African Union

AU-PANVAC Laboratories



GF-TADs Africa
GLOBAL FRAMEWORK FOR THE PROGRESSIVE CONTROL OF TRANSBOUNDARY ANIMAL DISEASES

Food and Agriculture Organization of the United Nations

World Organisation for Animal Health
Founded as OIE

African Union

AU Rinderpest Vaccine Reserve: Replenishment of the vaccine stock and geographical scope of shipments

Dr Charles BODJO, AU-PANVAC

Overview of the Presentation

- **Recall on AU-PANVAC Status as Rinderpest Holding Facility (RHF)**
- **RP Continental Vaccine Reserve**
  - Old RP Vaccine Stock
  - Production of New RP Vaccine Batches
  - Hand-over of the new rinderpest (RP) vaccine to AU-PANVAC
- **AU-PANVAC New Facility Complex**



Recall on AU-PANVAC Status as RHF

❑ Recall on AU Decisions

- *Report of the Eighth Conference of Ministers of Animal Resources Doc. EX.CL/590 (XVII) that **called for Members States to hand over what is deemed necessary to AU-PANVAC for safe storage to maintain an Africa free from rinderpest***
- *The Executive Council Decision EX.CL/Dec.610(XVIII) of the Africa Union adopted at its Eighteenth Ordinary Session held in Addis-Ababa, Ethiopia on 24 to 28 January 2011, Addis-Ababa, Ethiopia endorsed the Doc. EX.CL/590 (XVII)*

❑ AU-PANVAC FAO/WOAH Rinderpest Holding Facility Status

- *Category A: Rinderpest Holding Facility for storing Rinderpest Virus Containing Material, excluding vaccine stocks*
- *Category B: Rinderpest Holding Facility for storing only manufactured Rinderpest Vaccines, Vaccine stocks and material solely for their production:*



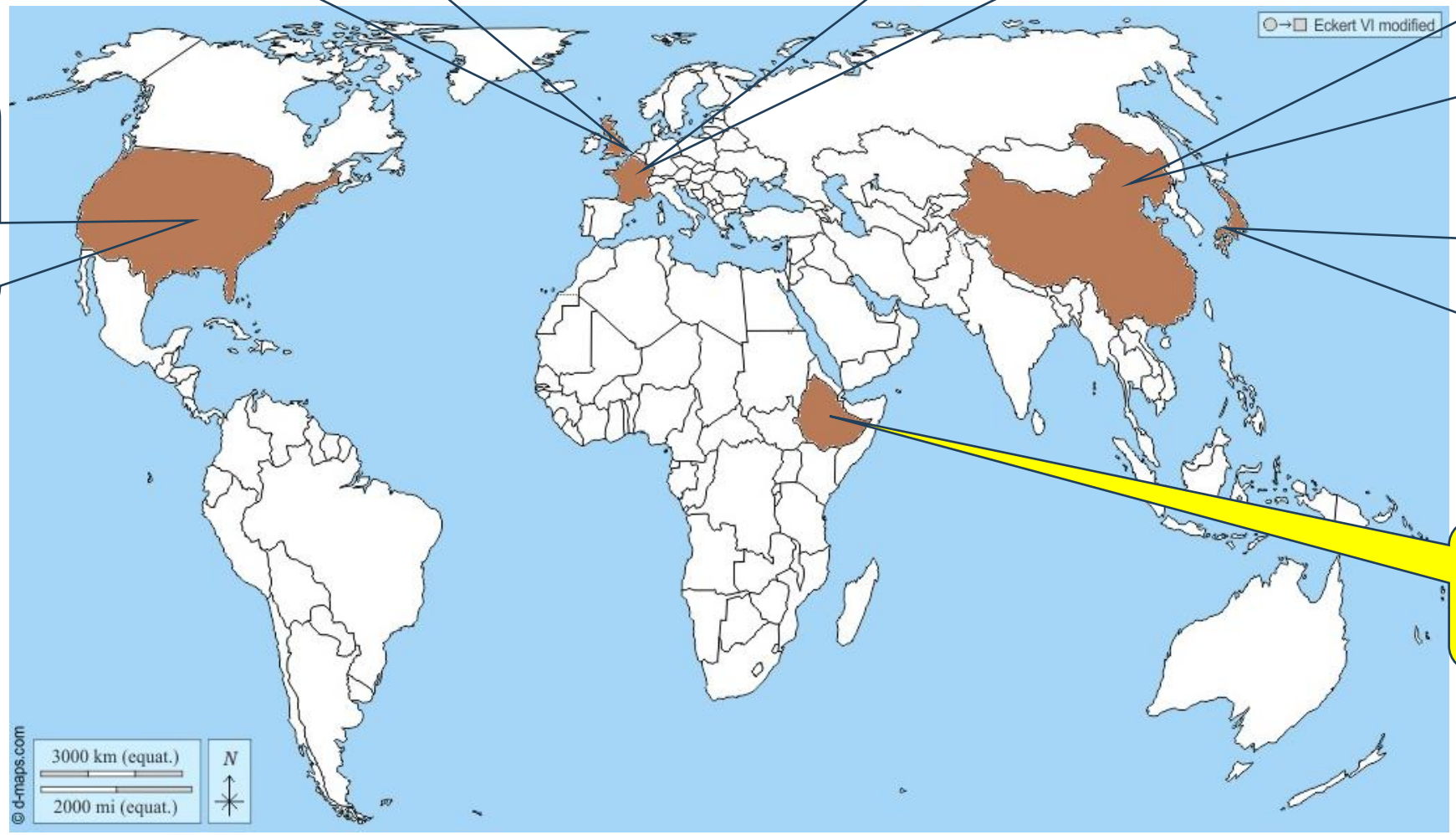
Rinderpest Holding Facilities (RHF) in the World

The Pirbright Institute, Surrey, **UK**

CIRAD), Montpellier, **FRANCE**

Institute of Veterinary Drug Control & China Veterinary Culture Collection Center (IVDC), Beijing, **CHINA**

USDA-APHIS, (FADDL), Plum Island, New York, **USA**.



High Containment Facilities of Exotic Diseases Research Station, & National Institute of Animal Health, Kodaira, Tokyo, **JAPAN**.

AU-PANVAC ETHIOPIA.

Extension of AU-PANVAC RHF Status



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GLOBAL FRAMEWORK FOR THE PROGRESSIVE CONTROL OF TRANSBOUNDARY ANIMAL DISEASES

Food and Agriculture Organization of the United Nations

World Organisation for Animal Health

Dear Dr Nwankpa,

Rome, Paris, 5 March 2023

Extension of designation for the *African Union Pan African Veterinary Vaccine Center* to be approved as an FAO-WOAH Rinderpest Holding Facility Categories A and B

The FAO-WOAH Rinderpest Joint Advisory Committee (the Committee) has reviewed the report of the site inspection to your facility which took place on 17-21 October 2022.

We are pleased to inform you that the Committee at its meeting on 10-11 January 2023 recommended to FAO and WOAH that the African Union Pan African Veterinary Vaccine Center be approved as a FAO-WOAH Rinderpest Holding Facilities Categories A and B for a fourth term, until 31 May 2026. The site inspection report and the mandate for the next designation period are annexed to this letter.

On the FAO side, the FAO Legal Council will issue the final decision on the status of your application. On the WOAH side, the final decision has been included in a resolution that will be proposed for adoption by the World Assembly of WOAH Delegates during its General Session (21-25 May 2023).

On behalf of the WOAH and FAO we wish to thank you for your commitment to continued global freedom from rinderpest.

Yours sincerely,

Dr Thanawat Tiensin
Director
Animal Production and Health Division
Food and Agriculture Organization of the United Nations

Dr Monique Eloit
Director General
World Organisation for Animal Health

Dr Nick Nwankpa
Director
African Union Pan African Veterinary Vaccine Center
Debre Zeit, Ethiopia

Copy:
FAO: T. Tiensin, K. Sumption, M. J. Arshed, K. Sudo, FAOR, FAO Regional Office
WOAH: M. Eloit, M. Arroyo, K. Hamilton, M. Marrana, WOAH Delegate, WOAH Regional Office

Categories A and B until **31 May 2026**.





RP Continental Vaccine Reserve

- Established in 2018
- Inaugurated by The Chairperson of the AUC, H.E M. Faki Mahamat





Old RP Vaccine Stock

- **RP Vaccine of 2,5 million doses from The PARC Programme**
  - LANAVET (Cameroon): 2004
  - NVI (Ethiopia): 2003

- Vaccine titre confirmed GOOD by The Pirbright Institute (August 2018):

  10^3 $TCID_{50}$ /dose

THE Pirbright INSTITUTE

LABORATORY RESULTS REPORT RE-REPORT

Lab Reference Batch Number: R2/17 (2)

Date Received: 13/07/2017 **Country of Origin:** ETHIOPIA

Sender:
Dr Nick Nwankpa, African Union Headquarters
P.O. Box 3243 | Roosvelt Street (Old Airport Area) | W21K19 | Addis Ababa, Ethiopia
Tel: (251) 11 551 77 00 | Fax:(251) 11 551 78 44, EMAIL - aupanvac@africa-union.org,
EMAIL - nicknwankpa@gmail.com

P. DES P. R./RINDERPEST

LABORATORY RESULTS REPORT RE-REPORT

Lab Ref: R2/17 (2) **Report Date:** 23/08/2018

Date Received: 13/07/2017 **Country of Origin:** ETHIOPIA **Date Tests Completed:** 23/08/2018

Tests Requested And Method Followed:

BVD real-time PCR, Mycoplasma real-time PCR, RPV virus titration SOPs - NVR-SOP-50

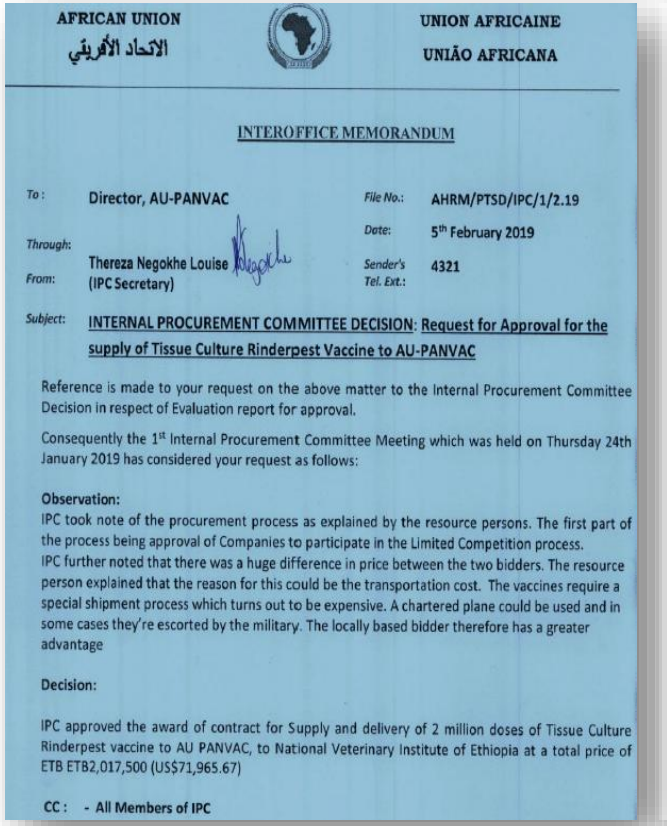
Sample Number	Animal Id	Other Details	BVD	Myco	RP titration	Final Result
R2/17-001	Bovipestovax BP GAROUA, CAMEROUN	100 DOSES date 2004, VACCINE	NEG	NEG	POS	10^3.63TCID 50/ml
R2/17-002	NVI, Rinderpest vaccine	3-09 100 DOSES, VACCINE	NEG	NEG	POS	10^5.00 TCID50/ml
R2/17-003	Rinderpest Vaccine Seed Rbok BK95 vero02	02/01/97, VACCINE	NEG	NEG	POS	10^3.37 TCID50/ml
R2/17-004	Rinderpest Vaccine Seed Rbok BK92 vero05	05/11/94, VACCINE	NEG	NEG	POS	10^5.23 TCID50/ml
R2/17-005	RBOK/BK95 VERO1, PANVAC	PAN-R001 Nov 1994, VACCINE	NEG	NEG	POS	10^5.00 TCID50/ml
R2/17-006	RBOK/BK92 VERO5, PANVAC	PAN-R001 Nov 1994, VACCINE	NEG	NEG	POS	10^5.27 TCID50/ml





Production of New RP Vaccine Stock

- **Feb. 2019:** AUC awarded to NVI (Ethiopia) the production of **2 Million RP Vaccine Doses**
- **October 2022:** Inspection of NVI facility
- **November 2023:** Exceptional authorisation to **NVI**, for production of a New RP Vaccine batches to **replenish AU the RP vaccine reserve**



AFRICAN UNION
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INTEROFFICE MEMORANDUM

To: Director, AU-PANVAC
File No.: AHRM/PTSD/IPC/1/2.19
Through:
Date: 5th February 2019
From: Thereza Negokhe Louise (IPC Secretary)
Sender's Tel. Ext.: 4321

Subject: INTERNAL PROCUREMENT COMMITTEE DECISION: Request for Approval for the supply of Tissue Culture Rinderpest Vaccine to AU-PANVAC

Reference is made to your request on the above matter to the Internal Procurement Committee Decision in respect of Evaluation report for approval.

Consequently the 1st Internal Procurement Committee Meeting which was held on Thursday 24th January 2019 has considered your request as follows:

Observation:
IPC took note of the procurement process as explained by the resource persons. The first part of the process being approval of Companies to participate in the Limited Competition process.
IPC further noted that there was a huge difference in price between the two bidders. The resource person explained that the reason for this could be the transportation cost. The vaccines require a special shipment process which turns out to be expensive. A chartered plane could be used and in some cases they're escorted by the military. The locally based bidder therefore has a greater advantage

Decision:

IPC approved the award of contract for Supply and delivery of 2 million doses of Tissue Culture Rinderpest vaccine to AU PANVAC, to National Veterinary Institute of Ethiopia at a total price of ETB ETB2,017,500 (US$71,965.67)

CC: - All Members of IPC



GF-TADs
GLOBAL FRAMEWORK FOR THE PROGRESSIVE CONTROL OF TRANSBOUNDARY ANIMAL DISEASES

Rome, Paris, 10 November 2023

Dear Dr Tefera,

The Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (WOAH) present their greetings and refer to previous communications between the African Union (AU), National Veterinary Institute (NVI), FAO and WOAH, specifically the letter from AU to FAO and WOAH on 19 March 2019, the letter from NVI to FAO and WOAH on 8 April 2019, and the letter from FAO and WOAH to NVI on 17 September 2019 and 5 March 2023.

The FAO-WOAH Rinderpest Joint Advisory Committee (the Committee) has reviewed the proof of implementation of the corrective actions, listed in the report of the site inspection to your facility which took place on 16-21 October 2022.

We are pleased to inform you that the Committee during their virtual consultations held in August and September 2023, recommended that FAO and WOAH authorised NVI to exceptionally manufacture rinderpest vaccine (Plowright/RBOK vaccine) to replenish the vaccine reserve at the African Union – Pan African Veterinary Vaccine Centre (AU-PANVAC), noting that the vaccine seed will be shipped from the FAO vaccine seed bank: Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), France, to AU-PANVAC. We remind you that in the post-eradication era safety and efficacy tests can no longer be done in live animals and a strict production process by AU-PANVAC, a thorough independent review of the full batch release dossier and the batch quality controlled at AU-PANVAC.

We kindly ask you to liaise with the FAO-WOAH Rinderpest Secretariat at rinderpest.secretariat@fao.org and rinderpest@woah.org to coordinate the shipment of vaccine seed in accordance with your availability to start the production campaign.

Thank you for supporting FAO and WOAH's mission to keep the world free from rinderpest.

Yours sincerely,

Dr Thanawat Tiensin
Director
Animal Production and Health Division
Food and Agriculture Organization of the United Nations

Dr Monique Eloit
Director General
World Organisation for Animal Health

Dr Takele Abayneh Tefera Director General
National Veterinary Institute Bishoftu/Debre-Zeit
Ethiopia

CC:
AU-PANVAC: S. C. Bodjo
FAO: K. Sumption, M. J. Arshed, K. Sudo, FAO Regional Office, FAO Subregional Office, FAOR
WOAH: M. Arroyo, K. Hamilton, M. Marrana, WOAH Delegate, RR Africa, SRR Eastern Africa

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World Organisation for Animal Health
African Union



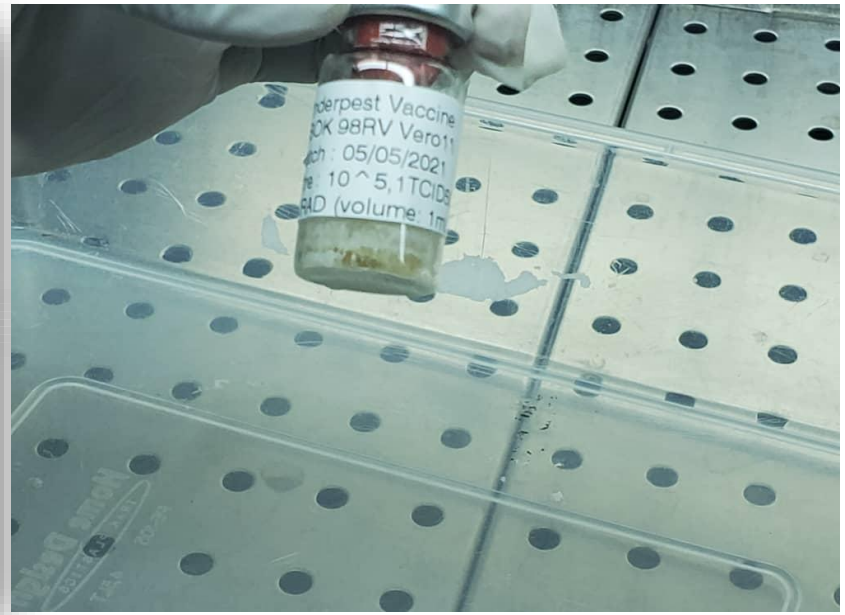


Testing Raw Materials for RP Vaccine Production

- Vero cells (ECACC): Tested and transferred to NVI for RP vaccine production
- Cell culture Media, Fetal Calf Serum (FCS) and all other solutions
- RBOK Vaccine Seed supplied by CIRAD: Received on May 21, 2024







Sterility Failed with tests conducted at AU-PANVAC BSL-3 (subsequently confirmed by CIRAD)



Request to Use RP RBOK Vaccine Strain from AU-PANVAC Repository

- **AU-PANVAC requested WOAH/FAO for authorization to test and use RP vaccine seed from PANVAC Repository**

- **6 January 2025: Joint letter FAO & WOAH**

  Approval to conduct quality control testing on RBOK vaccine seed from AUPANVAC Repository to identify suitable candidate(s) for vaccine production at NVI, replacing the CIRAD vaccine seed.



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GLOBAL FRAMEWORK FOR THE PROGRESSIVE CONTROL OF TRANSBOUNDARY ANIMAL DISEASES

Food and Agriculture Organization of the United Nations
World Organisation for Animal Health

Dear Dr Bodjo,

Rome, Paris, 6 January 2025

We refer to the letter from FAO and WOAH to National Veterinary Institute (NVI) on 10 November 2023 for authorising NVI to exceptionally manufacture rinderpest vaccine (Plowright/RBOK vaccine) to replenish the vaccine reserve at the African Union – Pan African Veterinary Vaccine Centre (AU-PANVAC). It was agreed that the vaccine production seed virus at the FAO vaccine seed bank at Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), France, would be shipped to NVI for vaccine production, with AU-PANVAC involved as an intermediary.

As we were notified that the seed virus was shown to be contaminated, AU-PANVAC was granted the immediate approval to conduct quality control testing on the archived RBOK vaccine seed stock[1] to identify suitable candidates for vaccine production at NVI, replacing the CIRAD vaccine seed.

It was also agreed that a representative sample of the final vaccine batch(es) is sent to CIRAD for further testing, including full genome sequencing. The final test report should be sent to the FAO-WOAH Rinderpest Secretariat.

Should you have any queries, please do not hesitate to contact the FAO-WOAH Rinderpest Secretariat: rinderpest-secretariat@fao.org and rinderpest@woah.org.

Thank you for supporting FAO and WOAH in keeping the world free from rinderpest.

Yours sincerely,

Dr Thanawat Tiensin
Assistant Director General/Director
Animal Production and Health Division
Food and Agriculture Organization of the United Nations

Dr Emmanuelle Soubeyran
Director General
World Organisation for Animal Health

Dr Sanne Charles Bodjo
AG Director
African Union Pan African Veterinary Vaccine Center
Debre Zeit, Ethiopia



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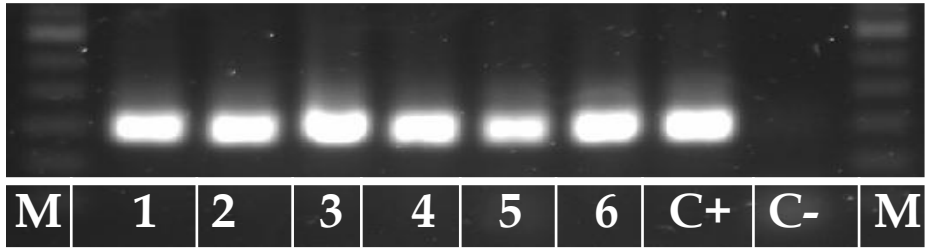
QC of RP vaccine seed from PANVAC Repository

❑ RPV identity: Confirmed

- 6 RP RBOK vaccine seed batches from AU-PANVAC repository (samples number 1 to 6) and the seed received from CIRAD (C+) were tested.
- The nucleic acid extraction was performed using the RNeasy Mini Kit (Qiagen) and PCR was performed using primers B12 & B2 for amplification of 296bp of RPV N gene [Couacy-Chyman et al, 2006; Kwiatek et al., 2007]
- Expected fragment of 296pb by PCR



❑ Freedom from bacterial, fungal and extra-genous agents

- No bacterial or fungal
- Freedom from extra-genous agents: Mycoplasma, BVD, RVF, PPRV, Camel Pox, Capripoxviruses, Blue tongue and FMDV



QC of RP vaccine seed from PANVAC Repository…

❑ RP RBOK Vaccine Seed titre

S/N	AU-PANVAC Reference Number	Seed Origin	Produced by	Production Year	Passage Level	Titer (TCID 50)/vial
1	P312	APHIS,FADDL	PANVAC	05/11/1994	BK 92 / VERO 5	$10^{5.9}$
2	**P313**	**APHIS,FADDL**	**PANVAC**	**11/1994**	**BK 92 / VERO 5**	$10^{6.3}$
3	P314	Pirbright, UK	PANVAC	11/1994	BK 95 / VERO 1	$10^{6.0}$
4	P315	Pirbright, UK	Pirbright,UK	05/1985	BK 95	$10^{4.4}$

All RPV Vaccine seed batches retained GOOD TITER





QC of RP vaccine seed from PANVAC Repository…

- **Full genome sequencing on AU PANVAC RP vaccine seed** (performed by CIRAD)

		CIRAD RBOK strain MN632618		PANVAC 312 RPV seed RBOK BK92 + vero5				PANVAC 313 RPV seed RBOK BK92 + vero5				PANVAC 314 RPV seed RBOK BK92 + vero1			
Genome coverage (%)				98.7				98.9				98.0			
Mean depth (Nbr reads)				1028				871				153			
Gene	Posit Bp	AA	Base	AA	Base	%	Nbr reads	AA	Base	%	Nbr reads	AA	Base	%	Nbr reads
F	5719	D	G	D	G	75	503	D	G	74	415	N	A	85	87
F	5795	V	T	A	C	95	815	A	C	95	664	A	C	89	108
H	7788	P	C	P	C	76	878	P	C	72	603	L	T	96	174
H	7995	K	A	K	A	77	800	K	A	74	569	I	T	94	160
H	8897	R	A	R	A	81	875	R	A	78	683	R	C	87	145
L	12857	Y	T	Y	T	68	1100	Y	T	72	935	H	C	91	203

- The PANVAC P312 & P313 are identical and show **one nucleotide difference** with the CIRAD RBOK sequence (MN632618).
- The PANVAC P314 shows **Six (6) nucleotide differences** from the CIRAD RBOK sequence.

- **The mutations observed were considered NOT to be involved in the virulence**

3 vials of RP Seed (P313) transferred to NVI



Technical Assistance Provided to NVI

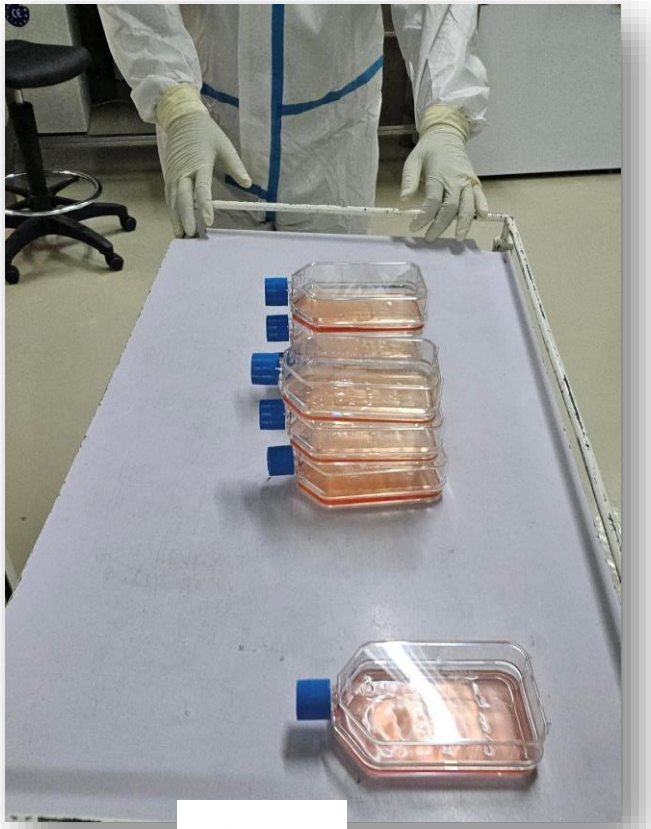
- **Induction of staff involved in RPV production:**
  - Each staff sign a commitment to comply to all SOPs associated with RPV production and adhere to safety and biosecurity protocols.
  - In light of the potential risks associated with this work, **staff are committed to avoid any contact with susceptible animals** (including domestic and wild species) for a period of at least one month following the last handling of the rinderpest vaccine strain..
- **Support Cleaning, Decontamination and Validation of vaccine production laboratory equipment:** biosafety cabinets, incubators, fridges, freezers, etc.



RP Vaccine Production at NVI

Production realized by NVI staff was under the supervision of AU-PANVAC.

- ❑ 2 lots of working seeds
- ❑ 2 lots of bulk antigen produced





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Africa

African Union





Summary of RP Vaccine Batches Produced

- NVI successfully produced **3 batches of RP vaccine** (RP 02/2025, RP 03/2025, and RP 04/2025) with a total of **2,94 Million doses**.

Batches	AU-PANVAC Reference Number	Vials received	Number of doses/vial	Total doses	Titer/dose ($TCID_{50}$)
02/2025	P035/0120/01/25	12,032	100	1,203,200	$10^{4.6}$ $TCID_{50}$
04/2025	P491/0120/03/25	8,240	100	824,000	$10^{3.4}$ $TCID_{50}$
03/2025	P492/0120/04/25	9,140	100	914,000	$10^{3.2}$ $TCID_{50}$
Total		**29,412**	**100**	**2,941,200**	**-**

- AU-PANVAC is exploring funding opportunities to purchase the extra RP vaccine **0.94 million doses**



Hand-over of the 3 RP vaccine batches to AU-PANVAC

- **Hand-over of the 3 RP vaccine batches to AU-PANVAC in Nov 2025:** reinforce the continent's capacity for emergency preparedness on RP.





- **Acknowledge of NVI-Ethiopia's commitment for RP vaccine production**





Geographical Scope of Shipments

- **The activation and deployment of RP vaccines will require coordinated action among the relevant stakeholders :**
  - The affected country's Veterinary Authority
  - The joint FAO-WOAH Rinderpest Secretariat
  - Designated Rinderpest Holding Facilities Category B (RHF-B) holding the vaccine reserves.

- **Deployment of AU RP Vaccine outside of Africa:**

  Will require an **Agreement between AU & joint FAO-WOAH Rinderpest Secretariat** for operational activation of the rinderpest vaccine reserve at AU-PANVAC



AU-PANVAC New Facility Complex



- Fully supported by **US - DTRA**

- Enhance Biosafety and Biosecurity measures
- Expand Laboratory operation Training & capacity

- Groundbreaking Ceremony held on **21st Feb. 2024** & presided by H.E Excellency Moussa Faki Mahamat, Chairperson of AUC



African Union — Pan African Veterinary Vaccine Centre AU-PANVAC

AU-PANVAC New Facility Complex

- Commencement of Construction work start in March 2025





- Construction is progressing well, and completion expected in 2028

High-level Visit to the New Lab Project

The construction Project attracted numerous high-level visits to AU-PANVAC:





H.E. Moses Vilakati, the AU Commissioner for Agriculture, Rural Development, Blue Economy, and Sustainable Environment (ARBE), Walter Parrs- Chargé d'affaires US Mission to AUC and US-DTRA Team (July 31, 2025)

High-level Visit to the New Lab Project









Visit to AU-PANVAC of Ambassador Hirut Zemene, Ethiopia's Permanent Representative to the AU (12 November 2025)

High-level Visit to the New Lab Project…





❑ **Ambassador Ervin J. Massinga, the US Embassy** to the Federal Democratic Republic of Ethiopia, August 07, 2025





❑ **Ambassador Stephanie S. Sullivan, US Mission** to AU, December 05, 2025.





AU-PANVAC !

ADDING VALUE TO ANIMAL HEALTH AND HUMAN LIVES!!



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