TITLE OF THE INVENTION

Livestock Treatment Method and Apparatus

TECHNICAL FIELD

[0001] The invention concerns a treatment method for animals and apparatus for performing the method.

[0002] The method is intended for horses and greyhounds but may be beneficial to livestock generally and cattle in particular. A large proportion of the body weight of a racehorse and greyhound is skeletal muscle. They have large lung capacity to match because the combination permits them to run at speed. To maximise and maintain speed, the respiratory system must work perfectly and performance depends on the airways maximising the flow of air to the lungs. Any constriction leads to panting and reduction in performance.

BACKGROUND

[0003] The extent and frequency of impairment is only evident to trainers who are in constant contact with the horses and dogs in their care. When skin ailments are active they are visible as rashes, surface ulcers, wounds, bruises, swelling and the like and topical or systemic treatment can be planned. When respiratory problems are spoiling the animal's performance or recovery from training the cause is often discernable. Heavy panting may indicate blockage of airways with mucus or sputum. While infections by bacteria may be treatable with antibiotics, these frequently disturb the animal through side effects. If the infection is viral the position is less treatable because there are relatively

few anti-virals. So there is a need for a treatment which is rapid in effect and simple to administer.

[0004] A veterinary inspection is a usual step and the introduction of a diagnostic camera helps to show to what extent the airways are not performing as they should. This sort of inspection may be done between training sessions. Once the airways are shown to be the source of slow speed rather than body pain or systemic infection then localised treatment can be planned.

[0005] Trainers like treatments which are rapid in effect so that time lost in training is minimised. This is particularly so when a horse is recovering from travel fatigue. This condition is common and can subtract severely from a training program. This shows as general debility and may last for weeks.

SUMMARY OF INVENTION

[0006] The apparatus aspect of the invention provides a chamber for temporary accommodation of one or more animals to be treated with means to cause an airstream in the chamber and dispensing means for adding finely divided mineral salts which form a suspension when dispensed into the airstream.

[0007] The dispensing means may include a comminuter for reducing the crystalline or amorphous salts to a particle size suitable for air suspension, namely 5-15μm.

[0008] The airstream may be created by a fan such as an axial flow fan.

[0009] The chamber may have surfaces which resist deposition of the salt particles.

[0010] The chamber may have a desiccator which can be covered and uncovered in order to remove excess water vapour from the air.

[0011] The chamber may have floor cleaning apparatus for example a mobile manure scoop.

[0012] The method aspect of the invention provides a method of contacting the cell surfaces of livestock which are in contact with the atmosphere with finely divided mineral salts in airborne suspension, including the steps of confining the animal in a chamber and exposing the animal to an airstream which contains the suspension, whereby the salts are inspired and optionally repeating the exposure.

[0013] The method further includes dispersing a finely ground mineral salts in an airstream created in a chamber containing an animal to be treated, and keeping the animal in the chamber for a period sufficient for the salts to be consumed by inspiration of the animal or deposited on the animal's skin.

[0014] A mixture of salts are preferable. The dose can vary according to the severity of the condition 5g, 10g, 15g and 20g/m^3 being the preferred range. The frequency can also vary according to the severity and can be daily or 1-6 sessions per week. The sessions can last 15-45 minutes.

[0015] Periodically the air in the chamber may be exposed to a desiccator in order to reduce the humidity caused by the expiration and perspiration of the animals.

[0016] The walls, floors and ceiling tend to become coated with the salts particles and those which contain water of crystallization such as magnesium salts cause moist surfaces to persist. Some salts are deliquescent, and these produce a water film on the

floor. It is useful to dust the chamber floor with common salt, preferably sea salt and a desiccating agent such as calcium chloride.

[0017] The salt for airborne suspension may be phosphates, sulphates, chlorides and fluorides of sodium, potassium, calcium, magnesium and iron.

Advantageous Effects of Invention

[0018] 1. Respiratory problems clear up and a return to training occurs sooner. Bleeding and mucus production in the airways diminishes. Attacks of pharyngitis moderate.

[0019] 2. Travel sickness is dispelled.

[0020] 3. Skin complaints are alleviated.

BRIEF DESCRIPTION OF DRAWINGS

[0021] The embodiment of the invention is now described with reference to the accompanying drawings in which:

[0022] Figure 1 is a plan of a therapy chamber for three horses with adjoining staff and record space.

[0023] Figure 2 is a side view of the chamber in Figure 1.

[0024] Figure 3 is the salt dispensing apparatus.

[0025Figure 4 is a plan of a chamber for a larger number of horses.

DESCRIPTION OF THE INVENTION

[0026] Referring to Figures 1 and 2, the treatment chamber **2** is a room **5**m x 4.5m with a partition wall **4** which divides the staffroom **6** from the animal area **8**. Door **10** allows

access from the staffroom to the animal area. Door **12** acts as entrance and exit to the animals. The floor is concrete and a strip 1m wide **14** is covered with chemical desiccant to a depth of 20-25mm. This is a mixture of vermiculite, perlite and calcium chloride.

[0027] The ceiling **16** and upper walls **18** are covered with panels **20** which are coated with desiccant but which after initial use become coated with a second layer of treatment salts.

[0028] Gate **22** pivots left and right and fastens to the frame of door **10**. Shorter gate **24** divides the animal space into a second and third stalls for accommodating two more animals. Collar ties **26** hang from the gates to restrain lively animals. A fluorescent light 28 illuminates the chamber.

[0029] Partition wall **4** has an aperture **30** through which air is blown by the salt dispenser **32** mounted on the wall of the staffroom **6**. Desk space and record keeping containers **34** occupy one wall of the staffroom.

[0030] Referring now to Figure 3, the wall mounted salt dispenser **32** has a storage compartment **36** beside the axial flow fan **38**. Above the fan is a grinder **40** having an electrically driven screw which is fed by a reservoir **42** of about 1 kg capacity. The screw reduces any lumps to a fluent crystalline mix which falls into a collector drawer **44** beneath the grinder.

[0031] The contents of the drawer are transferred to a measuring cup (not shown) and then tipped into a comminuter **46** which has electrically driven cutting blades. A restrictor causes the crystals to fall by gravity into the blades' path in a steady stream. The blades

propel the powder produced by the comminuter upwardly into the airstream generated by an axial flow fan **38**.

[0032] The fan is of 500l/min capacity. The airstream blows the powdered salt into the animal area **8** where it circulates returning through the door **10** which is left ajar.

[0033] In practice, a batch of 60g is prepared and increments of this powder are allowed to rise intermittently into the air flow over a period of minutes once the breathing rate of the horses has fallen to normal. The treatment continues for 15, 30 or 45 minutes and is repeated daily.

[0034] The electronic timer **50** allows the operator to select the treatment period. An air conditioner circuit (not shown) is controlled by a thermostat to adjust the chamber temperature. Humidity is kept low by the removal of desiccant. Buttons **52** select 15, 30 or 45 minute exposure. Buttons **54**, **56** cause temperature and humidity to be shown on screen **58**.

[0035] Three treatments on three days suffice to dispel travel sickness. A useful optional adjunct to the treatment is a negative-ion generator 60 on the opposite wall 62.

[0036] Referring now to Figure 4, for large scale use, such as riding schools and racehorse training centres, a larger chamber is more suitable. The chamber shown is 7m×7m divided by rails **64** into spaces for individual horses.

[0037] The rails are in two rows divided by a central gap **66**. At one end of the gap there is an axial flow fan **48** of 1000l/min capacity which directs an airstream toward the opposite wall **58** through gap **66**. The air circulates and reaches the space **68** behind the fan.

[0038] In a non-illustrated variant, the chamber is a trailer-mounted box like a horse box so that it may be towed by a vehicle to reach the animal, for example a zoo animal. In a further adaptation the mobile chamber is capable of treating one or more animals in the course of the journey. The chamber may alternatively form the body of a truck.

[0039] Treatment of camels with conventional medicines may affect the liver and other organs so salt therapy delivered in a quiet chamber like ours offers no harm and the ability to treat the whole animal.

[0040] The trailer may also be taken to apiaries so that hives may be stacked inside the box.

[0041] It is to be understood that the word “comprising” as used throughout the specification is to be interpreted in its inclusive form, ie. use of the word “comprising” does not exclude the addition of other elements.

[0042] It is to be understood that various modifications of and/or additions to the invention can be made without departing from the basic nature of the invention. These modifications and/or additions are therefore considered to fall within the scope of the invention.

I claim:

1. A treatment chamber for temporary accommodation of one or more animals to be treated comprising

a room for confining animals in an animal area having a floor, a wall and ceiling;

a partition wall which divides the room and forms the animal area;

a means to cause an airstream in the animal area,

a dispensing means for adding finely divided mineral salts which form an airborne suspension when dispensed into the airstream for treating the one or more animals in the animal area by inspiration or deposited on the skin wherein the dispensing means includes a comminutor which reduces the crystalline or amorphous mineral salts to form the finely divided mineral salts at a particle size suitable for airborne suspension;

and

wherein the partition wall has an aperture through which air is blown by the means to cause an airstream to provide the airstream for the airborne suspension of the mineral salts dispensed by the dispensing means at a dose according to the severity of the condition over a treatment period by a timer between 15-45 minutes effective for exposing the animal to an airstream which contains the suspension, whereby the salts are inspired; keeping the animal in the animal area for a period sufficient for the salts to be consumed by inspiration of the animal or deposited on the animals skin;

the animal area of the treatment chamber further comprising a strip of about 1 metre wide on the floor adjacent the animals being treated covered with a chemical desiccant to a depth of 20-25 mm, wherein the treatment chamber includes panels which are coated with desiccant for covering the ceiling and walls of the animal area to reduce humidity in the room caused by the expiration and perspiration of the animals therein.

2. The treatment chamber as claimed in claim 1, wherein the floor of the animal area is concrete and a strip 1m wide 14 is covered with chemical desiccant to a depth of 20-25mm-.

3. The treatment chamber as claimed in claim 1, wherein the finely divided mineral salts are dispensed into the airstream at a predetermined dispensing rate of 5, 10, 15, 20 mg/m3 of the animal area volume per treatment period.

4. The treatment chamber as claimed in claim 2, wherein the chemical desiccant is a mixture of vermiculite, perlite and calcium chloride to a depth of about 20-25 mm.

5. The treatment chamber as claimed in claim 1, wherein the animal area floor is spread with a particulate drying agent.

6. The treatment chamber as claimed in claim 1, wherein at least part of the animal area floor is impervious in order to retain desiccant.

7. The treatment chamber as claimed in claim 1, wherein the dose may vary according to the severity of the condition 5g, 10g, 15g and 20 g/m3.

8. The treatment chamber as claimed in claim 1, wherein the animal area includes a desiccator which can be covered and uncovered in order to remove excess water vapour from the air.

9. The treatment chamber as claimed in claim 1, further including an electronic timer which allows an operator to select the treatment period.

10. The treatment chamber as claimed in claim 1, further including an air conditioner circuit which is controlled by a thermostat to adjust the temperature of the animal area.