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08 December 2009

Honey and Blanckenberg
Harare

Dear Sir/Madam

Request for certified copy of Provisional Patent Application No. 20/2008

Annexed hereto is a true copy of the documents as originally filed in connection with the Provisional Application identified therein. The Provisional Application Registration No. 20/2008 was filed on the 7th October 2008, entitled 'METHOD OF WILDLIFE CONTROL BY MEANS OF CHILLI GAS DISPENSER' made by Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), A French parastatal organization, of 42 rue Scheffer, Paris 75116, France.

Yours Faithfully

[Signature]

W. Mupaso
For: Controller of Patents, Trade marks and Industrial Designs.
ZIMBABWE

Form P.1

Sections 6, 7 and 26 of the Act
Section 3 of the regulations
Official fee : USD40.00

PATENTS ACT; CAP. 26:03

Application for a Patent
(Non-Convention)

I/We, Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD)

A French parastatal organisation of 42 rue Scheffer, Paris 75116, France
do hereby declare:

1. That I/we am/are the owner of an invention in respect of ZIMBABWE by having invented it/by having acquired it by assignment and which invention is described in the accompanying provisional/complete specification under the title - Method of wildlife control by means of chilli gas dispenser.

2. That I/we claim to be the inventor thereof.

3. That I/we are the assignee(s) of:
   1. Michael LA GRANGE citizen of Zimbabwe
   2. Joshua John MOSTERT citizen of South Africa

Of (both) c/o CIRAD Zimbabwe, 37 Arcturus Road, Harare, Zimbabwe

4. That to the best of my/our knowledge and belief, the statements made above are correct and there is no lawful ground of objection to the grant of a patent to me/us on this application, and I/we pray that a patent may be granted to me/us for the said invention;

And I/we request that all notices, requisitions relating to this application may be sent to:

HONEY & BLANCKENBERG
200 Herbert Chitepo Avenue
P O Box 85, Harare

whom I/we hereby appoint, with power of substitution, to act for me/us in all matters relating to this application and any letters patent granted thereon.

DATED this 7th day of October 2008

for

The Registrar
The Patent Office
Harare
ZIMBABWE

FORM P.4

Sections 8 and 9 of the Act
Regulation 3 (2)

PATENTS ACT, CAP. 26:03
Provisional Specification

CERTIFIED A TRUE COPY

Register of Trade Marks
Date: 09.12.2009

TITLE OF INVENTION: Method of wildlife control by means of chilli gas dispenser.

I/We, Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD)

A French parastatal organisation

of 42 rue Scheffer, Paris 75116, France

do hereby fairly describe the invention in the following provisional specification:
Title: Method of wildlife control by means of chilli gas dispenser.

Introduction: The present invention is a gas-dispenser of powdered chilli (Capsaicin) or chilli oil extract, useful in the management of wildlife, particularly in human-elephant conflict situations.

With the expansion of human settlements into wildlife areas, local communities living in marginal land adjacent to protected areas are faced with increasing occurrences of crop raiding by wildlife, granary destruction and in some cases human casualties and even death.

Elephant is the main species involved in problem animal control, with crop-raiding and destruction by elephants reported in some areas to be more than half of the anticipated yield of cotton, maize, sorghum, millet and peanuts. Additional indirect problems are restrictions on people's ability to travel or access resources such as water, firewood, thatching grass; guarding property against wildlife; negative attitudes towards wildlife; and increase of unsustainable and unregulated hunting.

Current methods of managing this human/wildlife conflict have been mostly external (requiring outside intervention) and centralized (requiring authority from a district or central authority). They have been both expensive (use of ammunition, guns, vehicles, etc), ineffective or temporary (e.g. using firearms to scare-off wildlife) and methods to which wildlife has become habituated. Farmers' groups have been trained to use non-lethal methods such as vigilance to the presence of approaching wildlife, passive methods aimed at impeding the passage of potential crop-raiding animals using simple physical barriers and deterrents, and active methods to scare off crop-raiding animals using various disturbance measures such as fires, noisemakers and chemical deterrent. Utilisation of chilli pepper as an active method has been tested but not on a big scale with rural communities due to the cost of commercial products and the difficulty of purchase from external sources.
The invention: The present invention is a method for managing wildlife. It is a gas dispenser of chilli powder or chilli oil extract for use against crop-raiding animals, and which is particularly effective against elephant. The device is a gas-filled dispenser which fires balls filled with either chilli powder or chilli oil extract by means of propellant of any household aerosol.

Tests on elephants show that the chilli-filled balls fired from distances ranging from 15 to 50 metres break on impact with the animal, or upon the ground in front of it, releasing the chilli oil extract onto the animal, and causing most animals to run away.

The proportion of elephants running away or backing up without being sprayed by the chilli powder or oil extract suggest that the noise and/or the impact produced also have a significant deterrent effect.

An embodiment of the invention, and a means of use and method of construction is further described in detail with reference to the accompanying drawings.

In Figure 1 the dispenser (1) is built with two pieces of pipe. A first section pipe (2) is the combustion chamber which is closed at the one end (3) by a backing cap and at the other end by a section of pipe of a lesser diameter (4) which forms the barrel.

The trigger mechanism is an igniter (5), such as a propane-gas lighter, which is attached to the dispenser. Two wires (6) connect the igniter (5) to the combustion chamber (2) by means of two electrical connectors (7) and self tapping screws (8) which screw through the wall of and into the combustion chamber (2) where they act as sparking pins.

Ignition of such device may be triggered manually or by means of a trip wire.

Figure 2 shows the projectile. The projectile may be a standard ping pong ball.
(1). A hole (2) is made in the ball to enable filling with chilli powder or chilli oil extract by means of a syringe and large bore needle (3). Once the ball has been filled, the ball is closed by means of wax, or by the insertion of a screw to improve accuracy.

The oil filled ball is loaded into the dispenser by means of removing the screw-on backing cap, inserting the ball through the combustion chamber and seating the ball tightly into the base of the barrel. The loaded ball thereby creates a seal between barrel and combustion chamber.

To fill the combustion chamber with gas, the screw-on backing cap is removed and a propellant is inserted into the combustion chamber (4). The propellant may be sourced from any domestic aerosol. The screw-on backing-cap is then quickly and securely replaced before the dispenser is aimed and fired.

The gas is ignited by the spark created between the two firing pins by the trigger mechanism. Expansion of the gas by resultant combustion forces the ball down the barrel at high velocity.

A minimum of one minute is required to properly load the dispenser ready for firing again.

Other embodiments can be envisaged within the scope of the present invention.

Some advantages of the present invention over known methods of wildlife control are noted :-

- For any human/wildlife conflict management strategy to succeed it must be sustainable. The device according to the present invention can assist a local community to administer an effective management programme.

- The device is not dangerous; it causes discomfort but no damage to
animals, humans or property.

- Use helps to reduce crop loss and to improve livelihood security of small-scale farmers.
- Materials are mostly available locally and are not expensive.
- The device is easily operated.

DATED this 7th day of October 2008

Signed: [Signature]

For HONEY & BLANCKENBERG

Agents for the Applicant