

NATIONAL VETERINARY INSTITUTE



PRODUCT CATALOGUE

CENTER OF EXCELLENCE IN VETERINARY VACCINE PRODUCTION

AUGUST 2016

53 YEARS EXPERIENCE IN VETERINARY VACCINE PRODUCTION



Table of Content

1) History of NVI	1
2) Vaccines against Ruminant and Equine Diseases	3
2.1. Anthrax	3
2.2. Bovine Pasteurellosis	4
2.3. Ovine Pasteurellosis	5
2.4. Blackleg	6
2.5. Contagious Bovine Pleuropneumonia (CBPP)	7
2.6. Contagious Caprine Pleuropneumonia (CCPP)	10
2.7. Peste des Petits Ruminants (PPR)	11
2.8. Sheep and Goat Pox (SGP)	12
2.9. Lumpy Skin Disease (LSD)	13
2.10. Foot and Mouth Disease (FMD)	14
2.11. African Horse Sickness (AHS)	15
3) Vaccines against Poultry Diseases	20
3.1. Newcastle HB1	20
3.2. Newcastle Lasota	21
3.3. Newcastle Thermostable	24
3.4. Newcastle - Oil Emulsion - Inactivated	26
3.5. Fowl Pox	27
3.6. Fowl Typhoid	28
3.7. Infectious Bursal Disease (Gumboro)	29
3.8. Fowl Cholera	32
4) Vaccines against Camel Disease	33
4.1. Camel Pox	33
5) Vaccine against Dog Disease	34
5.1. Rabies	34
6) Other services	35
6.1. Disease diagnosis	35
6.2. Diagnostic kit supply	35
6.3. Feed analysis	35
6.4. Laboratory technique training	35

History of NVI

National Veterinary Institute (NVI) was established at Debrezeit/Bishoftu in 1964 with 40 persons under the Ministry of Agriculture, getting technical assistance from the French Government through the French Veterinary Mission in Ethiopia. At that time, the real value of the NVI for the welfare of the national animal resources and for the African continent is not well known by most of the people. Today it is one of the most well known veterinary vaccine producing institutions in Africa with its multidisciplinary professional staff having long years of experience.

The infrastructure of NVI is well developed and playing an important role in the attraction of international institution, the Pan African Veterinary Vaccine Control Center (PANVAC) which is under the African Union. Moreover, it has been given the responsibility to produce and supply enough vaccines for PTA (Preferential Trade Area) countries of Eastern, Western and Southern Africa. The institute has reached the level of using state of the art equipments and materials for biological production and vaccine related research.

Since the creation of the institute, several million doses of different vaccines have been produced and dispatched to protect millions of animals from various infectious diseases. According to the evaluation performed in 1983 by IEMVT (Institut D'Elvage et de Medicine Veterinaire de pays Tropicaux) on the production potential of African laboratories, NVI was graded as the biggest vaccine producing center of all veterinary laboratories in tropical Africa.

Moreover the institute won the International Gold Mercury Award in 1982 in recognition of its positive contribution to national development at the 22nd conference for peace and cooperation.

The National Veterinary Institute was organized as public enterprise by the Proclamation No. 25/1992 and Council of Ministers Regulations No. 52/1999.

The institute is:

1. certified for ISO 9001 - 2008 Quality Management System (QMS) by an international accrediting company ALCUMUS/ISOQAR and it is dedicated for manufacturing and marketing of veterinary vaccines as its primary mandate.
2. certified ISO/IEC 17025:2005 In Research and Development Laboratory for the following tests

3ABC ELISA for FMD

C-ELISA For CBPP & CCPP

RBPT FOR BRUCELLOSIS and

ELISA Test for PPR

by:- Ethiopian National Accreditation Office /ENAO/

The institute possesses more than 50 years of experience in the production and distribution of veterinary biological products for both domestic and international markets (to more than 26 African countries). The vaccine production capacity of the institute in the early years was about 4 million doses per year, but currently it has a capacity of producing more than 200,000,000 doses. The institute has total surface area of 40 hectare of land. NVI actively takes part in problem identification, and look for solution by developing and promoting research products to alleviate livestock diseases related problem and at the same time to protect animal welfare and the environment.

Ordinarily the institute works harmoniously with the national veterinary service delivering institutions being as a stakeholder of the discipline. The institute has been working in collaboration with the national and international institutes on vaccine development and improvement, vaccine production, pathogen identification and characterization, and other related technology transfer activities.



NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for ANTHRAX VACCINE

Issue No.2



DESCRIPTION

It is a freeze - dried live bacterial vaccine produced using 34 F₂ strain of *Bacillus anthracis* saponin adjuvated. Spores freeze - dried with saponin and 4% skimmed milk as a stabilizer. Each field dose contains 10⁷ viable spores.

PRESENTATION

The vaccine is available in 5ml or 20 ml vials of 100 doses.

STORAGE

Store vaccines in a refrigerator at +4⁰ C to -20⁰ C

RECONSTITUTION

Reconstitute in 100 ml of sterile Saline water.

DOSAGE AND ADMINISTRATION

Vaccinations should be carried out every year before the anthrax out break season. Animals should be above 3 months old.

Cattle - inject 1 ml subcutaneously in the loose skin of the neck.

Sheep and Goats - inject 0.5 ml subcutaneously in the loose skin of the neck or inner face of thigh. The latter is preferable for goats.

Horse - Inject 1 ml subcutaneously at the neck.

POST - VACCINATION REACTION

Benign reaction, usually in the form of swelling at the injection site. It normally disappears in 2-3 days.

PRECAUTIONS

Vaccinate healthy animals only.

Subcutaneous injections only, no intramuscular injections.

The vaccine is not recommended for use in pregnant animals, nor in animals destined for slaughter within 2 weeks of vaccination.

Antibiotics should not be given for at least 10 days before and after vaccination

IMMUNITY

Develops in 10 days and lasts for one year

WARNING - FOR VETERINARY USE ONLY



NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for BOVINE PASTEURELLOSIS VACCINE or
HAEMORRHAGIC SEPTICEMIA VACCINE.

Issue No.2



DESCRIPTION

This vaccine is prepared from whole broth culture of *Pasteurella multocida* type B (20 billion germs/ml), killed by formalin (0.5% final concentration) and precipitated by 1% Aluminium potassium sulphate (final concentration).

PRESENTATION

The vaccine is available in plastic vials of 100 ml for 50 doses.

STORAGE

Store At +4°C

Shelf life 1 year.

Avoid light and heat contact.

DOSAGE AND ADMINISTRATION

- For best results vaccinate in the earliest convenient time according to regional conditions (at least 21 days before the Hemorrhagic Septicemia season).
- Shake vigorously before use.
- Cattle (including calves) - inject 2 ml subcutaneously on the neck area.

IMMUNITY

Immunity appears in 10 days after vaccination and lasts for 6 to 8 months

Revaccination is advisable after 6 months.

PRECAUTIONS

Anaphylactic (shock - allergy) reactions may appear occasionally after several vaccination. In case of such reaction administer anti - histamin drugs immediately. Vaccinate apparently healthy animals only.

WARNING - FOR VETERINARY USE ONLY

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE



NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for OVINE PASTEURELLOSIS VACCINE

Issue No.2



DESCRIPTION

This product contains whole broth culture of *Pasteurella multocida* type A (10 billion germs/ml), killed by formalin (0.5% final concentration) and precipitated by 1% Aluminium potassium sulphate (final concentration).

PRESENTATION

The vaccine is available in plastic vials of 50 ml for 50 doses.

STORAGE

Store At +4°C

Shelf life 1 year.

Avoid light and heat contact.

DOSAGE AND ADMINISTRATION

- Vaccinate 1 ml subcutaneously for Sheep & Goat
- Shake vigorously before use.
- For best results vaccinate according to regional conditions, and at least 3 weeks before the rainy season.

IMMUNITY AND DURATION

- Immunity appears in 10 days after vaccination and lasts for 6 to 8 months.
- Revaccination is advisable after 6 months.

PRECAUTIONS

Vaccinate Apparently healthy animals only.

WARNING - FOR VETERINARY USE ONLY

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE



NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for BLACK LEG VACCINE

Issue No.2



DESCRIPTION

This product contains whole broth culture suspension of *Clostridium chauvoei* (local isolate) killed by formalin 0.7% (final concentration) and precipitated by 1% Aluminium potassium sulphate (final concentration).

PRESENTATION

It is a liquid vaccine available in 100 ml vial for 50 doses.

STORAGE

Store At +4°C

Shelf life 2 years.

Avoid light and heat contact.

DOSAGE AND ADMINISTRATION

- Cattle (including calves) 2 ml subcutaneously on the neck region.
- Shake vigorously before use.

IMMUNITY

- Immunity develops in 10 days after vaccination.
- Duration: one year.

PRECAUTIONS

Vaccinate only apparently healthy animals.

WARNING - FOR VETERINARY USE ONLY

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE

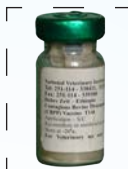


NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for CONTAGIOUS BOVINE
PLEUROPNEUMONIA (CBPP) VACCINE

Issue No.2



DESCRIPTION

- It is a freeze - dried live attenuated bacterial vaccine produced using T₁ 44 or T₁ SR strains of *Mycoplasma mycoides* subsp. *mycoides* Small colony (MmmSC). Each field dose contains at least 10⁷ viable *Mycoplasma* organisms.

PRESENTATION

- The vaccine is available in vials of 100 doses.

STORAGE

- At -20°C minimum for 24 months.

RECONSTITUTION OF THE VACCINE

100 ml of sterile cold saline water solution is used to reconstitute the vaccine. The reconstituted vaccine must be protected from light and heat and must be used immediately (the maximum limit is one hour when kept under cold condition).

ADMINISTRATION

Inject 1 ml of the reconstituted vaccine only subcutaneously. Vaccinate all animals above the age of 6 months.

IMMUNITY

- It develops 2 weeks post - vaccination and lasts for about 1 year.

PRECAUTIONS

A rare case of post - vaccinal reaction (mild swelling at the site of injection) can occur. If it ever happens antibiotics like Tetracycline, Oxytetracycline, Erythromycin and in severe cases Tylosine can be used.

Vaccinate only apparently healthy animals

WARNING - FOR VETERINARY USE ONLY

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE

Certificate of Registration

This is to certify that the Management System of:

National Veterinary Institute

P.O. Box 19, Hora Road, Bishoftu, Ethiopia

has been approved by Alcumus ISOQAR and is compliant with the requirements of:

ISO 9001: 2008



Certificate Number:	5849-QMS
Initial Registration Date:	8 January 2016
Expiry Date:	15 September 2018

Scope of Registration:

Development, Manufacture, Sales and Distribution of Veterinary Vaccines

Signed:

Steve Stubley, Technical Director
(on behalf of Alcumus ISOQAR)



This certificate will remain current subject to the company maintaining its system to the required standard. This will be monitored regularly by Alcumus ISOQAR. Further clarification regarding the scope of this certificate and the applicability of the relevant standards' requirement may be obtained by consulting Alcumus ISOQAR.



Alcumus ISOQAR Limited Cobra Court, 1 Blackmore Road, Stretford, Manchester
M32 0QY T: +44 (0)161 865 3699 F: +44 (0)161 865 3685

ISOQAR Limited Ethiopian Branch Bole Road, Friendship Building, 6th Floor, Office
11, Addis Ababa, Ethiopia, P. O. Box 6821 T: +251116634045

This certificate is the property of Alcumus ISOQAR and must be returned on request.



3ABC ELISA for FMD

C-ELISA For CBPP & CCPP

Rosebengalplate test /RBPT/ FOR BRUCELLOSIS

and

PPR ELISA Test

by:- Ethiopian National Accreditation Office /ENAO/



NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for CONTAGIOUS CAPRINE
PLEUROPNEUMONIA (CCPP) VACCINE

Issue No.2



DESCRIPTION

- It is an inactivated bacterial vaccine produced using F - 38 Kenyan strain of *Mycoplasma capricolum* subspecies *capripneumonia* (MCCP).
- Well grown *Mycoplasma* culture is inactivated by formalin and (0.3%) saponin which has also an adjuvant effect.
- The minimum protein content in each field dose is 0.15 mg/ml.

PRESENTATION

- The vaccine is available in 100 ml vial for 100 doses.

STORAGE

- The vaccine should be stored at +4°C

ADMINISTRATION

- Shake the vaccine before use.
- Vaccinate 1 ml/goat subcutaneously (thoracic wall area is advisable)

POST - VACCINATION REACTION

A slight oedematous reaction is induced by saponin which normally disappears with in 48 hours.

IMMUNITY

- CCPP vaccine confers immunity for 1year.
- Revaccination is advisable after 1year.

PRECAUTIONS

Vaccinate only apparently healthy animals.

WARNING - FOR VETERINARY USE ONLY

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE



NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for PESTE DES PETITS RUMINANTS (PPR)
VACCINE

Issue No.2



DESCRIPTION

- Lyophilized virus vaccine PPR virus strain cultured on VERO - cells
- Freeze - dried vaccine with a minimum titer of 2.5 TCID₅₀ per field dose.

PRESENTATION

- The vaccine is available in 5ml or 20ml vials of 100 doses.

RECONSTITUTION AND DILUTION OF VACCINE

- In 100 ml of cool and sterile saline water.

DOSAGE AND ROUTE OF ADMINISTRATION

- 1 ml of diluted vaccine injected subcutaneously is recommended for all Goats and Sheep. Immunization above 6 months of age.

STORAGE

Vaccine should be stored at a temperature of -20°C

VACCINATION PROGRAM

Annual vaccination is recommended for the young animals during consecutive years.

IMMUNITY

Develops eight days after vaccination and lasts for 3 years.

PRECAUTIONS

Vaccinate only apparently healthy animals.

WARNING - FOR VETERINARY USE ONLY

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE



NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for SHEEP AND GOAT POX VACCINE

Issue No.2



DESCRIPTION

- Live freeze dried Capripox virus strain cultured on VERO - cells
- Freeze dried (Lyophilized) with a minimum titer of 2.5 TCID₅₀ per field dose.

PRESENTATION

- The vaccine is available in 5ml or 20ml vial of 100 doses.

STORAGE

- Vaccine should be stored at a temperature of -20°C

RECONSTITUTION AND DILUTION OF VACCINE

In 100 ml of cool and sterile saline water.

DOSAGE AND ROUTE OF ADMINISTRATION

- 1 ml of diluted vaccine injected subcutaneously on the inner face of the thigh.

IMMUNITY

- Develops eight days after vaccination and may last for two years.

PRECAUTIONS

Vaccinate only apparently healthy animals.

WARNING - FOR VETERINARY USE ONLY

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE

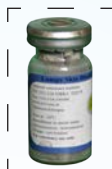


NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for LUMPY SKIN DISEASE (LSD) VACCINE

Issue No.2



DESCRIPTION

- Live attenuated vaccine containing Capripox virus strain cultured on VERO - cells
- Freeze dried (Lyophilized) vaccine with a minimum titer of 3 TCID₅₀ per field dose.

PRESENTATION

- The vaccine is available in 5ml or 20ml vial of 100 doses.

STORAGE

Vaccine should be stored at a temperature of -20°C

RECONSTITUTION AND DILUTION OF VACCINE

In 100 ml of cool and sterile saline water.

DOSAGE AND ROUTE OF ADMINISTRATION

- 1 ml of diluted vaccine injected subcutaneously on the inner face of the thigh.

IMMUNITY

Eight days after vaccination and may last for two years.

PRECAUTIONS

Vaccinate only apparently healthy animals.

WARNING - FOR VETERINARY USE ONLY

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE

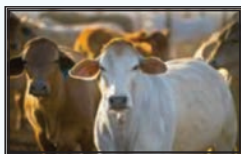


NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for FOOT AND MOUTH DISEASE (FMD)
VACCINE

Issue No.2



DESCRIPTION

- Trivalent vaccine containing O, A, SAT 2 serotype propagated on monolayer BHK21 cell culture
- The virus is absorbed in to Aluminium Hydroxide gel $[Al(OH)_3]$ concentrated, inactivated with 0.3% of formaldehyde and adjuvanted with saponin.

PRESENTATION

- The vaccine is available in 50ml vial of 10 doses or 100 ml vial of 25 doses.

STORAGE

- Vaccine should be stored at a temperature of $+4^{\circ}C$. Don't freeze the vaccine.

DOSAGE AND ROUTE OF ADMINISTRATION

- Shake bottle before use.
- Inject 4 ml per cattle subcutaneously preferably in dewlap region.
- After puncture of the stopper the whole bottle of vaccine must be used within 24 hours.

VACCINATION PROGRAM

- First vaccination - two injections at 6 months of interval
- Revaccination - one year after the second injection and every year
- Do not vaccinate the cattle under 6 months of age.
- Since the season of outbreaks in Ethiopia is generally between November and January, it is advisable to vaccinate animals before this period so as to obtain sufficient level of antibodies when the risk of outbreak is maximal.

POST - VACCINATION REACTION

- Swelling may occur at the place of inoculation and persist for a few weeks.

IMMUNITY

- Develops 2 weeks after vaccination and may last for six months.

PRECAUTIONS

Vaccinate only apparently healthy animals.

WARNING - FOR VETERINARY USE ONLY

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE



NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for AFRICAN HORSE SICKNESS (AHS)
VACCINE

Issue No.2



DESCRIPTION

- Monovalent/multivalent vaccine containing serotype 2, 4, 9 cultured on VERO cells
- Freeze - dried (Lyophilized) vaccine with a minimum titer of 2.5TCID₅₀ per field dose

PRESENTATION

- The vaccine is available in vial of 50 doses.

STORAGE

Vaccine should be stored at a temperature of -20°C

RECONSTITUTION AND DILUTION OF VACCINE

In 50 ml of cool and sterile saline water.

DOSAGE AND ROUTE OF ADMINISTRATION

- 1 ml of diluted vaccine injected subcutaneously is recommended for horses, donkeys or mules regardless of size or age.
- Foals born from immunized mares must not be vaccinated before six months.

POST VACCINAL REACTION

- Generally benign hyperthermia can occur at 48 hours, or between the seventh and fourteenth day after vaccination.
- The animals should be able to rest during the fifteen days after vaccination.

IMMUNITY

Develops two weeks after vaccination and may last for one year.

PRECAUTIONS

Vaccinate only apparently healthy animals.

WARNING - FOR VETERINARY USE ONLY

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE

GMP



Veterinary Drug and Animal Feed Administration and Control Authority
Certificate of Good Manufacturing Practice (GMP)

**This certificate conforms to the format recommended by the World Health Organization
(General instruction and explanatory notes attached)**

Certificate No: **GMP /002/15**

On the basis of the inspection carried out on 18/06/2015 we certify that the site indicated on this certificate complies with Good Manufacturing Practices for the dosage forms, categories and scope listed in Table 1.

1. Name and address of site:

National Veterinary Institute, Deber-zeit, Ethiopia

2. Manufacturer's license number:

04/337/55870/2004

3. Table 1:

Pharmaceutical products ¹ Dosage form (s)	Category	Scope
Injectable	Vaccines	Production, packaging, quality control of veterinary vaccines

The responsibility for the quality of the individual batches of the pharmaceutical products manufactured through this process lies with the manufacturer.

This certificate remains valid until **17/06/2016**. It becomes invalid if the activities and/or categories certified herewith are changed or if the site is no longer considered to be in compliance with GMP.

Signature of the authorized person

Stamp and date



Zelalem G/Tsadik Anebo (Dr.)
Director, Veterinary Drug Quality
Standard Registration & Certification
Directorate

Kirkos kiflketma, Woroda 17/18, Kazanchis,
Addis Ababa, Ethiopia, '0115524045
P.O. Box 31303 Fax: 0115506693



የኢትዮጵያ ብሔራዊ አክራሪነት ጽ/ቤት
ETHIOPIAN NATIONAL ACCREDITATION OFFICE

ETHIOPIAN NATIONAL ACCREDITATION OFFICE

ACCREDITATION CERTIFICATE

**National Veterinary Institute
Oromia Regional State
Bishoftu
Ethiopia**

**Facility Accreditation No: T0008
Issue No: 03**

Is accredited by the Ethiopian National Accreditation Office (ENAO) to perform tests in accordance with the attached *Scope of Accreditation* in the field of


Veterinary, Serology Testing

The facility is accredited in accordance with the requirements of ISO/IEC 17025:2005, *General requirements for the competence of testing and calibration laboratories*. The accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system. While this certificate remains valid, the Accredited Facility named above is authorized to use the relevant ENAO accreditation symbol to issue test reports and/or certificates.

Effective Date: 7 /12/2015

Certificate Expires: 30/09/2018




Ato Araya Fesseha
Director General
Ethiopian National Accreditation Office



Facility Accreditation No: T0008


Araya Fesseha
Director General

State-of-the-art Lyophilizer Machine with a capacity of 22,000 5ml vials



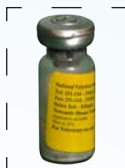


NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for LIVE NEWCASTLE DISEASE VACCINE

Issue No.2



DESCRIPTION

- Live virus vaccine Hichner B1/Lasota strain cultured on Embryonated SPF eggs
- Freeze - dried (Lyophilized) vaccine with a minimum titer of 10^7 ELD₅₀

STORAGE

Vaccine should be stored at a temperature of -20°C

RECONSTITUTION AND DILUTION OF VACCINE

- Reconstitute according to the number of chicken to be vaccinated and dilute the required amount of vaccine.
- The water must be free from antiseptics (Well or spring water).
- The chicken will not be given drinking water the evening before vaccination day.

DOSAGE AND ROUTE OF ADMINISTRATION

Lasota and Hichner B₁

OCULAR ROUTE - Use an eye dropper. To calculate the volume of water which should be added to dilute the number of doses of the vaccine per vial follow the instructions below:

Measure 1 ml of water to the dropper

Count the number of drops in this 1 ml of water

Calculate the volume of diluent required to dilute the number of doses of the vaccine per vial with the eye - dropper in use:

$$\text{Volume of diluent (ml)} = \frac{\text{No. of doses of vaccine per vial}}{\text{No. of drops formed per ml}}$$

Example: How much diluent should be added to a vial containing 250 doses of ND vaccine given that 1 ml of water in the eye - dropper yielded 50 drops?

$$\text{Volume of diluent (ml)} = \frac{250 \text{ doses per vial}}{50 \text{ drops per ml}} \\ \underline{5 \text{ ml per vial}}$$

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE

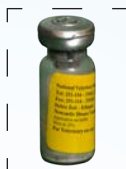


NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for LIVE NEWCASTLE DISEASE VACCINE

Issue No.2



ORAL DRENCH - Dissolve the 200 doses in 200 ml, the 100 doses in 100 ml and the 50 doses in 50 ml. administer by oral drench 1 ml of dissolved vaccine squirting into the beak of each bird using a clean plastic syringe.

DRINKING WATER - the quantity of water generally required per bird for the drinking water vaccination is as follows:

for 10 - 14 day - old birds ----- 10-15 ml

for 3 - 8 weeks - old birds ----- 20-30 ml

for other birds ----- 40 ml

To calculate the volume of water required to dilute the vaccine, multiply the number of doses of the vaccine per vial by the amount of ml required per bird according to the above table.

Example: to dilute 500 doses of vaccine for 8 week - old birds multiply 500 by 30 that means you need 15 liters of water to dilute the 500 doses of vaccine per vial.

VACCINATION PROGRAM

AGE AT VACCINATION

- The parent flocks vaccinated but not infected, so their progeny could respond to vaccination from 14 days.
- The parent flocks recently been infected with virulent virus; in this flock, levels of antibody known to interfere with vaccination until 42 days. In situation of this kind, approximately, 60% of birds will respond at about 21 days, while the remaining 40% are refractory until approximately 42 days.
- While vaccination at one day of age may give active protection to chicks with the lowest levels of antibody, vaccination at this age may be largely ineffective in the majority of chicks and hence should be regarded as a preliminary step rather than a recognized protective procedure.

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE

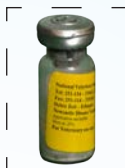


NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for LIVE NEWCASTLE DISEASE VACCINE

Issue No.2



For example, in flocks of chicks having high level of maternal antibody, it has been found that approx. 60% of the chicks will actively respond to vaccination at 18 - 21 days of age, while at 14 days of age the percentage of chicks that will respond may be under 40%.

REVACCINATION

In the case of broilers in low risk areas, revaccination at 14 - 21 days of age will prove adequate protection.

In high risk areas application of vaccine at this age only may be inadequate. Therefore, it must be necessary to revaccinate at 42 days of age using the Lasota vaccine by the drinking water.

In the case of layers, further boosting of immunity is necessary after 10 weeks of age. This is to protect the birds from the disease during the remainder of the growing period, and to provide at point of lay an immune level that will effectively protect the pullets with the minimum of revaccination during the laying period.

If the time interval between the primary and secondary vaccination is <21 days, the antibody produced by the first dose of vaccine is more likely to interfere with the multiplication of the second dose of virus. An interval during which no further vaccine is given should be allowed until the final dose of vaccine is administered about two weeks before the birds come into egg production.

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE

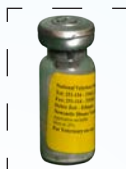


NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for LIVE NEWCASTLE DISEASE VACCINE

Issue No.2



So we recommend applying the following vaccination program:

Day of vaccination	Type of vaccine	Route of administration
Day 7	HB1	Intraocular
Day 21	Lasota	Intraocular
Day 42	Lasota	by the drinking water
Between 10 and 12 weeks of age	Inactivated	intramuscular 0.5ml/bird
At point of egg lay	Inactivated	intramuscular 0.5ml/bird

PRECAUTION

Vaccinate only apparently healthy chickens

WARNING - FOR VETERINARY USE ONLY

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE

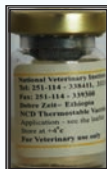


NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for NEWCASTLE DISEASE THERMOSTABLE
VACCINE

Issue No.2



DESCRIPTION

- It is a live viral vaccine produced in an embryonated Specific Pathogen Free (SPF) eggs using the relatively heat stable variant strain, developed at Queensland University - Australia.
- Each field dose contains at least log 10^7 ELD50 viral particles..

PRESENTATION

- The vaccine is available in vials of 250, 100 and 50 doses.

STORAGE

- Since thermostable minority populations are present in the relatively heat stable strain I2, the vaccine can be stored at +4°C.

ADMINISTRATION

OCULAR ROUTE - Use an eye dropper. To calculate the volume of water which should be added to dilute the number of doses of the vaccine per vial follow the instructions below:

- * Measure 1 ml of water to the dropper
- * Count the number of drops in this 1ml of water
- * Calculate the volume of diluent required to dilute the number of doses of the vaccine per vial with the eye - dropper in use:

$$\text{Volume of diluent (ml)} = \frac{\text{No. of doses of vaccine per vial}}{\text{No. of drops formed per ml}}$$

Example: How much diluent should be added to a vial containing 250 doses of ND vaccine given that 1 ml of water in the eye - dropper yielded 50 drops?

$$\begin{aligned}\text{Volume of diluent (ml)} &= \frac{250 \text{ doses per vial}}{50 \text{ drops per ml}} \\ &= 5 \text{ ml per vial}\end{aligned}$$

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE

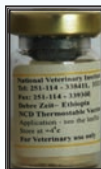


NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for NEWCASTLE DISEASE THERMOSTABLE
VACCINE

Issue No.2



ORAL DRENCH - Dissolve the 200 doses in 200 ml, the 100 doses in 100 ml and the 50 doses in 50 ml. administer by oral drench 1 ml of dissolved vaccine squirting into the beak of each bird using a clean plastic syringe.

DRINKING WATER - the quantity of water generally required per bird for the drinking water vaccination is as follows:

for 10 - 14 day - old birds ----- 10-15 ml

for 3 - 8 weeks - old birds ----- 20-30 ml

for other birds ----- 40 ml

To calculate the volume of water required to dilute the vaccine, multiply the number of doses of the vaccine per vial by the amount of ml required per bird according to the above table.

Example: to dilute 500 doses of vaccine for 8 week - old birds multiply 500 by 30 that means you need 15 liters of water to dilute the 500 doses of vaccine per vial.

VACCINATION PROGRAM

- First vaccination: Day old and Above (preferably up to 10 days)
- Second vaccination: 3 - 4 weeks.
- Third vaccination: 3 - 4 months.
- Repeat every 3 - 4 months.

PRECAUTION

- Vaccinate only apparently healthy chicken.

WARNING - FOR VETERINARY USE ONLY

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE



NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for INACTIVATED NEWCASTLE OIL
EMULSION DISEASE VACCINE

Issue No.2



DESCRIPTION

- The vaccine is prepared in embryonated eggs injected with the lentogenic strain LaSota, containing at least 10^8 EID₅₀ inactivated and suspended in light mineral oil adjuvant.
- It is selected for its long lasting immunity.

RECOMMENDATIONS FOR USE

- The inactivated type vaccine is recommended for flocks of laying and breeding birds.
- The vaccine is injected 0.5ml/bird subcutaneously at the back of the neck or intramuscularly in the breast muscle.

VACCINATION PROGRAM

- First Vaccination 10 - 12 weeks of age.
- Second Vaccination is given at point of lay.
- Best immunity is obtained when birds are vaccinated with live Newcastle vaccines prior to the application of inactivated vaccine.

STORAGE

- Store the vaccine in a refrigerator at a temperature of 4° C to 8° C until it is used.
- Before use allow the vaccine to reach at room temperature (20° C), and shake well before and during use.

WARNING

- No local post - vaccinal reaction occurs, but trace of oil may be found for some time at the site of injection.
- Accidental injection of this vaccine to the user (professional) can cause localized reaction for which physician advice should be sought at once, informing him that the vaccine is an oil emulsion.

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE



NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for FOWL POX VACCINE

Issue No.2



- It is a live freeze dried viral vaccine produced on the Chicken Fibro blast cells of embryonated specific pathogen free (SPF) eggs using modified Fowl pox virus. Each vaccine batch contains $10^{3.5}$ EID₅₀/ dose.

PRESENTATION

Each 5ml or 20ml vial contains 100 doses of freeze dried vaccine.

STORAGE

The vaccine can be stored at -20°C .

ROUTE OF ADMINISTRATION

BY WING WEB METHOD

Reconstitute the 100 dose with 2ml of sterile cold buffered solvent and vaccinate by transfixion of inner side of the wing membrane of each bird dip the stylet before vaccination into the viral suspension so that the groove is filled. Take care to touch the needle against the inside of the vial in order to remove adhering drops. The stylet is inserted from beneath through the wing web and care should be taken to push the feathers side so as to avoid damaging the blood vessels.

The wing web should be slightly stretched.

VACCINATION PROGRAM

1. Healthy environment

Vaccination from the 8th week of life with a yearly boost

2. Contaminated environment

- Vaccination from the 3rd week of life
- Booster 3 months later and then yearly

WARNING - FOR VETERINARY USE ONLY

PRECAUTION

- Vaccinate only apparently healthy chicken.

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE

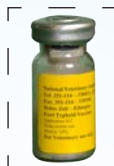


NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for FOWL TYPHOID VACCINE

Issue No.2



DESCRIPTION

- It is a live, freeze - dried vaccine against Fowl Typhoid in chickens. Each vial contains 5×10^7 CFU of *Salmonella gallinarum* strain.

PRESENTATION

The vaccine available in 5ml or 20ml vials of 100 doses

STORAGE

- The vaccine should be at -20°C for several years.

VACCINATION PROGRAM

- First vaccination should be given at 6 weeks of age followed by a booster at 12 weeks of age.
- Birds should not be vaccinated within 14 days of the start of laying period.

RECONSTITUTION AND DILUTION

In 20 ml of cool sterile distilled or saline water

RECONSTITUTION AND DILUTION

- In 20 ml of cool sterile distilled or saline water.

DOSAGE & ADMINISTRATION

- 0.2 ml of the reconstituted vaccine by subcutaneous injection into the lower part of the back of the neck.

IMMUNITY

Appears in about 10 days. Duration of the immunity after two injections is for 6 - 8 months.

PRECAUTION

Vaccinate only apparently healthy chicken

WARNING - FOR VETERINARY USE ONLY.

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE

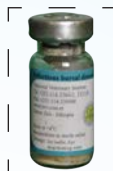


NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for INFECTIOUS BURSAL DISEASE
/GUMBORO/ VACCINE

Issue No.2



DESCRIPTION

- This vaccine contains infectious bursal disease (IBD) virus intermediate standard strain. The virus is produced in chick embryo cell culture derived from specific pathogen free (SPF) eggs, harnessed and freeze dried with suitable stabilizer. It contains Intermediate Standard live virus strain and presented in freeze dried form.

PRESENTATION

Each 5 or 20ml vial contains 100 to 400 doses of freeze dried vaccine.

STORAGE

Store vaccine in a refrigerator at $+2^{\circ}\text{C}$ - $+8^{\circ}\text{C}$.

DOSAGE FORM

- Each dose of vaccine contains live freeze dried IBD (Intermediate Standard Strain) virus of 10^3 EID_{50} .

RECONSTITUTION

Store the diluent in the refrigerator overnight to chill before use. Reconstitution of vaccine is carried out by drawing small quantity of diluent in the sterile syringe and then transferring this diluent in a freeze dried vaccine vial. Allow the pellet to dissolve completely with diluent, gently shake the vaccine vial, and then transfer it to the diluent bottle. Rinse the vaccine vial twice with the diluent a similar manner. Reconstituted vaccine should be stored on ice and used completely within one hour. Follow aseptic techniques during reconstitution.

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE



NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for INFECTIOUS BURSAL DISEASE
/GUMBORO/ VACCINE

Issue No.2



DESCRIPTION

EYE DROP METHOD: Eye drop method should be used for primary vaccination. Use reconstituted vaccine immediately.

METHOD: Held the chick with one eye turned up. Take the vaccine product in sterile syringe, using blunt needle of 15 gauges or calibrated dropper instill one drop into the eye per chick.

Ensure that the vaccine drop is completely absorbed in the eye.

DRINKING WATER METHOD:

For drinking water method, before giving the vaccine, withhold the birds from drinking water for at least two hours to allow birds to get thirsty. However, variation in this can be done depending on the season.

STORAGE

- * The waterier should be thoroughly cleaned before use.
- * Do not use any disinfectant or chlorinated water. Vaccination should always be conducted during cool Hours.
- * Use clean and cool water. Small ice blocks may be added in water to make it cool.
- * Mix reconstituted in drinking water according to following schedule:

Age of birds	Liters of water to be used					
	5000 doses	2000 doses	1000 doses	500 doses	200 doses	100 doses
14-18 days	30-40 liters	15-20 liters	8-10 liters	4-5 liters	2-3 liters	1 liters
21-28 days	50-60 liters	25-30 liters	10-12 liters	5-6 liters	3-4 liters	2 liters
35-40 days	80-90 liters	40-45 liters	15-20 liters	8-10 liters	5-6 liters	3 liters

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE



NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User manual for INFECTIOUS BURSAL DISEASE
/GUMBORO/ VACCINE

Issue No.2



CONTRAINDICATION

- This vaccine is not recommended for those birds which are clinically sick or under conditions of severe stress .

RECOMMENDED SCHEDULE OF VACCINE FOR EFFECTIVE CONTROL OF IBD:

- Chicken with low level of maternal antibodies:
 - at 1 - 2 weeks of age and second vaccination at 3 - 4 weeks of age.
- Chicken with high level of maternal antibodies:
 - at 3 - 4 weeks of age and second vaccination at 8 - 12 weeks of age.

WARNING - FOR VETERINARY USE ONLY.

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE

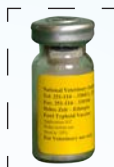


NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User Manual for FOWL CHOLERA VACCINE

Issue No.2



DESCRIPTION

The product contains whole broth culture suspension of *Pasteurella multocida* (each dose contains greater than 108 CFU prior to inactivation) inactivated by formalin (0.5% final concentration) and precipitated by 1% Aluminium potassium sulphate (final concentration).

PRESENTATION

The vaccine is available in 50ml or 100 ml vials of 100 or 200 doses.

STORAGE

The vaccine can be stored at +4° C for 1 year. The vaccine should be protected from freezing, heat and direct sunlight.

DOSAGE FORM

* Shake vaccine bottle well before and during use. Use 20 / 21 gauge needle and automatic syringe, to inject 0.5 ml of vaccine, preferably by subcutaneous route in the lower half of the neck under the loose skin at the point midway between the bird's head and base of the neck, the needle pointing away from the bird's head; or intramuscularly in the breast muscle. Vaccinate using aseptic techniques.

* Vaccinate layer/broiler breeders and replacement flocks only.

* Administer the first dose at 8 to 10 weeks age of the bird. Repeat the dose 3 to 4 weeks later, for adequate immune response.

IMMUNITY

Appears in 10 days after vaccination.

POST-VACCINATION REACTION

The vaccine may cause temporary nodules at the site of injection.

PRECAUTION

Vaccinate only apparently healthy animals

WARNING

For veterinary use only.

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE

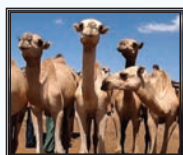


NATIONAL VETERINARY INSTITUTE

Document No:
NVI - QMS - QF - 64

User Manual for CAMEL POX VACCINE

Issue No.2



DESCRIPTION

- Live attenuated vaccine containing Camel Pox virus strain cultured on vero cells and lyophilized with a minimum titer of 3 TCID₅₀ per field dose.

PRESENTATION

The vaccine is available in 5ml or 20ml vial of 50 or 100 doses.

STORAGE

The vaccine should be stored at -20° C. The vaccine should be protected from heat and direct sunlight.

RECONSTITUTION

A vial of 50 doses should be reconstituted with 50ml or 100 doses with 100ml of cool and sterile saline water.

DOSAGE FORM

- * 1ml of diluted vaccine is injected intradermally or subcutaneously.
- * Animal should be vaccinated at 3-4 month of age, repeat vaccination every 6 months.
- * The reconstituted amount of vaccine should be used within 2 hours .

IMMUNITY

Develops from 2 weeks after vaccination and may last for 6 months.

PRECAUTION

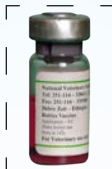
- * Vaccinate only apparently healthy animals
- * Other vaccination programs should be carried out two weeks before or after camel pox vaccination

WARNING

For veterinary use only.

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE

	NATIONAL VETERINARY INSTITUTE	Document No: NVI - QMS - QF - 64
User manual for RABIES VACCINE		Issue No.2



DESCRIPTION

Inactivated cell culture rabies vaccine contains inactivated rabies virus (ERA strain) antigen with potency > 1.0IU per dose. The virus is propagated on Vero cells and inactivated with β -propiolactone (BPL) after purification. Aluminium hydroxide gel is added as an adjuvant and thimerosal (0.01%w/v) as a preservative.

PRESENTATION

The vaccine is available in 5ml vial of 5 doses.

STORAGE

The rabies vaccine should be transported and stored between +2°C and +8°C. At no storage should the vaccine be allowed to freeze. Protect the vaccine from heat and direct sunlight. The vaccine can be stored for only one year from date of manufacture.

DOSAGE FORM

- * 1ml of vaccine is injected intradermally or subcutaneously.
- * Shake well before use

PROPHYLACTIC USE

A single dose is administered for animals of 3 months of age and above. Primary vaccination can be two inoculations with month of intervals.

POST-BITE THERAPY

Six doses are to be given repeatedly as scheduled below:

1 st dose	2 nd dose	3 rd dose	4 th dose	5 th dose	6 th dose
The day of injection after bite	3 rd Day	7 th Day	14 th Day	28 th Day	90 th Day

IMMUNITY

Immunity is conferred for one up to three years. However, annual vaccination is recommended in endemic areas as per the WHO guideline.

PRECAUTION

Immunize only health animals. Malnutrition, infestation with worms, administration of immunosuppressive agents such corticosteroids or radiotherapy will interfere with the immune response to vaccine.

WARNING

For veterinary use only.

PLEASE MAKE SURE THAT THIS IS THE CORRECT ISSUE BEFORE USE



6. OTHER SERVICES

NVI has well equipped diagnostic and research laboratories with well experienced professionals, and provides the following services to the customers:

6.1 Disease diagnosis

- Bacteriology Lab.: bacterial isolation and species/serotype identification& characterization.
- Serology Lab.: antibody and antigen detection using ELISA, CFT, HA, HIT, RBPT, VNT, AGID
- Virology Lab.: cell culture facilities and virus isolation
- Molecular Biology Lab.: pathogen genome detection and serotype/species identification
- Preservation of pathogen isolates using Lyophilization techniques.

6.2 Diagnostic kit supply

- Diagnostic kit supply for bacteriology and serology analysis with control positive and negative antigens and sera, and bacterial culture.
- Rabbit plasma
- Laboratory animals like Mice, Guinea pig and Rabbit

6.3 Feed analysis

- Nutritional composition and microbial contamination determination of the animal feed

6.4 Laboratory technique training

- Short term training on bacteriology, serology, virology, molecular biology, biosecurity/ biosafety and epidemiology techniques.



**53 YEARS EXPERIENCE IN VETERINARY
VACCINE PRODUCTION**



Contact Address

Tel: +251 114 338411/16 (Office)

Mob: +251 911 510894

Fax: +251 114 339300

P.O. Box: 19, Debre zeit - Ethiopia

E-mail: nvi-rt@ethioet.et

Website: www.nvi.com.et