

Section 12

Poster Abstracts



The Oxylog for Oxen

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The Oxylog is made by P.K. Morgan Ltd, Rainham, Kent, U.K. and was originally designed by Humphrey and Wolff (1977) to measure oxygen consumption of human beings over periods of minutes to hours. To adapt the Oxylog for working oxen, an airtight face mask was made which sealed round the animal's muzzle by means of a latex rubber cuff. The body of the mask was made of plywood and was of a simple geometric shape that can be easily adapted to animals of different sizes. Inlet and outlet valves were made using the valve flaps of the original 'human' mask in groups of three to increase their capacity. A scaled-up version of the original turbine flowmeter was fitted on the inlet side of the mask. Finally a bypass tube was attached to the inlet to the Oxylog thus allowing only a portion of the expired air to pass over the polarographic oxygen electrodes.

The modified Oxylog was calibrated and tested against a conventional open-circuit gas analysis system. To do this, a cow wearing the Oxylog worked on a treadmill. All the expired air issuing from the Oxylog was then passed through the open circuit system. Fourteen simultaneous determinations of oxygen consumption were performed over periods of 30–60 min each. On average, the open circuit system gave results which were 1.51% higher than those from the Oxylog with a standard error of ± 0.96 . The modified Oxylog has subsequently been used in Nepal, Colombia and Nigeria. It has proved robust and reliable and is a valuable new tool for draught animal research in the field.

Reference

Humphrey, S.J.E. and Wolff, H.S. 1977. The Oxylog. *Journal of Physiology*, 267, 12p.