

# LUMPY SKIN DISEASE VACCINATION: ADVERSE REACTIONS AND THE NEETHLING RESPONSE

Live attenuated vaccines may cause mild adverse reactions in cattle that resemble clinical LSD.

Full protection from vaccination takes 3–4 weeks to develop<sup>1</sup>; vaccinated animals can still develop LSD during this period. It is important to distinguish between true LSD due to incomplete vaccine protection vs vaccine adverse effects (“Neethling” response) during this time.

Given the high effectiveness of live-attenuated lumpy skin disease vaccines in preventing disease and reducing onwards transmission, **vaccination is recommended without reservation**<sup>2</sup>.

## Local vaccine reactions

Localised reactions, characterised by a lump at the vaccination site, are common and acceptable, as they show that the vaccine virus is replicating and producing good protection (Figure 1)<sup>3</sup>. These lumps occur approximately 6 days after vaccination and resolve in 2–4 days<sup>4</sup>. Vaccinated cattle may also develop a temporary fever and loss of appetite<sup>5,6</sup>.



Figure 1: Local vaccine reaction<sup>3</sup>

## Neethling response/disease

Rarely, some animals may show **mild generalised disease**, so-called “Neethling” disease or response (after the name of the Neethling vaccine virus strain) (Figure 2). However, these skin lesions are usually raised, superficial, clearly smaller than LSD lesions (less than 2cm)<sup>4</sup>, and disappear within 2–3 weeks without converting into necrotic ulcers or scabs<sup>3</sup>. These reactions **only occur within 18 days of the first vaccination**<sup>7</sup>; they are not seen after annual revaccination. They may be seen in up to 1.5% of vaccinated animals<sup>2-5</sup>. There are **no long-term production losses associated with this response**<sup>2</sup>. The Neethling response cannot be spread to non-vaccinated animals.



Figure 2: Neethling disease<sup>4</sup>



## Lumpy skin disease

In contrast, LSD lesions are larger, deeper, and convert into deep 'sitfast' lesions, leaving permanent scarring (Figure 3, Figure 4). Affected animals show other systemic signs of illness, such as discharge from the eyes and nose and enlarged lymph nodes<sup>3</sup>. Up to 10% of animals may die and those that recover generally don't regain pre-infection production levels<sup>8</sup>.



Figure 3: Lumpy skin disease showing larger, deeper lesions<sup>3</sup>

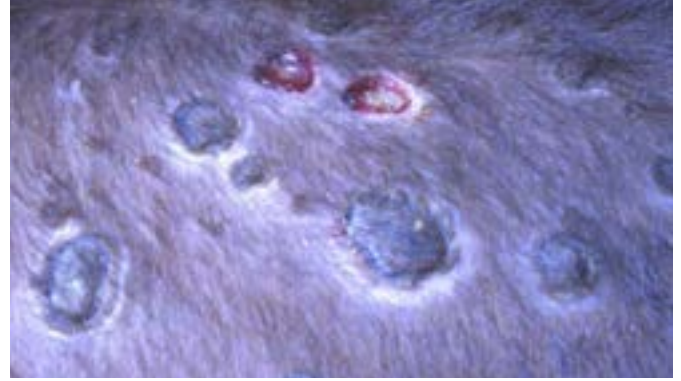


Figure 4: Lumpy skin disease lesions convert to necrotic ulcers and scabs<sup>9</sup>

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