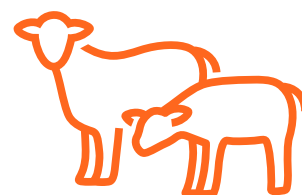


TECHNICAL INFORMATION UPDATE



Gudair®: Best Practice Vaccination Technique

Gudair is a critical tool in the management of Ovine Johne's disease (OJD).

In accordance with the registered product label, the vaccine should only be administered under the skin (subcutaneously). However, a recent study conducted by Zoetis¹ has revealed that even experienced sheep producers may be unintentionally administering Gudair into muscle, or hitting other structures such as bone, on a regular basis. This increases the risk of carcass trimming (Image 1), abscesses – and the subsequent risk of fly strike – and, in rare cases, neurological dysfunction (“OJD staggers”).

What can producers do to achieve correct, subcutaneous vaccination – maximising vaccine efficacy and minimising the risk of adverse reactions?

The Zoetis study indicated that the following measures will assist in achieving correct vaccine placement:

- Vaccinating **under the skin**, on the **side of the neck** (Image 2 & 5).
- Only using **¼ inch (6mm) needles**.
- Using an angle of vaccination suitable for the class of stock (Table 1). In adults with significant wool growth, use the vaccinator to help part the wool.
- Taking care to **avoid critical structures near the base of the ear** (Image 5).



Image 1. Vaccination site abscess at slaughter, which will lead to significant trimming.

Class of Stock	Needle Gauge	Needle Length	Needle Angle to Skin
Lambs	18G	¼ inch	45°
Adults off-shears/short wool/low body condition score	18G	¼ inch	45°
Adults with wool growth	18G	¼ inch	90°

Table 1. Correct vaccination technique by class of stock.

The Zoetis study involved an assessment of 64 injection sites in mixed ages and breeds of sheep. Due to Animal Ethics requirements, the study was performed in sheep that had been humanely euthanised.

Following euthanasia, animals were vaccinated with Gudair using a Sekurus safety vaccinator. ¼ inch and ½ inch needles were compared, at 45° and 90° angles to the skin. The placement of vaccine (under the skin, into muscle, or into the wool) was then assessed.

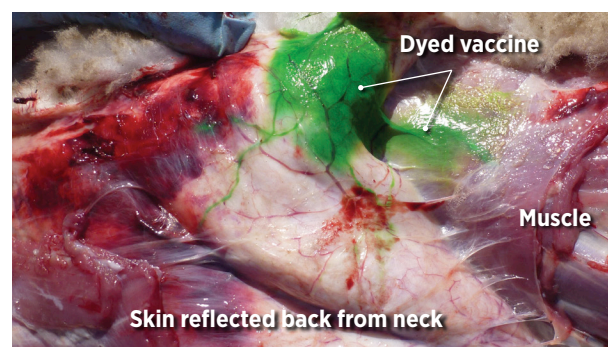


Image 2. Vaccine (dyed green) correctly administered under the skin on the side of the neck.

¹Zoetis gratefully acknowledges the assistance of Dr Tristan Jubb of Bendigo Sheep Vets in the conduct of this study.

In addition, it is recommended to:

- Use clean **18 gauge** needles, and change them regularly (every 50-100 sheep, or if dropped or blunted).
- Ensure animals are adequately restrained – lambs in cradles, sheep packed tightly in a race.

What should producers avoid when vaccinating?

The Zoetis study indicated that ½ inch (12mm) needles are likely to deliver the vaccine too deep, into muscle, and **should be avoided** (Image 3).

The following points should also be considered:

- Where possible, avoid vaccinating animals in **wet** or **dusty** conditions.
- Don't vaccinate at sites other than the neck. For example, if you vaccinate into the cheek (Image 4) or under a leg, and the animal develops an injection site reaction, this could cause the animal to go off feed/become lame and lose condition.
- **Be careful to avoid vaccinating into important structures in the head/neck region (Image 5).** These include salivary glands, lymph nodes and blood vessels located directly below the base of the ear.
- In particular, take care to avoid deep, intra-muscular injection near the junction of the head and neck, or the joints of the spine (Image 5). In rare cases, this has been linked with the development of a neurological condition known as 'OJD staggers'. OJD staggers has not been known to occur when the vaccine is correctly administered under the skin.

Other tips

- Store and handle vaccines correctly – keep refrigerated (do not freeze) when not in use. During use, keep cool and protect from sunlight.
- Use the correct vaccinator. **Only use the Sekurus safety vaccinator when vaccinating with Gudair – its unique safety features minimise the risk of human exposure.**

Image 5. The orange circle indicates the correct site to vaccinate, under the skin, on the side of the neck, avoiding critical structures near the base of the ear, and the joints of the spine (C1 & C2).

For more information call the Zoetis Technical Helpline on 1800 814 883 or contact your local Zoetis Professional Sales Representative.

Reference: 1. Robertson, N. Study of OJD vaccination techniques: Revelations after dissecting sheep administered dyed Gudair® vaccine. Proceedings of the Australian Sheep Veterinarian's Conference, Dubbo, 2016.

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Image 3. A half-inch needle has delivered the vaccine (dyed blue) deep into the muscle of neck on this animal.

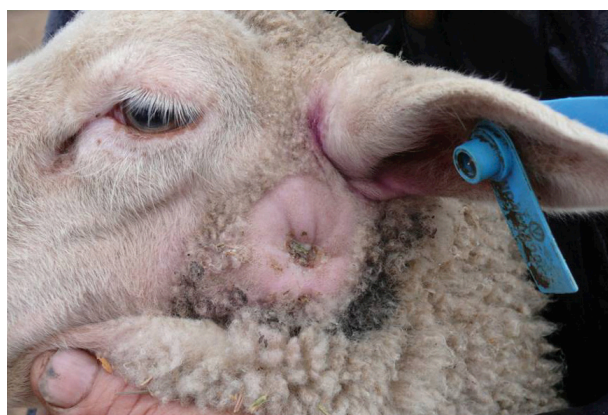


Image 4. Abscess at the site of vaccination into the cheek.

