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Lumpy Skin Disease vaccine information

**Indonesia biosecurity support
project**

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Ausvet

Level 1, 34 Thynne St, Bruce, ACT 2617 Australia

www.ausvet.com.au

ABN: 64 613 142 9

Contact: Emma Zalcman

emma@ausvet.com.au

1 Vaccines approved for use in Indonesia

Table 1 summarises Lumpy skin disease (LSD) vaccines approved for use in Indonesia as of September 2022. The table includes details on primary and booster dosing and other vaccine-specific details. All vaccines require refrigeration. It is important to follow manufacturer's instructions for storage and use. Both vaccines can be delivered to pregnant cows which will confer immunity to calves that feed on colostrum for 4-6 months. Vaccination prior to 6 months may be less effective due to maternal antibody interference.

1.1 Vaccine co-administration in cattle

The main considerations for vaccine coadministration are timing and endotoxin stacking [1]. In humans, different live vaccines should not be administered within 4 weeks of each other as they will interfere with the immune response and be less efficacious, however this interaction has not been noted in the literature on cattle [2], [3]. Vaccination with multiple live vaccines simultaneously is considered safe. Endotoxin stacking occurs when more than 2 vaccines against gram negative bacteria are given simultaneously and can result in severe illness in vaccinated animals.

Common gram-negative bacterial species are *E. coli*, *Klebsiella spp.*, *Histophilus spp.*, *Mannheimia spp.*, *Pasteurella spp.*, *Campylobacter spp.*, *Salmonella spp.*, and multiple strains of *Leptospira*. If the feedlot is vaccinating for gram-negative Bovine Respiratory Disease (BRD) pathogens and Haemorrhagic Septicaemia (HS) simultaneously this should be taken into consideration, but it is not a concern when vaccinating for LSD.

Since live attenuated vaccines stimulate the animal's immune system, they can be less effective in high-stress situations like shipping or feedlot arrival where the animal is immunosuppressed. Numerous studies have demonstrated improved performance of delayed vaccination with live BRD vaccines as compared to vaccination immediately after arrival, and as such the LSD vaccines may be less effective when administered on induction [1], [4].

Both Lumpyvax and MEVAC LSD are live attenuated vaccines, which means consideration must be given to the timing of vaccination. If the cattle receive a live BRD vaccine in the 4 weeks prior to their LSD vaccine, there is a possibility it may not be as effective as labelled. Similarly, since animals are likely to be stressed and therefore immunocompromised on arrival, the LSD vaccines may be less effective. Since both are viral vaccines, they will not contribute to endotoxin stacking.

Table 1: LSD vaccines approved for use in Indonesia.

Name	Type	Primary dosing (days)	Boosters	Time to full immunity (days)	Early immunity (days)	Delivery	Comments
Lumpyvax (MSD) [5]	Live attenuated (Neethling-type) [5]	0 [5]	12mo [5]	21 [5]	10 [5]	SC in neck [5]	<p>Ages: Calves of unvaccinated cows – Any; calves of vaccinated cows – 6mo [5]</p> <p>Species: Cattle [5]</p> <p>Maternal antibody reaction: Yes [5]</p> <p>Shelf life: Throw out all remaining product after use [5]</p> <p>WHP: Meat – 21 days (South Africa) [5]</p>
MEVAC LSD (Mevac) [6]	Live attenuated (Neethling-type) [6]	0 [6]	12mo [6]	Not reported	Not reported	SC in neck [6]	<p>Ages: Calves of unvaccinated cows – Any; calves of vaccinated cows – 6mo</p> <p>Species: Cattle</p> <p>Maternal antibody reaction: As above [6]</p> <p>Shelf life: Not reported</p> <p>WHP: Not reported</p>

References

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