

ORAPAVINE (M99) in FARM ANIMALS.
(DR. HARTHOORN AT CONGRESS S.A.V.M.A. 1964)

1. Attributes of agent for Chemical restraint required:

- (a) A wide range of species must be affected.
- (b) A small bulk of $\frac{1}{2}$ to 1 ml.
- (c) About same effect i/v or i/m route.
- (d) Safe by i/m injection into any part of body.
- (e) A wide safety margin to obviate necessity of weighing animal.
- (f) Should be reversible - either to end poor reactions or to end effects promptly.
- (g) Should not produce complete relaxation - especially in ruminants. The righting and swallowing reflexes should be preserved to prevent aspiration of regurgitated ruminal contents.
- (h) There should be no harmful side-effects on cardiac, respiratory systems, etc.

2. M99 given i/v in goats - collapse in 47 seconds.
M99 given i/m in goats - collapse in 6 minutes.
M99 given i/v in donkeys - collapse in 53 seconds.

Animals maintain righting reflexes - lie in sternal recumbency.

In ox no real difference between effects of doses of $\frac{1}{2}$, 1 or 4 mg: remain on brisket, but VOCALISE.

Salivation - can be controlled by atropine when down
PLUS use of chlorpromazine + acetylpromazine.

This Largactil makes animal more handleable but still able to rise after Lethidrone reversal (5 ml).

Respiration is not greatly affected, slight tachypnoea, due to the rigidity of the neck, throat and chest muscles and NOT to any depression of respiratory centre. This is true even where 100 x the immobilising dose is used.

The pulse rate rises rapidly in the conscious steer,

donkey or horse but not in the goat. No severe cardiac effects have, however, been demonstrated and no animals have been lost.

3. Recovery occurs after Lethidrone in 30-60 seconds except where large doses of promazine have been used - here recovery requires 1-2 minutes.

Lethidrone (25 mg/ml) is the antidote and relates to the size of the animal, and not to the M99 dose. M99 is selective for certain selector sites in the body.

Dose varies between 40 mg for a goat to 250-500 mg for a rhino. A bovine requires about 5 ml = 125 mg.

Excitement after insufficient antidote is obviated with a mixture of acetylpromazine (20mg/ml) 2-3 cc with the Lethidrone.

4. Stasis of ruminal function is complete in ruminants till the animal rises to its feet.

Rumenotomies have been performed on goats with 2mg i/v with no added restraint. Operation completed in 30 minutes before spontaneous recovery occurs - also then given large doses tranquilliser.

5. TOXICITY. Donkeys withstood 10 times the immobilising dose - but shew excitement. Goats withstood 100 times immobilising dose.

Steers withstood 20 times immobilising dose., both without bad effects.

M99 in body of dead animal is heat-stable and is absorbed through mucosae and therefore cannot be used for game cropping.

6. Analgesic effects are 10,000 times that of morphine.