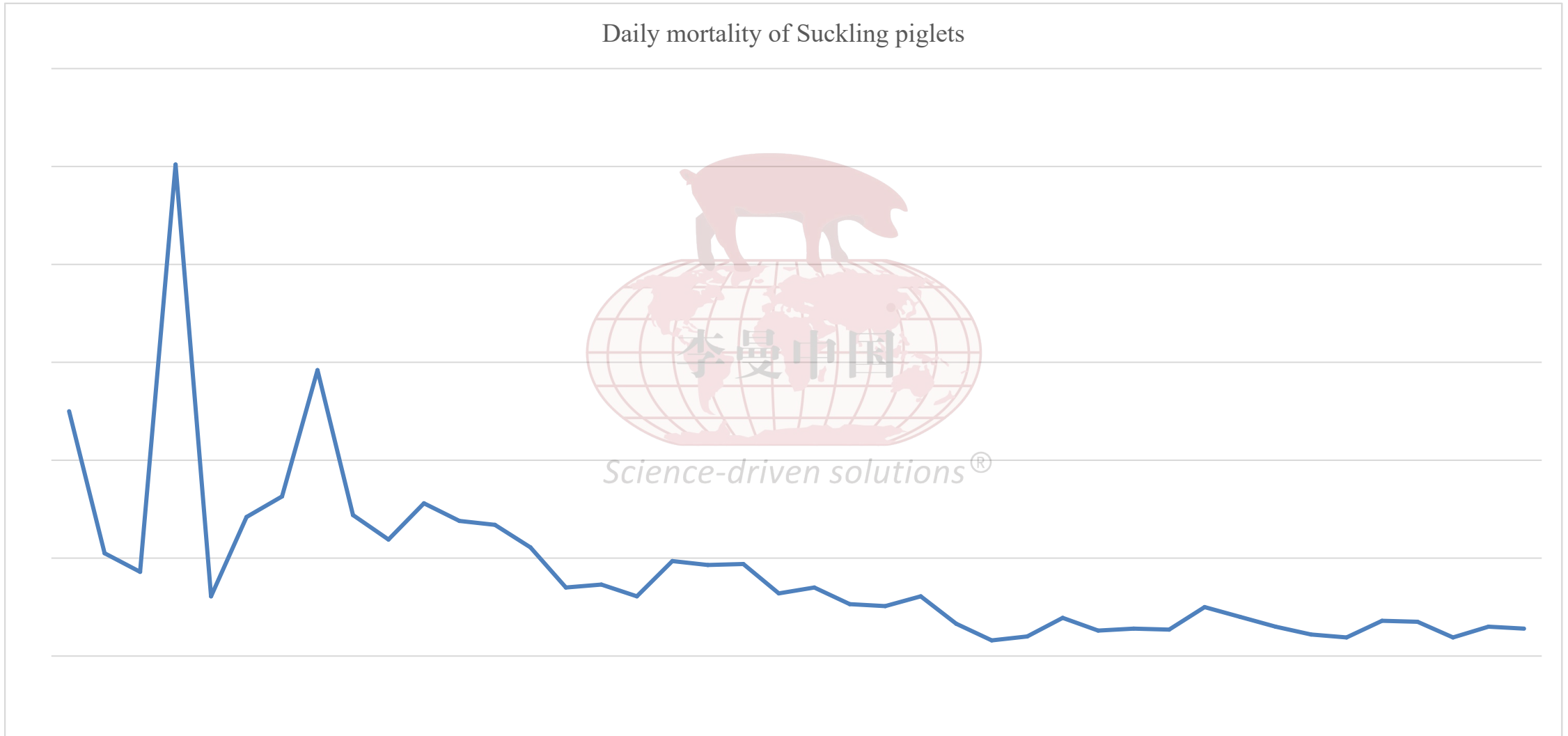
## Step 4: Tracking PED disposal results - 02. PED disposal effect verification

### Data comparison of 22 and 23 batches

Data during onset and next delivery																			
	batch	unit	litter number	TNB	Alive TNB	average offspring each litter	average live TNB each litter	average stillborns each litter	Average mummies each litter	Invalid litter rate	Litter size	Weaning pigs number	suckling piglets survival	Sow mortality	weaning Number per litter	Participation Number within 7d	Participation rate within 7d	weaning pigs Weight	Weaning age
Field area	22th batch (2.26-2.28)	Parvial field 01	106	1260	1146	11.89	10.81	0.97	0.10	9.0%	106	190	16.58%	4	1.79	78	73.58%	5.8	21.3
		Parvial field 2	538	6729	5983	12.51	11.12	1.05	0.21	11.1%	538	2580	43.12%	6	4.80	423	78.62%	5.7	20.9
		Parvial field 03	581	7124	6466	12.26	11.13	0.93	0.20	9.2%	581	3380	52.27%	3	5.82	424	72.98%	5.9	21
		Total field	1225	15113	13595	12.34	11.10	0.99	0.20	10.0%	1225	6150	45.24%	13	5.02	925	75.51%	5.81	20.97
	23th batch (3.28-3.31)	Parvial field 01	120	1691	1392	14.09	11.60	1.6	0.78	17.7%	120	1357	97.49%	1	11.31	92	76.67%	6.6	21.7
		Parvial field 2	601	7432	6775	12.37	11.27	0.89	0.19	8.8%	601	6491	95.81%	3	10.80	457	76.04%	7	21.5
		Parvial field 03	603	7315	6786	12.13	11.25	0.67	0.21	7.2%	603	6455	95.12%	5	10.70	417	69.15%	6.8	21.4
The survival rate of suckling piglets in 23rd batch increased from 45.24% to 95.65%; Weaning weight of piglets increased from 5.81 to 6.87 kg;																			
Economic benefit analysis 1: According to the PED weaned piglets loss rate of 60% weaned piglets observed in 22th batch, the cost of a piglet is 360 yuan. If the survival rate of weaned piglets is 95.65%, the cost of a piglet is 240 yuan, <b>reducing the loss of 220,000 yuan.</b>																			

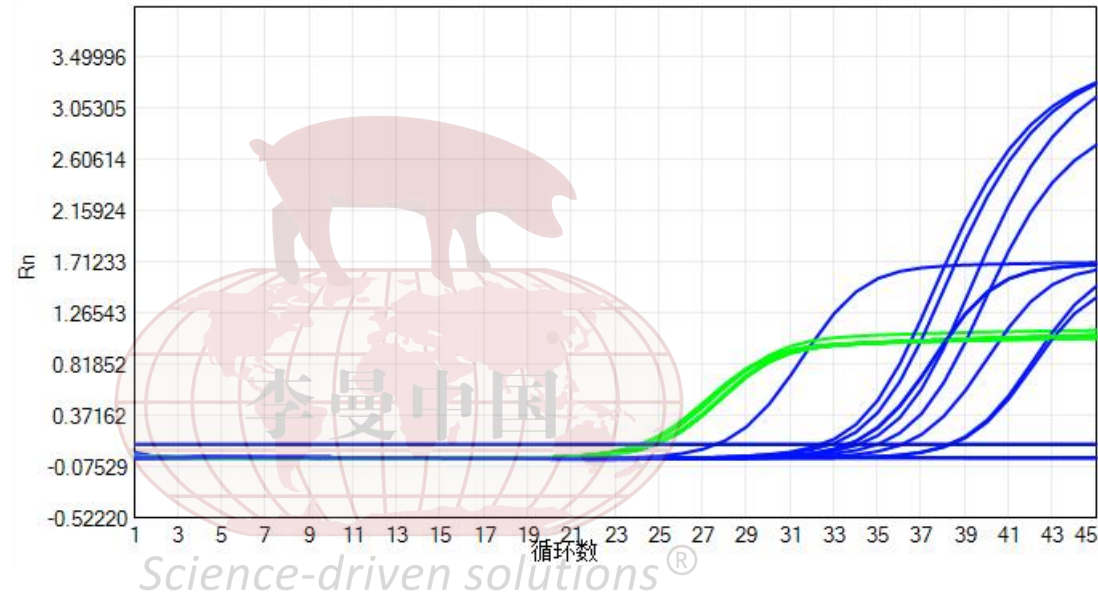
- **Economic benefit analysis 2:** The survival rate of weaned piglets in 23th batch was 95.65%, and the cost of each weaned piglets is 400 yuan, which was **3.39%** higher than the 92.26% survival rate of weaned piglets in 21th batch with the cost of 420 yuan. Cost of weaned piglets was reduced by **20 yuan/pig**, and the cost of the whole batch of 14,303 weaned piglets was reduced by 286,000 yuan;
- **Economic benefit analysis 3:** If the survival rate of weaned piglets in the 23rd batch is 90% and the mortality rate is 10%, compared with the actual data in the 23rd batch, the survival rate of weaned piglets is reduced by **5.65%**, the cost of weaned piglets needs to increase by 24.8 yuan, and the cost of the whole batch of 14,303 weaned piglets increases by **355,000 yuan;**

## Step 4: Tracking PED disposal results - 03. PED Analysis of mortality of piglets after treatment



## Step 4: Tracking PED disposal results - 04. PCR detection after PED disposition

编号	PEDV-CT	结果
CF2: 23P M1067	31.1	阳性
CF2: 23P 25300	30.9	阳性
CF2: 23P M0983	NOCT	阴性
CF2: 24P M1385	NOCT	阴性
CF2: 24P 23248	28.8	阳性
CF2: 24P M0214	36.2	阳性
CF2: 25P M1696	33.8	阳性
CF2: 25P M0219	NOCT	阴性
CF2: 25P 005435	NOCT	阴性
CF2: 空白: 22319	NOCT	阴性
CF2: 空白: M1049	32.8	阳性
CF2: 空白: M1239	36.9	阳性
CF2: 空白: 01668	34.3	阳性
CF3 配杯: M0005	35.6	阳性
CF3 配杯: 005442	NOCT	阴性
CF3 配杯: 24848	NOCT	阴性
CF3 配杯: M1257	NOCT	阴性
CF3 配杯: M2540	NOCT	阴性
CF3 配杯: M2744	NOCT	阴性
CF3 配杯: M3153	NOCT	阴性
CF3 配杯: 21786	NOCT	阴性
CF3 配杯: M0449	34.2	阳性



**With the passage of disposal time, herds with weakened pathogen detoxification gradually stabilized**

**Fluorescence PCR detection, positive rate and Ct value are noteworthy**

# Procedures of emergency treatment plans of PED under the mode of 4-week a batch

Procedures of emergency treatment plans of PED under the mode of 4-week a batch (Take a pig farm for example )

## 1. Diagnosis of PED

1. Initial diagnosis of clinical symptoms
2. Pathological anatomy
3. Laboratory-confirmed diagnosis

## 3. Implementation of PED treatment plans

1. Treatment process of mating and gestation house
2. Treatment process of farrowing house

## 2. Preparation of PED treatment

1. Holding an emergency meeting
2. Determining the treatment plans
3. Determining materials and division of labor

## 4. Results tracking of PED treatment

1. Control test of PED antibody
2. Effect verification of PED treatment

Science-driven solutions®

李曼中国

# Summary and sharing of other experience on PED emergency handling

## Emergency disposition:

1. Treatment after delivery >15 days: pregnant sows treatment with “back feed+ inactivated vaccine immune” can provide effective protection for piglets;
2. Piglets are less affected by PED after 15 days, and “fecal return + intestinal return + bio-safety operation” can provide effective protection for piglets.
3. If farrowing sows are not immune and close to the birth date, feeding allyprogesterone to delay the birth can improve the antibody of the sow, hence effective protection for the piglets. The next batch of sows were immunized with PED inactivated +PED live vaccine 4 weeks before delivery, and strengthened immunized with PED inactivated vaccine 2 weeks before, hence effective protection for piglets.

# Disposal experience

---

## Conventional treatment:

- 1. Immunization with PED inactivated +PED live vaccine 4 weeks before delivery, and enhanced immunization with PED inactivated vaccine 2 weeks before delivery
- 2. Gilt immunization: 125 dpi for PED live vaccine, 160 dpi for enhanced PED live vaccine +PED inactivated vaccine



# Disposal experience

## Advantages of batch production

### 1. Improve the health of herds

After batch production, each batch of pigs is the same because of variety and age, which is more conducive to adopting unified nutrition supply, environmental control, drug health care, disease prevention and control and feeding management, improving the health level of pigs, and improving the biosafety of pig farms.

### 2. Save manpower

In the process of batch production, the work of breeding, birth acceptance and epidemic prevention are periodic, which is conducive to the arrangement and allocation of pig farm staff and reduce unnecessary manpower.

### 3. Reduce costs

Batch production herds present more consistent immunity status and uniformity, and have no contact with other batches, which helps herds maintaining good health, thus reducing the cost of veterinary drugs and vaccines.

### 4. Improve efficiency

Batch production is convenient for all in and all out. In the process of feeding and management, farm maintenance, environmental disinfection, disease prevention and control, pig herd turnover, etc., are centralized to improve production efficiency;

### 5. Improve the utilization rate of the enclosure

Batch design according to the farrowing bed and positioning bar can make full use of the production equipment, build balanced, orderly and full load production management, and improve the overall economic benefit of the pig farm.

## Main advantages of four-week batch:

**1. The delivery room turnover efficiency is higher, the total output is more advantageous; 2. Compared with the production mode such as weekly batch, the full entry and exit of the farrowing room is more thorough; 3. Match better with 6750 fattening enclosure mode, and fattening can achieve all-in&all-out.**



# Acknowledgements

---

- Staff in production line of KINGKEY SMART AGRI
- Staff of the Veterinary Technology Department of KINGKEY SMART AGRI
- Researcher Wu Zhijun, Chairman of Guangdong KINGKEY SMART AGRI
- Professor Zhang Guihong, President of KINGKEY SMART AGRI research institution
- Wu Shaoqin, vice president of Guangdong KINGKEY SMART AGRI

*Science-driven solutions*®

Thanks for your listening!

感谢聆听!



*Science-driven solutions*®