

THE UNIVERSITY OF QUEENSLAND
STANDARD OPERATING PROCEDURES
LARGE ANIMAL TEACHING

SOP No:	ATT 012
SUBJECT:	Transtracheal Wash in Ruminants
POLICY:	This procedure may only be performed by, or under the supervision of operators skilled in the technique
PRECAUTIONS:	Aseptic conditions are required to avoid introduction of infectious pathogens into the subcutaneous tissues around the tracheal puncture site. Restraint of the animal is necessary for the procedure, for cattle this is ideally a crush with a headlock or in the case of smaller ruminants this may be achieved by manual restraint in the standing position. An assistant is required.
EQUIPMENT:	2% lignocaine solution #11 scalpel blade (or similar) xylazine (or similar sedative) and syringes and needles Animal clippers Surgical preparation solutions (iodine or chlorhexidine based) Sterile dry cotton gauze 8 cm x 8 cm squares (or similar) Bandaging material - light (to wrap the neck after the procedure) Sterile surgical gloves Small sterile drape for working surface (tray, table or similar) Non-sterile working surface (tray, table, or similar) Sterile syringes (e.g. 1-3 to 5 mL, 1-12 mL, 2-60 mL) Sterile small gauge needles (e.g. 21g, 20g) Transtracheal wash kit appropriate for the animal size Sterile saline (250 mL) warmed to approximate body temperature Collection tubes and culturettes 30-way stopcock (optional)
PROCEDURE:	<p><u>Restraint:</u> The animal is restrained using methods appropriate for its size and demeanour. Light sedation (e.g. xylazine) may be used. The cervical portion of the trachea is palpated and the site closest to the thoracic inlet which can be grasped and stabilized is identified.</p> <p><u>Preparation of site:</u> An area approximately 10 cm by 10 cm (depending on animal size) around the identified site is clipped. The site is prepared as for aseptic surgery (scrubbed with either the iodine or chlorhexidine preparation solutions appropriately).</p> <p><u>Preparation for needle insertion:</u> The clinician puts on sterile gloves. Sterile syringes, needles, scalpel blade, two 60 mL syringes loaded with sterile saline, and the transtracheal wash kit contents are placed on the sterile working surface. (For calves and small ruminants use 20 to 30 mL total of saline.). A small bleb of local anesthetic is injected under the skin and local anesthetic infiltrated into the subcutaneous tissues to the depth of the trachea. The trachea is stabilized with one hand and a stab incision made into the skin with the #11 scalpel blade.</p> <p><u>Performing the transtracheal wash:</u> From the transtracheal wash kit, the introducer trocar with cannula is inserted through the stab incision to the depth of the trachea and pushed through an inter-tracheal space fully into the trachea lumen. The trochar is removed from the cannula and set aside. Air movement should be audible. If not, a syringe may be used to check patency. Once patency is confirmed, the cannula is directed down the trachea and an</p>

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assistant, wearing sterile gloves, passes the transtracheal catheter through the cannula into the lower tracheaattaches the 3-way stopcock (optional) (Most animals will cough at this point.) The assistant removes the catheter stylet, between syringe infusions and rapidly infuses the sterile saline. Immediately after the contents of the 2nd syringe are infused, the assistant aspirates to collect any fluid present. If unsuccessful, the syringes may be re-loaded and a second infusion and aspiration attempt may be made. The cannula and catheter maybe either withdrawn from the trachea together or the catheter removed before the cannula. If the catheter is withdrawn first, care must be taken to avoid cutting the catheter with the edge of the cannula.

(Note in some systems the trochar and cannula combination is replaced by a normal needle. In these systems, the needle bevel must be directed ventrally and care must be taken during the removal to avoid cutting the catheter with the needle. No other changes in technique are necessary.)

Fluid samples should be transferred to the appropriate sample containers.

Post-procedure care: Sterile cotton gauze should be placed over the site and secured with a light bandage wrap around the neck. (In older or larger ruminants, anatomy may limit the use of this neck wrap.) This wrap may be removed in 24 hours.

RECOMMENDATIONS: Results of sample analysis will determine the recommendations.

DATE APPROVED: April 2009

REVISED:

REFERENCES

1. Chapter 16. Clinical examination of the respiratory tract. B.C. McGorum, P.M. Dixon, O.M Radostits, et al. In: *Veterinary Clinical Examination and Diagnosis*. O.M. Radostits, I.G. Joe Mayhew, Doreen M. Houston (editors). WB Saunders 2000. ISBN 0-7020-2476-7