

Blu-Vax is an inactivated, adjuvanted vaccine.

Reg. No. G4534 (Act 36/1947)



Blu-Vax is a multivalent vaccine that contains 11 inactivated virus antigens.



The virus is amplified in cell culture to high concentrations and chemically inactivated under sterile conditions.

After inactivation, the antigens have a decreased ability to elicit an immune response. This is solved by adding an emulsified oil-in-water antigen that stimulates an inflammatory reaction which markedly increases the neutralising immune response against the epitopes contained in the vaccine antigens.



Figure 1. Sheep with typical clinical signs of bluetongue.



Multiplicity of protection

The antigens that make up **Blu-Vax** were selected from recent field cases of bluetongue that infected sheep in South Africa.

This makes the vaccine appropriate for the protection of animals against the serotypes and genetic variants that currently circulate in the field. Eleven antigens, covering serotypes 1, 2, 3, 4, 5, 7, 12, 13, 16, 17 and 24 are chemically inactivated and included in each dose of **Blu-Vax**.

A. Photo courtesy Dr D Odendaal
B. Photo courtesy of www.fao.org

Achieving protective immunity

Since bluetongue may be caused by infection with any of 24 serotypes that are present in South Africa, a vaccine that is designed to protect against the disease has to elicit neutralising antibodies against multiple serotypes. **Blu-Vax** has been shown to elicit the production of neutralising antibodies against multiple serotypes of BTV with a minimum of a vaccination dose followed by a booster dose of this multivalent vaccine.

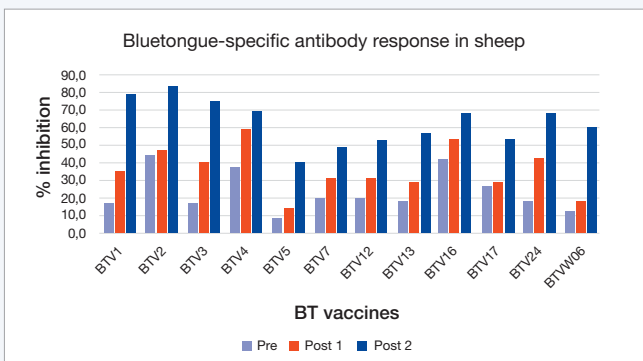


Figure 2: Neutralising response against different serotypes of BTV as measured by SNTs.

It is also essential that a booster dose be administered 3 to 4 weeks after the primary (initial) dose. This anamnestic response is essential and provides a marked increase in the level of circulating BTV-specific antibodies that provide protection against a virulent challenge. For lambs born of naïve ewes, a second booster administered 3 to 4 weeks later after the first booster, will be highly beneficial (see Figure 4).

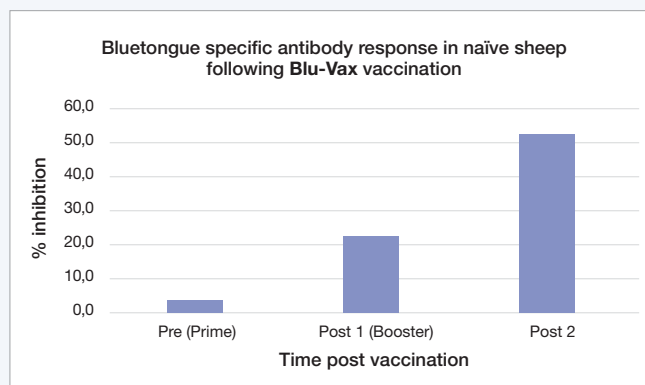


Figure 3: Average antibody levels measured before vaccination, after the primary vaccination and after administering a booster.

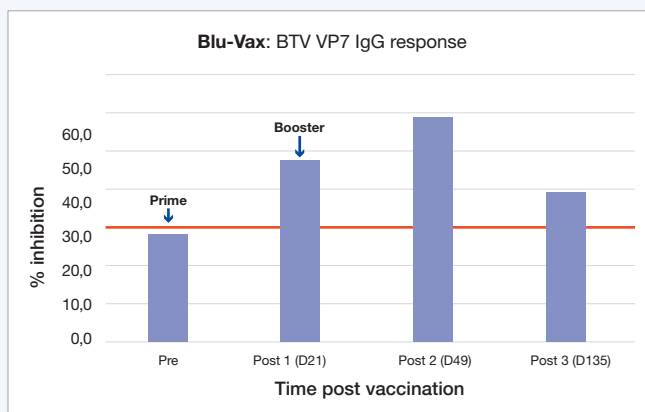


Figure 4: Duration and level of BTV-specific antibodies in young pregnant ewes.

Safety

The major advantage of **Blu-Vax** is in the safety of the inactivated antigens. It can be used to vaccinate sheep at all ages and all stages of pregnancy. There are no harmful effects on the foetus and it is advised to vaccinate ewes in the last trimester of pregnancy to ensure passive immunity in lambs up to the age of 10 weeks.

It was also determined that vaccination with **Blu-Vax** is not detrimental to sperm production and can be safely used to vaccinate rams.

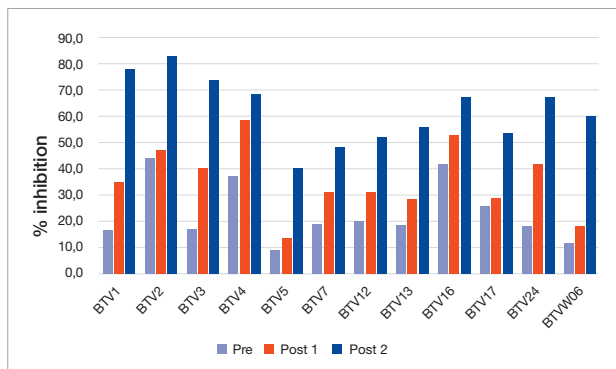


Figure 1: Antibody response in sheep vaccinated with 11 inactivated monovalent bluetongue virus vaccines versus **Blu-Vax** batch BTVW06.

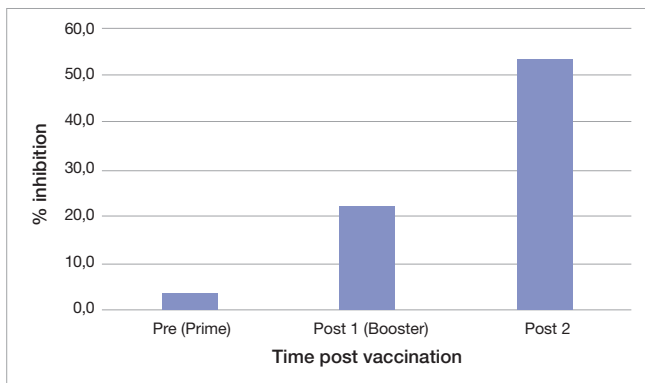


Figure 2: Antibody response in naïve sheep following **Blu-Vax** vaccination. Vaccination (prime, booster) at 4-week interval. Bleeding: prior to the first injection (pre), prior to the booster injection (post 1) and 4 weeks after administration of the booster (post 2).