# FIELD TRIALS TO EVALUATE THE EFFICACY OF VIUSID®VET IN VIETNAM

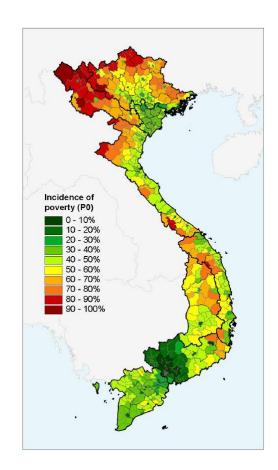
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**Technical Director of Anvet Co.,** 

# THE EFFICACY OF VIUSID®VET ON SWINE PRODUCTION IN VIETNAM





## INTRODUCTION

Viusid is a nutritional preparation, composed of antioxidants, vitamins, trace elements and an active substance from liquorice root extract (glycyrrhizinic acid) with potential antiviral properties. The molecular activation of its active substances stimulates their biological functions (antiviral and antioxidant effect), without modifying their molecular structure, which significantly builds up the organism's defences.

# MATERIALS AND METHODS

**Trial design**: A swine farrowing-finisher farm, named GIA PHAT, with 600 sows that is located at Cu Chi district, Ho Chi Minh city was selected for the Viusid trial.

- Total 58 pregnant sows were randomly divided to be 2 groups (29 for each group) in which they were equal about breed, age, parity and production. One was supplemented with VIUSID as the VIUSID group and one was not as the Control group.

- The length of the test: 90 days for sows (30 days before delivery and 60 days after delivery).
- Sanitary managing: The usual one, contemplates the vaccination and therapeutic program.
- Type of housing: Cool-closed system.
- Temperature: 26-32°C
- Food system: manual
- Drinker type: nipple
- Products: Viusid© Vet Powder
- Application dose: 2 kg VIUSID/ ton of feed
- Time for application: 30 days before delivery (84-day gestation) up to weaning day after delivery (approx. 58 days).

#### **Evaluated parameters**

#### 1. Performances

#### 2. Production

Total borne per litter

Rate of mummified/stillborn piglets

Number of piglets born alive per litter

Number of weaners per litter

Average live weight of weaning

Time to re-estrus after weaning

Rate of successful insemination (service)

Rate of mastitis

Rate of metritis

Average live weight of growing (around 20 kg)

FCR at growing (around 20 kg)

Rate of piglets/weaners suffered respiratory disorder

Rate of piglets/weaners suffered diarrhoea

Mortality

#### 3. Antibody titers against PRRS and Classical Swine Fever dieases

#### 4. Economic efficacy

## **RESULTS**

# 1. Evaluation of performance

Some below pictures showed up the performance of nursery piglets, weaners and growers

#### **VIUSID**



#### **Control**



One days old piglets

# VIUSID







14 days old piglets





20 days old piglets



30 days old pigs after weaning





45 days old pigs after weaning





54 days old pigs after weaning





63 days old pigs after weaning



Moving to grower units

#### The pig farmers evaluated:

- VIUSID group showed better performance in nursery piglets, weaners and growers
- VIUSID group showed less feather, more shiny and ruddy skin.
- VIUSID group performed more uniformity

## **RESULTS**

#### 2. Production

The results evaluating production parameters were showed in the below table

Parameters	Groups			
	VIUSID	Control		
Total borne per litter	12.59 ± 2.64	11.93±2.94		
Rate of mummified/ stillborn piglets (%)	9.3	9.0		
Ave. number of piglets born alive per litter	11.4 ± 2.84	10.9 ± 2.9		
Ave. number of weaners per litter	10.66 ± 2.76	9.69 ± 2.8		
Ave. live weight of a weaner per litter (kg)	7.06 ± 0.67	7.02 ± 0.79		
Ave. weaning age (days old)	26.21 ± 2.46	26.59 ± 1.97		
Ave. live weight of a grower per litter (kg)	16.0 ± 0.97	15.3 ± 1.63		
FCR at growing time	1.60	1.72		
Piglet mortality and culling up to grower (%)	10.29	12.04		
Piglet health				
- Diarrhea (%)	1.72	2.01		
- Respiratory signs (%)	0	0		
- Others (%)	0	0		
Sow health				
- Metritis (%)	0	0		
- Mastitis (%)	0	0		
- Others (%)	0	0		
Ave. interval from weaning to mating (days)	6.7	6.7		
Rate of mating failure (%)	0	11.1		

Overally, the VIUSID group showed production parameters better than the Control group, especially increased more almost 1 weaner per litter than the Control group and no any failure in mating after weaning.

## **RESULTS**

- 3. Antibody titers against PRRS and Classical Swine Fever (CSF) diseases
- PRRS: ELISA used the kit "Hercheck\* PRRS X3 PRRSV Antibody test kit" of IDEXX
  - CSF: NPLA method, CSIRO, Australia

#### Rate of positive antibody against PRRS

Batch (*)	No of samples	Rate of positive	antibody (S/P)
		VIUSID	Control
1	20	70 %	60 %
2	20	90 %	35 %

<sup>(\*)</sup> Different batches of weaning

Note: PRRS vaccine was applied in piglets at 21 days old and sampling was taken at 50 days old

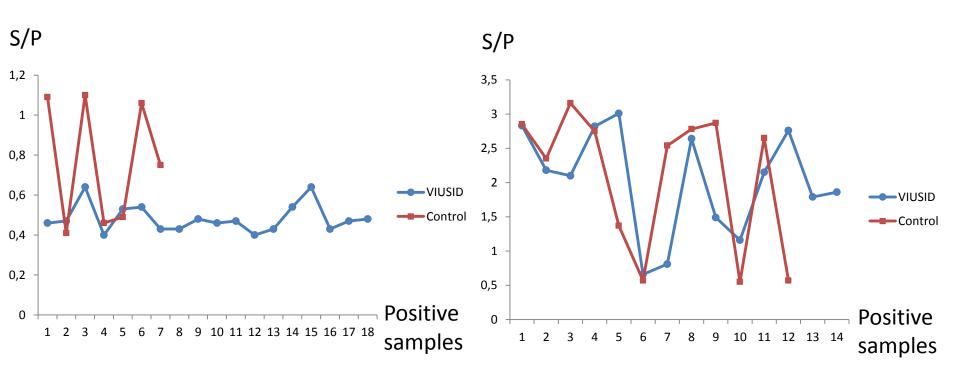
#### Rate of positive antibody against Classical Swine Fever

Batch (*)	No of samples	Rate of posit	ive antibody
		VIUSID	Control
1	20	40 %	5 %
2	20	10 %	10 %

<sup>(\*)</sup> Different batches of weaning

Note: CSF vaccine was applied in piglets at 35 days old and sampling was taken at 50 days old

Overally, the VIUSID group showed rate of positive antibody titers against PRRS and CSF diseases higher than the Control, especially, the variation level of S/P in PRRS ELISA assay.



# **RESULTS**

# 4. Economic efficacy

#### **Calculation at weaning time**

Items	VIUSID	Control
Cost for VIUSID/ sow/ litter	20 HCD	
(0.5 kg VIUSID/ sow)	20 USD	-
Turnover		
- Weaners (55.6 USD/weaner)	10.66 x 55.6	9.69 x 55.6
	= 593 USD	= 539 USD
Profit	593 – 20	
Pront	= 573 USD	539 USD
Different profit between 2 groups	573 – 539	-
/ sow/ litter	= 34 USD	

#### **Calculation at growing time**

Items	VIUSID	Control
Cost for VIUSID/ sow/ litter	20 USD	_
(0.5 kg VIUSID/ sow)	20 000	
Total cost for VIUSID used in 29	20 USD x 29	
litters	= 580 USD	
Cost for piglet's feed up to grower		
- Total live weight of growers (kg)	6,496	6,060
- Total feed used (kg)	6,496 x 1.6	6,060 x 1,72
	= 10,394	= 10,423
- Cost for feed	10,394 x 0.65	10,423 x 0.65
(0.65 USD/ kg of feed)	= 6,756 USD	= 6,775 USD
Turnover		
- Total live weight of growers (kg)	6,496 x 4.4	6,060 x 4.4
(4.4 USD/ kg)	= 28,582 USD	= 26,664 USD
Profit	28,582 - (580 +	26,664 - 6,775
	6,756)	= 19,889 USD
	= 21,246 USD	
Different profit for whole trial between	21,246 – 19,889	
2 groups	= 1,357 USD	

Generally, VIUSID is not only to increasing immune response for piglets, but also to help swine farmer to get more profit (it is not including calculation of costs of mating failure in sows after weaning)

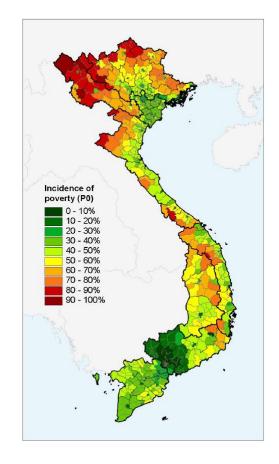
#### CONCLUSIONS

VIUSID applied for pregnant sows from 84-85 days of gestation to weaning brings back some advantages as following:

- Better production
- Better performance for offspring pigs.
- Increasing immune response after vaccination
- Get more profit after deducting VIUSID's cost.

# THE EFFICACY OF VIUSID®VET ON BROILER PRODUCTION IN VIETNAM





## INTRODUCTION

Viusid is a nutritional preparation, composed of antioxidants, vitamins, trace elements and an active substance from liquorice root extract (glycyrrhizinic acid) with potential antiviral properties. The molecular activation of its active substances stimulates their biological functions (antiviral and antioxidant effect), without modifying their molecular structure, which significantly builds up the organism's defences.

## MATERIALS AND METHODS

#### **Trial design**

A broiler chicken farm with 160,000 Tam Hoang-breed chickens that is located at Cu Chidistrict, Ho Chi Minh city was selected for the Viusid trial.

- A pen of 6,000 chickens was set up and divided to be 3 groups





Groups	n	Following routine medication program of the farm (*)	Supplemented VIUSID with dose: 1 ml VIUSID/ 1 L water within first 21 days
1	3,000	Yes	No
2	2,800	Yes	Yes
3 (**)	200	No	Yes

(\*) Medication program applying at the farm

1-4 days old: Vitamin C + Antibiotics + Electrolytes + Antigum

5-6 days old: product supported hepatic-renal function

10-11 days old: probiotics 17-18 days old: multivitamin

(\*\*) Still followed vaccine program of the farm:

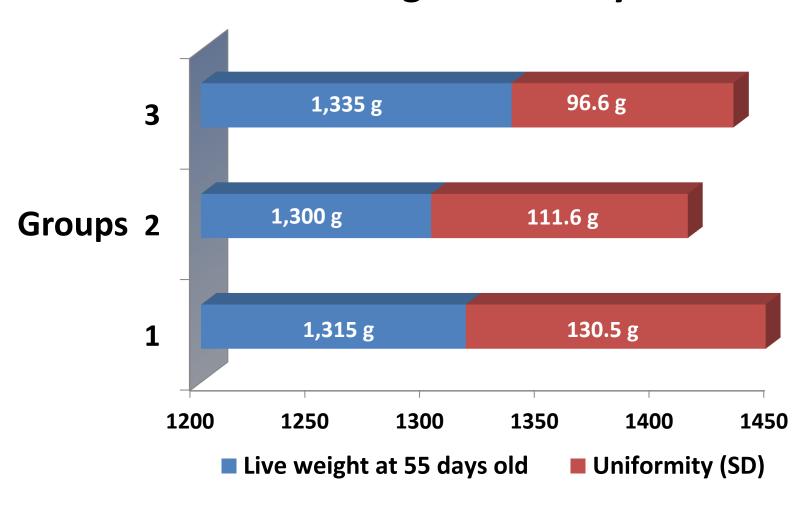
4 days old: ND-IB

15 days old: ND-IB, AI 17 days old: Gumboro

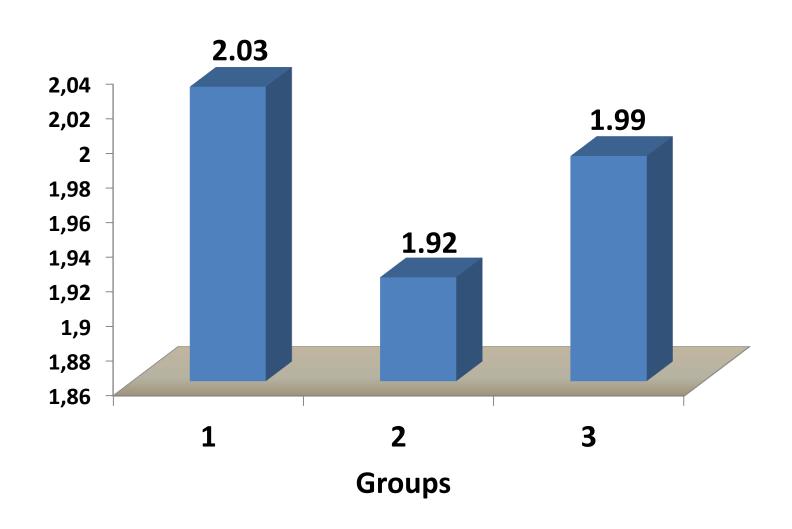
- The length of the test: 60 days (slaughtering)
- Sanitary managing: The usual one, contemplates the vaccination and therapeutic program.
- Type of housing: Cool-closed system.
- Temperature: 26-32°C
- Food system: manual
- Drinker type: nipple
- Products: Viusid© Vet Liquid
- Application dose: 1 L VIUSID/ 1,000 L water.
- Time for application: first 21 days of chicken life

# **RESULTS**

#### Live weight at 55 days old



## Feed conversion rate (FCR)



#### **Antibody titres against Newcastle disease**

#### At 34 days old

Groups	1/8	1/16	1/32	1/64	1/128	1/256	1/512	MG
1	4	7	3	4	2			26
2	4	6	6	2	2			24.2
3			3	2	2	1	2	104

#### At 55 days old

Groups	1/4	1/8	1/16	1/32	1/64	1/128	1/256	1/512	MG
1		5	9	6					17.1
2	1	2	10	5	2				19.7
3			1	5	1	3			49

#### **Antibody titres against Avian Influenza (H5)**

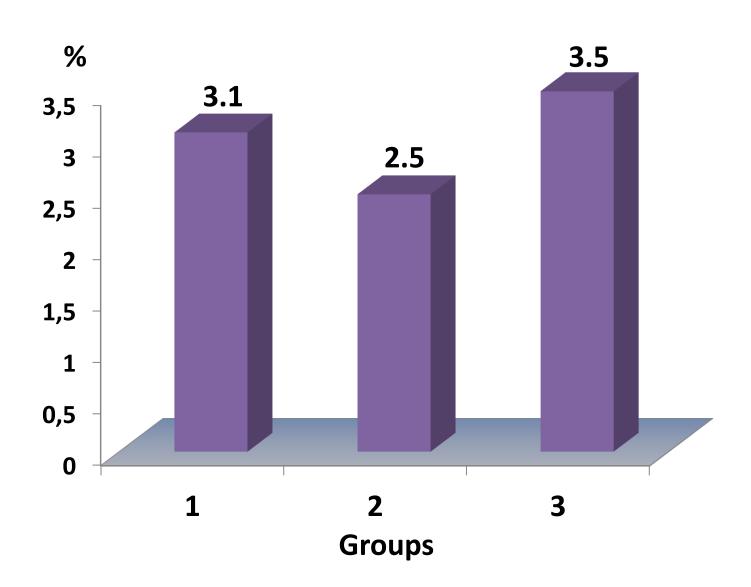
#### At 34 days old

Groups	1/8	1/16	1/32	1/64	1/128	1/256	1/512	MG
1	2	4	7	7				32
2		8	6	5	1			32
3			2	4	2	2		84

#### At 55 days old

Groups	1/4	1/8	1/16	1/32	1/64	1/128	1/256	1/512	MG
1		4	6	7	3				22.6
2		1	6	4	7	2			37
3			1	2	4	3			60

#### Mortality and culling (%)



Itomo	Groups			
Items	1	2	3	
Cost for 1 day old chick (0.6 USD/ chick)	1,800 USD	1,680 USD	120 USD	
Cost for VIUSID	-	154 USD	11 USD	
Cost for medication program	112 USD	105 USD	-	
Cost for feed (0.6 USD/ kg feed)	4,757 USD	4,088 USD	308 USD	
Turnover (2.1 USD/ kg live weight)	8,203 USD	7,453 USD	542 USD	
Profit	1,534 USD	1,426 USD	103 USD	
Profit/ chicken	0.51 USD	0.51 USD	0.52 USD	

#### **CONCLUSIONS**

- The VIUSID is effective in improvement of broiler production.
- The VIUSID helps to increase immune response after vaccination of ND and AI.
- The VIUSID brings back profit for farmers.
- If management is improved to reduce mortality and culling, the efficacy of VIUSID will be better.

# INTRODUCTION OF ANIMAL HUSBANDRY AND VETERINARY SYSTEM IN VIETNAM

#### **ANIMAL HUSBANDRY**

	<b>Year 2014</b>
1. Pigs (1,000 heads)	26,762
- Sows	3,914
- Slaughtered pigs	48,931
2. Poultry (1,000 heads)	324,600
- Chickens	246,028
- Ducks	67,918
- Geese	10,654
3. Buffaloes (1,000 heads)	2,512
4. Cattle (1,000 heads)	5,234
- Meat cattle	5,007
- Dairy cattle	227

#### **SIZE OF SWINE FARMS**

	Size per farm				
	Total	1 – 2 pigs	3 – 5 pigs	6 – 9 pigs	≥ <b>10</b> pigs
<b>Farms</b> (1,000)	4,131	2,144	1,060	367	560

#### SIZE OF POULTRY FARMS

		Size per farm			
	Total	≤ 20	20 - 49	50 -99	≥ 100
Farms (1,000)	7,864	4,301	2,745	562	255

# Chicken production

- 2 kinds of chickens:
  - White feather chicken (55%)



#### Use for:

- \* Export (China)
- \* Fast food (KFC, McDonald)
- \* Food processing

Price: 1.2-1.5 USD/ kg live

weight

- Colourful feather chicken and "Ac" chicken (45%), rearing in indoor or outdoor system.





Use for:

- \* Daily meal
- \* Restaurant, party
- \* Worship anniversary

Price: 2.1-4.2 USD/ kg live weight

#### Characteristics of husbandry field in Vietnam

- Small scale farms still occupy high percentage (Poultry: 50-60%, swine and cattle: 60-70%).
- Lack of knowledge of modern technology in husbandry.
  - Market prices are very fluctuated.
  - Often get loss.
- Facing with many serious infectious diseases like: AI, Newcastle, IB, Gumboro, CSF, PRRS, FMD and so on.
  - Lack of support from government.

# **VETERINARY SYSTEM**



# CỤC THỦ Y VIỆT NAM DEPARTMENT OF ANIMAL HEALTH

#### Regional Animal Health Offices (RAHOs)

- ★ No. 1 (Ha Noi)
- **★ No. 2** (Hai Phong)
- **★ No. 3 (Vinh)**
- **★ No. 4 (Da Nang)**
- **★ No. 5 (Daklak)**
- **★ No. 6 (HCMC)**
- **★ No. 7 (Can Tho)**
- ► Regional Sub
  Departments of
  Animal Quarantine
  and Inspection in
  Lang Son, Lao Cai
  and Quang Ninh

#### **DAH** - Functional Divisions:

- Personnel and Administration
- Epidemiology
- Inspection & Quarantine
- Drug & Vaccine Management
- Legislation & Inspection
- Plan (Inter. Cooperation & Science)
- Finance
- \* Representative of DAH

#### Provincial Sub-Department of Animal Health

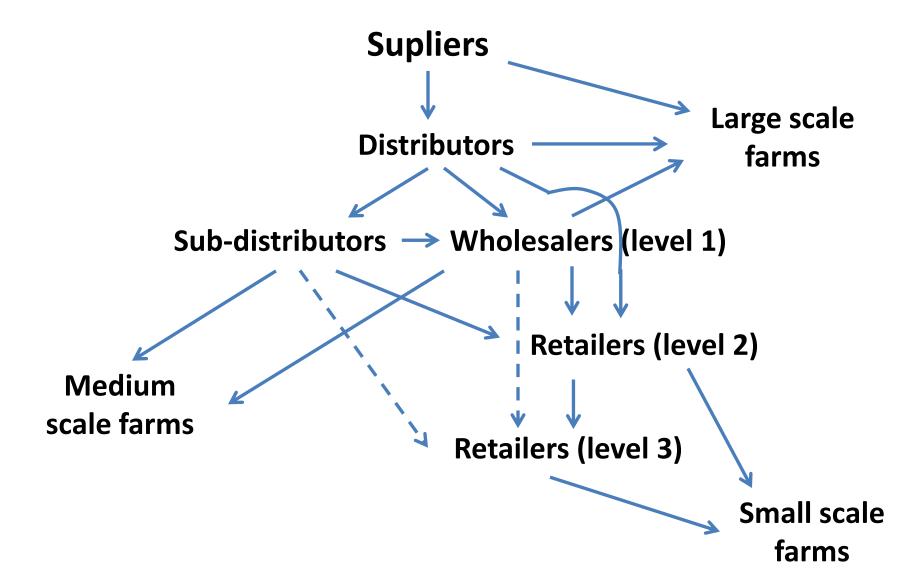
District Veterinary Station **Domestic Inspection Station** 

Commune Veterinary Team

#### **Professional Centers**

- ■The National Center for Vet. Diagnosis
- The National Center for Vet. Bio-products Inspection 1, 2
- The National Center for Hygiene Inspection 1, 2

# **Veterinary medicine business**



# OUR STRATEGY DEVELOPING VIUSID IN A SUSTAINABLE WAY

- **Step 1.** Introduce and develop business in the small and medium scale farms via subdistributors, wholesalers and some retailers
- → Done (around 25%), some farmers are using to test and majority are observing and waiting the results (that is Vietnamese culture).
- **Step 2.** Introduce and develop business in the large scale farms
- → Now starting.

#### **Explanation:**

If we do another way around  $\rightarrow$  products will sell faster, but:

- The success of VIUSID will come to small and medium farmers very less.
- The system of large scale farms are very good, so the success of VIUSID will not be much different.
- Risky because of market prices are very fluctuated every year.

Furthermore, the status of small scale farms is house by house, farm by farm, so it is easy to occur outbreaks of disease

They will see obviously the efficacy of VIUSID

Some below evidences showed up the efficacy of VIUSID in field.

# CASE REPORTS ON VIUSID APPLICATION IN DIFFERENT AREAS AND KINDS OF CHICKEN

#### **AREAS AND PROVINCES**

- Binh Duong, Binh Phuoc provinces
- Long An, Tien Giang provinces
- Ben Tre provinces
- North of Vietnam

# Binh Duong, Binh Phuoc provinces

#### Case No 1

- A 2,000 colourful feather broiler chicken farm
  - + Use VIUSID from first 21 days.
  - + Selling to abatttoir at 3 months old.



→ The chicken trader didn't want to buy because they professionally estimated chicken weight around 1.3-1.4 kg and they just wanted to buy > 1.5 kg. However, when they weighed the chickens, all of chickens were over 1.6 kg live weight.

### Binh Duong, Binh Phuoc provinces

#### Case No 2

A 2,000 colourful feather broiler chicken farm

Age of chicken: 3 weeks old



+ Gumboro disease was occurred 3 days with mortality of 10%.





- + Used VIUSID 2 days → stopped mortality.
- + After 3 days of using VIUSID, chickens were completely recovered and eating normally.

# Binh Duong, Binh Phuoc provinces

#### Case No 3

A 10,000 colourful feather broiler chicken farm (rearing outdoor system) contained 3 pens: 3,000; 3,000 and 4,000 pens



- + A 3,000 pen with 10 weeks old was got outbreak of disease 7 days
  - Diarrhea with green colour faeces.
  - Respiratory signs
  - Daily dead 40 60 chickens
  - Used antibiotics: Doxycycline+Gentamycin,
     Enrofloxacine+Colistin, and multivitamin +
     electrolytes → dead more.









+ Laboratory diagnosis by PCR technique (NOVATECH's Lab): positive with Newcastle disease virus and Infectious Bronchitis virus (IBV).

#### + Solutions:

- Used VIUSID: 2 ml/ L water
- Vaccinated lived ND vaccine: 2 doses/chicken
- → after 3 days of application, stopped mortality and recovered after 5 days.

# Binh Duong, Binh Phuoc provinces

#### Case No 4

A 4,000 colourful feather broiler chicken farm (rearing outdoor system): 10 weeks old



- + Chickens were got outbreak of disease 5 days
  - Diarrhea with white-green colour faeces.
  - Light respiratory signs.
  - Daily dead 20 30 chickens
  - Used antibiotics  $\rightarrow$  dead more.

+ Sent samples to NOVATECH's Lab for NDV diagnosis by PCR technique: positive

- + Solutions suggested:
  - Used VIUSID: 2 ml/ L water
  - Vaccinated lived ND vaccine: 2 doses/chicken
  - → after 3 days of application, stopped mortality.

Case No 5

A 10,000 "Ac" broiler chicken



- + Used VIUSID within first 21 days
- + After 28 days of rearing, the male chickens were sold with their weight reached requirement (Normally they must be reared up to 38 days old).
- + The female chickens were kept to be layers and grown well without sickness.

#### Case No 6

- A 3,000 colourful feather broiler chicken farm (rearing outdoor system): 13 weeks old
  - + Sold to a chicken trader, but the trader denied to buy about 200 small and bad performance chickens. The farmer intended to supply for python as food.



- + Our retailer suggested him to use VIUSID
- + After used VIUSID one week with normal dose: 1 ml/ L water, all 200 chickens were sold and accepted by chicken trader.

#### Case No 7

Some "Ac" broiler chicken farms were got outbreaks of disease with following signs:



- + Swollen kidney
- + Watery diarrhea
- + High mortality 30 50% (sometimes 70%)

- + Used VIUSID with dose: 1 ml/ L water within 5-6 ngày → stopped dead.
  - + Mortality within these days just 5 10%.

#### Case No 8

Some colourful feather broiler chicken farm (rearing indoor or outdoor system)



+ After vaccinating Ma5-Clone30 vaccine about 3-4 days, chickens showed respiratory signs that farmers called "singing chicken".



- + Mortality up to 30%.
- + Used VIUSID with dose: 1 ml/ L water, after 3 days → stopped signs and dead.

### **Ben Tre province**

#### Case No 9

- A 5,000 colourful feather broiler chicken farm (rearing outdoor system): 8 weeks old
- Chickens showed respiratory signs that farmers called "singing chicken", when the farmer entered the pen, no any voice appeared.
- Very less mortality, sometimes some chicken dead, but not continuous.
- Used antibiotics 7 days: Spiramycin,
   Lincomycin+Spectinomycin → not better.
- Used VIUSID with dose: 2 ml/ L water. After 3 days using, the sign was reduced very much.

#### The North of Vietnam

#### Case No 10

A 300,000 colourful feather layer chicken farm (rearing indoor system)



- + A pen with 16.000 layers at 25 weeks old
  - Reduced laying rate of 20%.
  - Daily dead 5 8 layers.
- + Laboratory diagnosis at the National Center of Veterinary Diagnosis: positive with NDV and IBV (by ELISA).

→ Used VIUSID with dose: 2 ml/ L water. After using 3 days, no death was observed

# Some pictures of big workshops

### **Binh Phuoc province**











## **Tien Giang province**











#### **Ben Tre province**









# Long An province









And some other small workshops directed to a group of farmers (no pictures) ©.

We are planning to organize some other big workshops within this month and June in some different provinces. It is also a summer vacation for me from my university.

#### **REQUESTING FOR YOUR SUPPORT**

After many places and farms will be known VIUSID product and its efficacy, we would like to organize 2 big workshop events:

- 1. HO CHI Minh city
- 2. HA NOI capital

Participates: large-scale farmers/husbandry companies, provincial wholesalers, and some potential retailers (level 2), and of course some retailers selling VIUSID

Expected period of time: the end of July

Your time: almost one week

# THANK YOU VERY MUCH FOR YOUR READING THE REPORT