

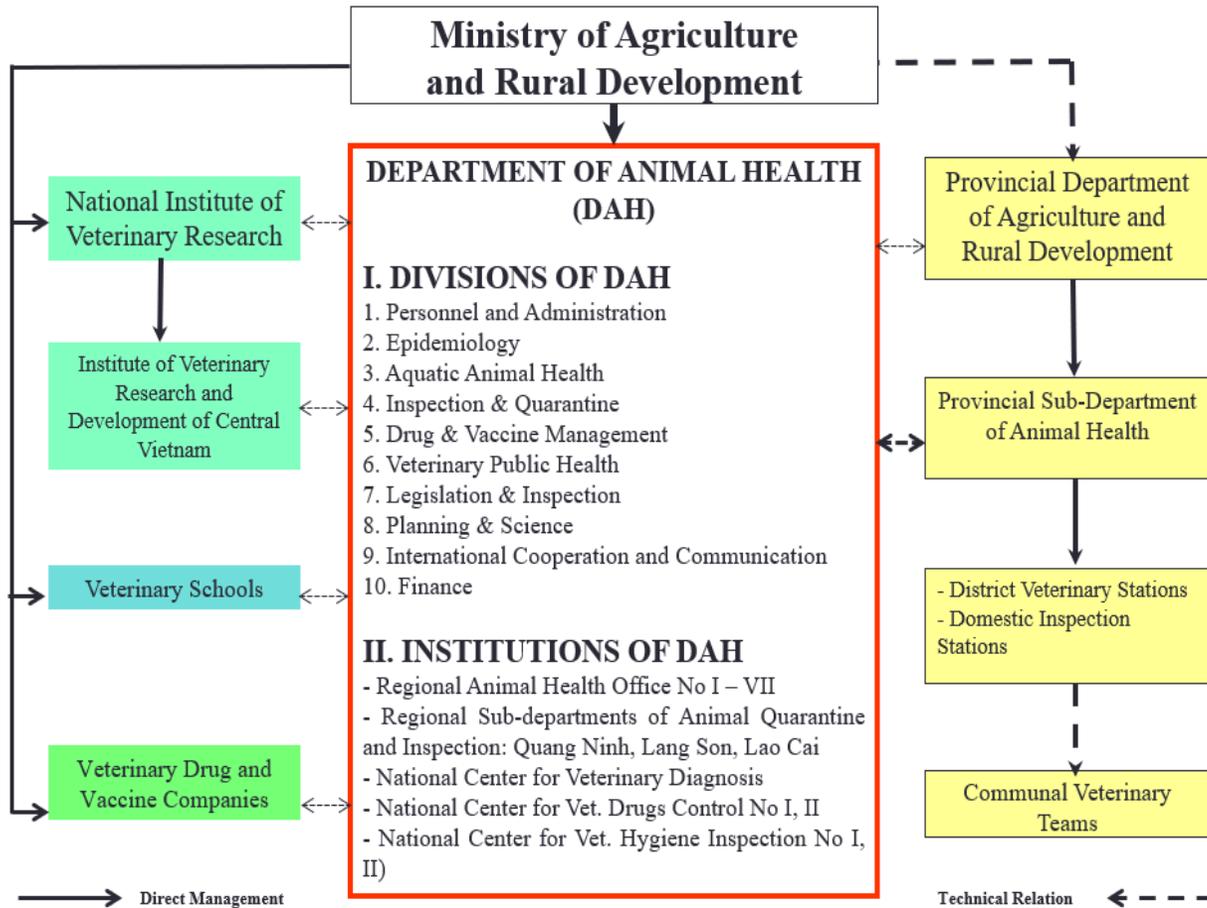
24th SEACFMD National Coordinator Meeting

**“FMD vaccination implemented following the Public
Private Partnership model:
Veterinary Services and Vaccine Producers”**

VIET NAM

24th SEACFMD National Coordinator Meeting “Veterinary services in Viet Nam”

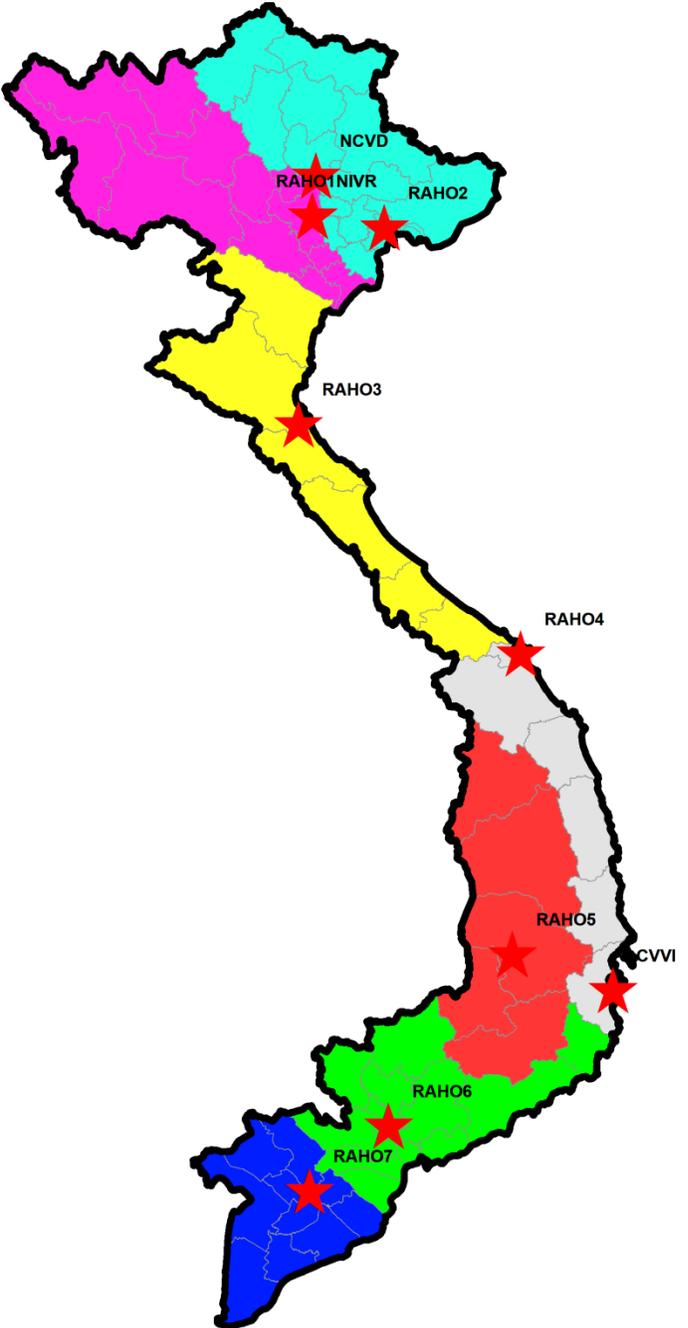
Veterinary service structure



Human resource:

- At national level (DAH): 646 staff
- At provincial level (63 SDAH): 3,673 staff
- At district level: 4,014 veterinarians
- At the commune level: 20,676 animal health workers

RAHOs and Veterinary Laboratory System



8 Laboratories with BSL 2 Plus are available for animal health surveillance activities

24th SEACFMD National Coordinator Meeting

“FMD vaccine production in Viet Nam”

Vaccine matching analysis

Strain	Serotype O		O 3039		O ₁ Manisa		O/TUR/5/2009	
	Topotype	Lineage	Boehringer Ingelheim		Boehringer Ingelheim		MerckAnimal Health	
			R ₁	Titre	R ₁	Titre	R ₁	Titre
PAK 46/2019	ME-SA	Ind-2001	0.37	1.54	0.4	1.94	0.54	1.84
VIT/13/2020	ME-SA	Ind-2001	0.46	1.64	0.48	1.98	0.71	1.98
VIT/19/2019	ME-SA	PanAsia	0.6	1.76	0.59	2.07	0.87	2.07
PAK 3/2020	ME-SA	PanAsia-2	0.55	1.71	0.4	1.94	0.98	2.10
VIT/13/2019*	SEA	Mya-98	0.36	1.52	0.19	1.58	0.34	1.71
	ME-SA	Ind-2001						
VIT/15/2019	SEA	Mya-98	0.26	1.40	0.23	1.66	0.39	1.72
VIT/31/2019	SEA	Mya-98	0.37	1.51	0.25	1.68	0.37	1.80

Isolate	Serotype O		O1 Campos Biogenesis	
	Topotype	Lineage	r ₁ -value	Titre
PAK/46/2019	ME-SA	Ind-2001	0.26	1.90
VIT/13/2020	ME-SA	Ind-2001	0.78	2.24
VIT/19/2019	ME-SA	PanAsia	0.79	2.24
PAK/3/2020	ME-SA	PanAsia-2	0.56	2.19
VIT/15/2019	SEA	Mya-98	0.15	1.61
VIT/31/2019	SEA	Mya-98	0.24	1.82

FMDV collected between 2019 – 2020 from cattle, buffalo & pig

FMDV type O

- * ME-SA/Ind-2001e (21 samples, majority)
- * ME-SA/PanAsia (2 samples)
- * SEA/Mya-98 (5 samples)

Vaccine matching:

- Strong antigenic relationship between field isolates and vaccine strains (O3039, O1manisa, Ocampos, O135).
- Post-vaccination: High antibody response tested by VNT, ELISA in laboratory.
- Generally, vaccine(s) and FMD field viruses are homogenous and the vaccine(s) with 6PD50 can provide good protection.

24th SEACFMD National Coordinator Meeting “FMD vaccine production in Viet Nam”

R&D domestic vaccines against FMDV

- RAHO 6 (DAH) selected virus strains (type O; type A)
- Transferred seed viruses to domestic vaccine producers (Navetco, Avac/RTD and Marphavet) for vaccine research and development
- Conducted trials in the field
- Submitted vaccine documents for registration/license
- Mass production of the vaccines



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DAH provided the certification for the first domestic
FMD vaccine (AVAC-RTD company)

CỤC THỦ Y
DEPARTMENT OF ANIMAL HEALTH

GIẤY CHỨNG NHẬN LƯU HÀNH THUỐC THỦ Y MARKETING AUTHORIZATION Số/No: 1341/QLT-SX-18

Tên sản phẩm : Avac-V6 FMD Emulsion
Name of product:
Số đăng ký : Avac-35
Registration number:
Thành phần hoạt chất/ : Virus LMLM type O, chủng RAH06/FMD/O-135,
Active Ingredients: vô hoạt
Công dụng : Phòng bệnh LMLM type O trên trâu, bò.

Tên cơ sở sản xuất/ : Công ty TNHH MTV Avac Việt Nam
Name of Manufacturer:
Địa chỉ : Quốc lộ 5A, thôn Ngọc Lịch, xã Trưng Trắc, huyện
Address: Văn Lâm, tỉnh Hưng Yên
Số điện thoại/Tel: 0221 3980507 Số Fax/Fax No: 0221 0788679
Giấy chứng nhận lưu hành này có hiệu lực đến: 26/10/2023
This marketing authorisation is valid until

Hà Nội, ngày 26 tháng 10 năm 2018
Hanoi Date month year

KT. CỤC TRƯỞNG
PHÓ CỤC TRƯỞNG
DEPUTY DIRECTOR GENERAL



Đàm Xuân Thành

CỤC THỦ Y
DEPARTMENT OF ANIMAL HEALTH

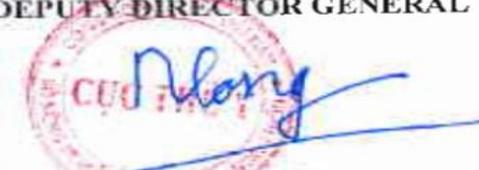
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Giấy chứng nhận lưu hành này có hiệu lực đến: 30/9/2024
This marketing authorisation is valid until

Hà Nội, ngày 30 tháng 9 năm 2019
Hanoi Date month year

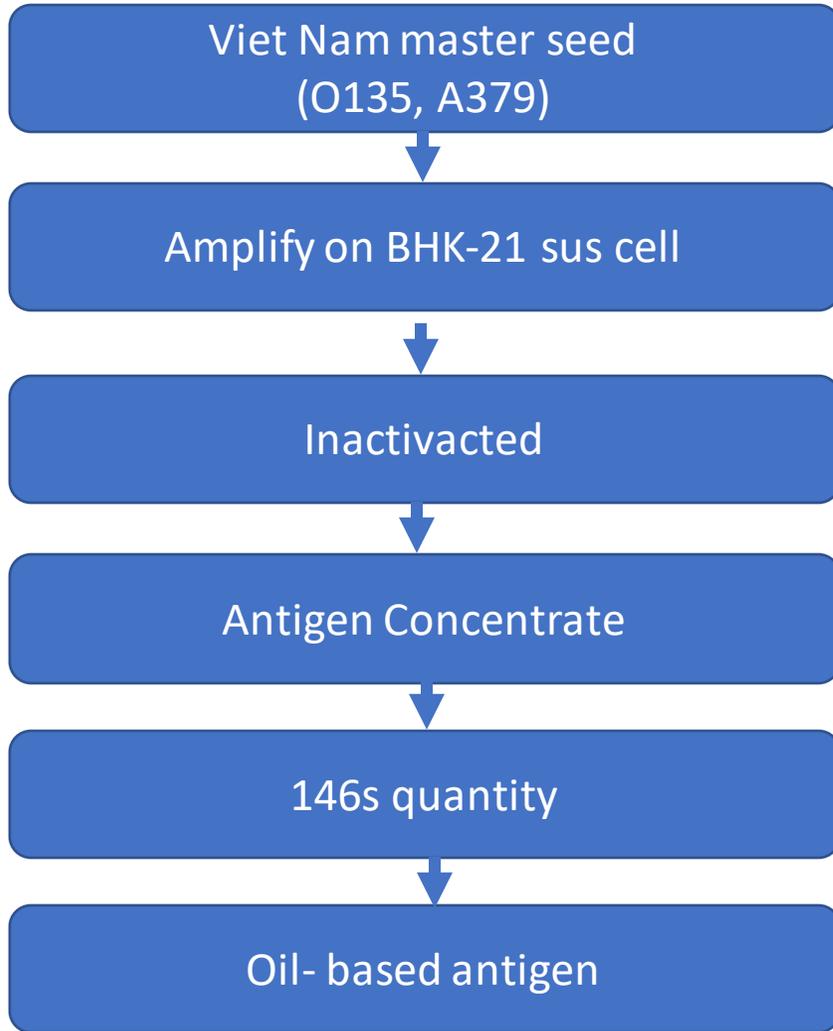
KT. CỤC TRƯỞNG
PHÓ CỤC TRƯỞNG
DEPUTY DIRECTOR GENERAL



Nguyễn Văn Long

24th SEACFMD National Coordinator Meeting “FMD vaccine production in Viet Nam”

Follow chart vaccine produce,
Avac-RTD company.



Avac/RTD vaccine company:

- Produced & supplied: 1 million doses
- Capacity: 12 million doses/year.



COOPERATION BETWEEN NAVETCO AND BOEHRINGER INGELHEIM (MERILA LEGACY COMPANY) ON FMD VACCINE

- **Supply Aftopor and Aftovax vaccine**

The cooperative program is divided into 3 phases:

- Phase 1: NAVETCO imports finished product for distribution
- Phase 2: BI supplies large finished products; NAVETCO shares into small dose bottles.
- Phase 3: BI provides antigens (completely inactivated FMD virus and O3039) and vaccine is mixed at NAVETCO's factory.

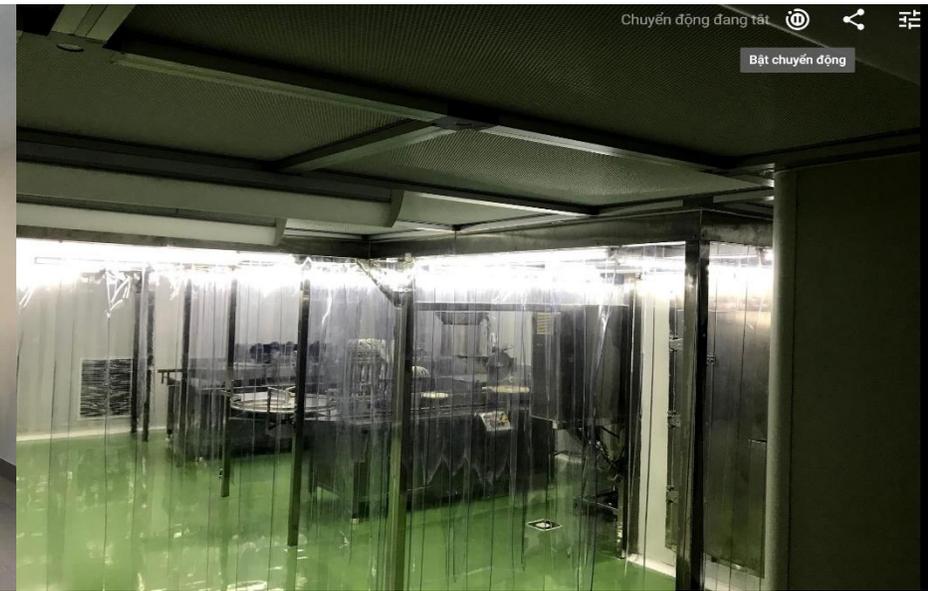
Aftopor and Aftovax vaccines (Mono, Bivalent, Trivalent) have been imported into Vietnam by NAVETCO since 1995 and are currently implementing phase 3 of the cooperative program of production complex at NAVETCO company.

• Technical trainings

- Technical consultancy in the design and supervision of the construction of FMD vaccine production lines to meet European standards.
- Technical training in quality assurance (QA), maintenance and operation of vaccine production lines operating according to Merial/Boehringer.
- Technical training on vaccine production, storage, transport and vaccine use. Methods for FMD post vaccination monitoring.
- On February 11, 2018 BI/Merial officially licensed the production of FMD vaccine on the FMD vaccine production line at NAVETCO company; in 2019 the Vietnam Department of Animal Health assessed and recognized the FMD vaccine production line as meeting GMP-WHO.

- Results

The cooperation between BI/Merial and NAVETCO in the supply and production of FMD vaccines has proven to be successful in all respects. Aftopor and Aftovax vaccines have been accepted by authorities and livestock farmers for a long time and play an active role in the National FMD prevention program in Vietnam.



Technical trainings/workshops

Area for FMD vaccine bottling

THANK YOU!