

## Enteral fluid therapy in the Horse

Dr Hadley Willsallen

BVSc, MANZCVSc, DACVS-LA

Registered Specialist in Equine Surgery

(Dr Willsallen was the EVA President in 2022-23 and can be contacted through the EVA Office)

- Enteral fluid administration is a cost-effective alternative to intravenous fluid therapy when there is a functional gastrointestinal tract
- Experimental studies have shown that isotonic enteral fluids are as effective as IV fluids for treatment of mild dehydration when experimentally induced in horses
- The administration of large volumes of isotonic enteral fluids is highly effective at softening ingesta and the preferred treatment option for large or small colon impactions
- Enteral fluids can also address large fluid deficits with conditions such as colitis

### Isotonic fluid recipe 10 Litres

- 3 tablespoons of salt (NaCl)
- 1/3 tablespoon lite salt (KCl) (lite salt can be purchased from supermarket)
  - 3 tablespoons of baking soda (sodium bicarbonate  $\text{NaHCO}_3$ )

This is added to 10 litres of hygienic water. (Warm water will aid the dissolving.)

- ALTERNATIVE Another easy recipe for isotonic fluid is to use a syringe and measure out 15ml of salt lite and 15ml of salt and dissolve in 4L of water

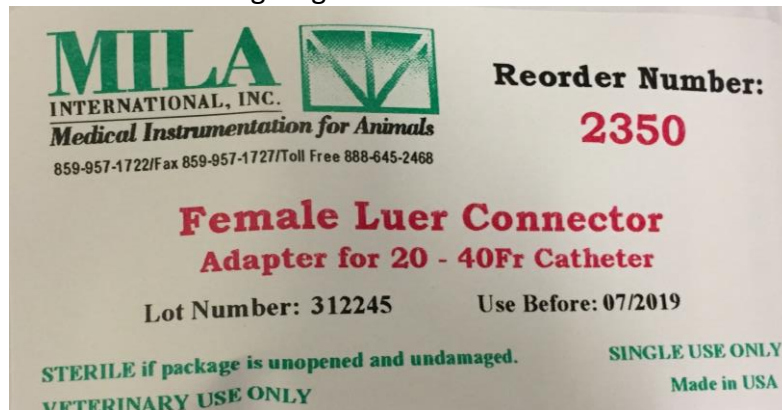
### Administration

- For impaction treatment as rough guide: Intermittent bolus for a 500Kg horse 6-10L administered q2-6hrs or as a constant rate infusion (CRI) via an indwelling nasogastric tube (NGT) for a 500Kg horse at 2-10L/hr
- With intermittent tubing ensure assess for net nasogastric reflux prior to administration, the NGT can be tapped in place and secured to the halter and a muzzle placed.
- In the experimental study for treatment of dehydration a rate of administration of enteral fluids at 15ml/Kg/hr for 8 hours was used.

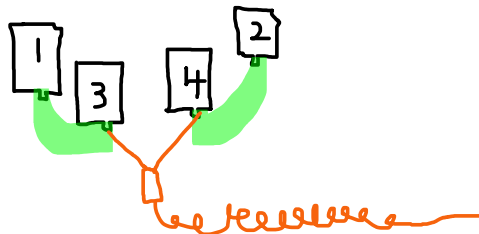
### Equipment of indwelling NGT

- Nasogastric Tube
  - Mila indwelling NGT work well for a foal the 14 Fr x 125cm and for an adult use the 18 Fr x 250cm, alternatively use a small bore NGT

- Using a female Luer connector taped to the end of the NGT will allow attachment of the giving set to the NGT.



- Collect a used IV curly giving set, two **bag to bag connectors** and 4 empty 5 L bags. Connect the system up as you would for IV fluid therapy. Hang fluid bag 1 and 2 higher than 3 and 4. Cut the top corner from bag 1 and 2. Using a funnel you can pour approx 20L of isotonic fluid into bag 1 and 2.



- Mark the fluid bags with black permanent marker and if possible, colour code the IV giving set so that it is not mistaken for IV fluids
- Pass the NGT and ensure that you are in the stomach, this can be more difficult with a smaller bore tube.
- Secure the NGT to the nostril with suture as you would for a foal, and further with Elastoplast around the muzzle, see photo.



- Mark the nostril level on the tube with a marker giving you an indication of if the tube has been pulled out.
- The end of the NGT can be secured to the halter and the mane to ensure it cannot be pulled out.

- The IV giving set, adaptor and NGT should be taped together with white tape
- Secure the IV giving set to the mane also, preferably using the old zip ties
- Usually apply a muzzle to prevent the horse from dislodging the NGT. The horse can be intermittently fed with these small bore tubes.



#### Risks

- NGT dislodgement and fluid inadvertently going into the trachea
- Development of nasogastric reflux can occur and the fluid should be discontinued or titrated as needed