

How to make a mouth opener (gag) for elephants

This device was developed by Christopher Dremme in Indonesia for tube feeding elephants with tetanus (figure 1). It has also been used for molar inspection, bronchoscopy and [broncho-alveolar lavage \(BAL\)](#); Imke Wiemann-Lüders, Willem Schaftenaar, Jan Bos).



Figure 1. Elephant mouth opener developed and used by Christoffer Stremme

The model shown here (figure 2) is made of steel and is based on two 400 mm long steel threaded rods (16 mm diameter, used for scaffolding). Normal thread can also be used; they will require less force but more rotations (=time) to open the mouth.



Figure 2.

The dimensions of the steel mouth pieces are 600x50x10 mm. To prevent wounds on the lips and tongue, the edges of the blades must be rounded.

Two sets of straps are used for fixation of the device on the elephant's head. Each set consists of a short piece with a ratchet buckle and a long piece that will go into the buckle once it is placed over the neck of the elephant.

Upper part of the device

A steel tube (55x26mm) that holds the threaded rods dimensions is welded on each end of the upper mouth blade (figure 3a). The top side is closed by a steel plate (60x40x50mm; figure 3b). A small hole (*) in this plate allows an M8 bolt (figure 3c) to be screwed into the top side of the threaded rod; a 25 mm diameter hole (->) serves the attachment of strap.



Figure 3a

3b

3c

Lower part of the device

Two anchor nuts are welded or screwed to the lower mouthpiece. A similar strip with a hole for the strap attachment is welded on the lower blade.



Figure 4. Anchor nut and steel strip with a hole for strap attachment



Each rod has one handle welded to the rod. Once the device is placed into the mouth of the elephant, each rod is independently, however simultaneously turned around by an assistant, so the lower mouth blade is moved up parallel to the lower one.

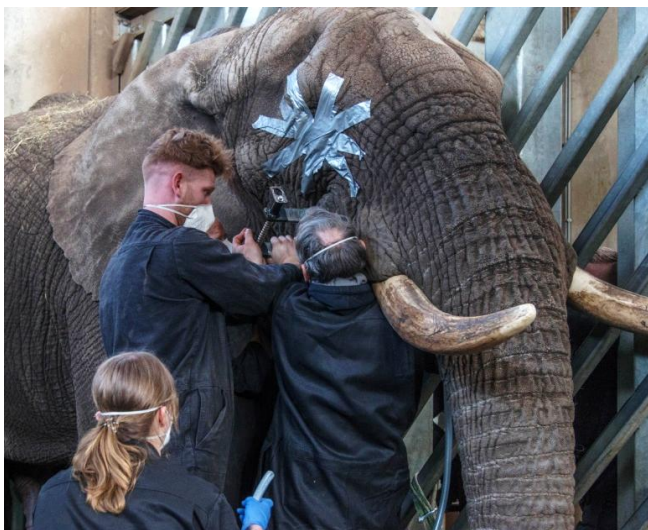


Figure 9. Mouth opener used in adult African bull for BAL

Reference:

Lueders I, Stremme C. 2021. Construction of a full mouth speculum facilitating oral examinations, bronchoscopy and gastric tubing in elephants. Construction of a full mouth speculum facilitating oral examinations, bronchoscopy and gastric tubing in elephants. Tierart. Praxis 2021.

More details can be found in the figures below.

