

## RESEARCH NOTE

# AN APPARATUS FOR THE RESTRAINT OF SHEEP DURING INFESTATION WITH SCHISTOSOMES

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### ABSTRACT

VAN WYK, J. A., 1975. An apparatus for the restraint of sheep during infestation with schistosomes. *Onderstepoort J. vet. Res.* 42 (2), 75-76 (1975).

With this adjustable apparatus sheep aged from five months to five years and varying in mass from 16-95 kg could be restrained effectively. Cercarial suspension was spilt by only 2/44 sheep during infestation with *Schistosoma mattheei*.

Using a battery of seven cages, it was possible to infest 23 sheep, each for 30 minutes, in one day. No cercariae were more than 4½ hours old at the end of exposure.

Van Wyk, Heitmann & Van Rensburg (1975) showed that the most practical and efficient method of infesting a sheep with schistosomes is by thoroughly washing one of its legs and then immersing this in the cercarial suspension. They found, however, that manual restraint of the animals required a great deal of labour and was unsatisfactory because 6/24 sheep spilt the cercarial suspension. Methods of restraint used by other workers were also deemed unsatisfactory.

Subsequently an apparatus to restrain sheep during infestation was designed by the author and built at Onderstepoort.

### THE APPARATUS

The apparatus (Fig. 1 and 2) is constructed mainly of 3,5 cm square metal tubing. The vertical supports are 55 cm high and 25 cm broad. The distance between the midpoints of the front and rear supports can be adjusted from 52-98 cm while the left and right

supports are 44 cm apart. The holes in the leather harnesses through which the sheep's legs pass are oval, the longest diameter of those in front being 11 cm and of those at the rear 14,5 cm. The distance between them is adjustable by means of straps and buckles.

### USE OF THE APPARATUS

The sheep's legs are slipped through the holes in the harnesses. The animal is then placed in the apparatus, the distance between the front and rear supports adjusted and the harnesses hooked onto the supports, so that the sheep is suspended between them. The harnesses are then adjusted until the animal's hooves just touch the platform of the apparatus and the straps over its back are fastened. It is important that the animal is not lifted too high otherwise it tends to struggle continuously. The backs of small lambs drop below the top of the pillars when the harness is adjusted to position the feet and in such cases rolls of hessian, etc., must be placed between the lamb and the straps for effective restraint.

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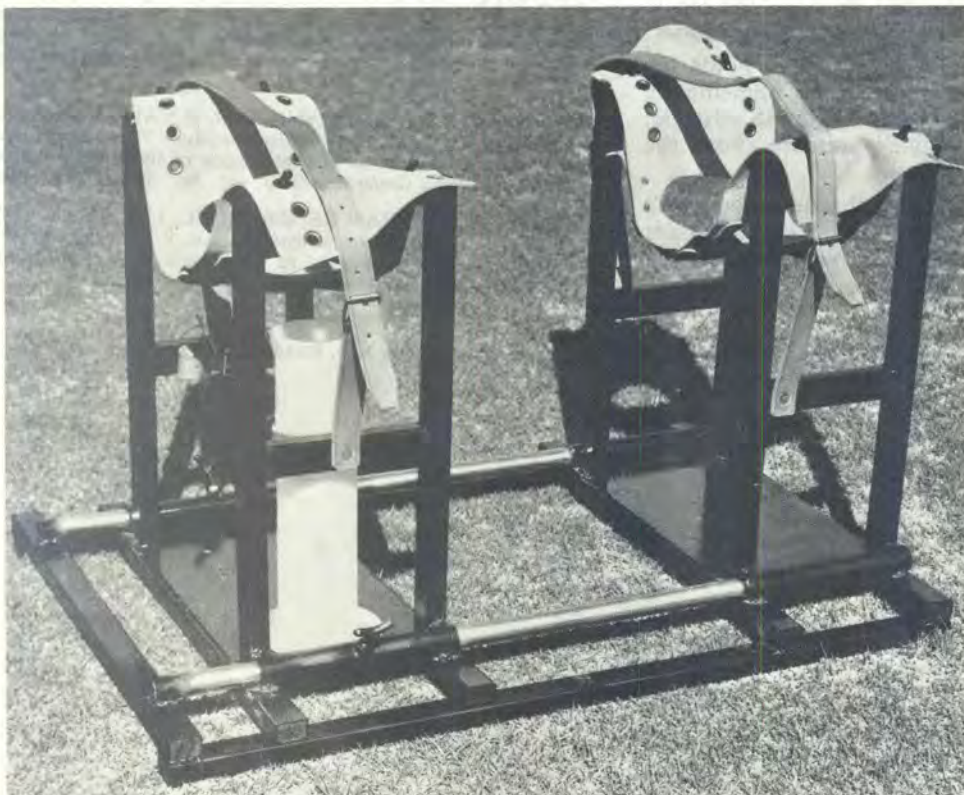


FIG. 1 The infestation cradle showing the leather harness and cylinder used for infestation. Note that the left hand (front) pair of supports can be moved on the base frame and are secured by wing nuts





FIG. 2 The infestation cradle in use

The required number of cercariae concentrated in a small volume of water is placed in a measuring cylinder (Van Wyk & Groeneveld, 1973). One front leg of the sheep is washed (Van Wyk, Heitmann & Van Rensburg, 1975) and placed in the cylinder which is then secured to its support. Water is added to the cercarial suspension until most of the leg is submerged, i.e. 6–10 cm from the top of the cylinder.

An assistant, seated beside each sheep, holds his hand in readiness on the animal's leg, immediately above the olecranon. If the sheep begins to struggle, the leg is restrained by applying pressure above the olecranon.

Sheep aged between five months and five years and varying in mass from about 16–95 kg have been restrained by this apparatus (Van Wyk, Van Rensburg & Heitmann, 1975).

By using a battery of seven of these cradles it was possible to infest 23 sheep (each for 30 minutes) in one day. This operation was so rapid that none of the cercariae, which were collected in two batches were more than 4½ hours old at the end of the exposure period. On the second day 21 sheep were similarly infested.

Despite the fact that these sheep were not accustomed to handling only two of the first group of 23, and none of the second group, spilt cercarial suspension. Furthermore, both of these cases occurred before the method of holding the front leg, described above, had been instituted. Labour requirements were reduced by 50% compared to manual restraint (Van Wyk, Heitmann & Van Rensburg, 1975).

The mean worm development in these sheep was 57.2% which is similar to results obtained previously when the leg was washed prior to infestation (Van Wyk, Heitmann & Van Rensburg, 1975).

The cradles were sufficiently adjustable to accommodate sheep of a wide range of sizes. The base could, however, be shortened because the largest sheep tested required a distance of only 88–90 cm between the midpoints of the front and rear supports.

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