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An Improved Method of...

UTILISING STRYCHNINE
IN THE PREPARATION OF
DINGO AND FOX BAITS

By L. A. HARRISON, M.D.A., Research Technician, Agriculture Protection Board.

At present dingo and fox baits are made from fat or other material attractive to the animal to be poisoned, into which is inserted either alkaloid or soluble strychnine.

The strychnine used in the past suffers from several disadvantages—the greatest of which is the bitter taste—some of which invariably finds its way on to the outside of the bait. Besides the two chemical forms of strychnine mentioned above the poison also comes in three mechanically different forms. These are:

(a) Crystalline.
(b) Powder.
(c) Tablets.

It is extremely difficult when making small baits with either (a) or (b) to prevent poison contaminating the outside of the bait material being handled. It only takes a slight puff of wind or an unsteady hand to result in the poison, with its accompanying bitter taste, being spread over the outside of the baits.

Another difficulty in using crystalline or powdered strychnine in the field is the problem of accurately metering out a measured dose of the poison. It is often claimed that a large overdose sometimes results in the animal regurgitating the bait, whereas too little could educate the animal against future baiting.

With the tablets the problem is not quite so acute but it is often found that after handling several of these that a slight amount of powder adheres to the person’s hands or to the tray on which the baits are being made. In consequence, as a fresh bait is handled, some of this attendant bitter powder is transferred. (With tablets there is no problem in measuring the quantity as they are prepared and sold as $\frac{1}{2}$-gr. tablets.)

It was with this background of unsatisfactory preparation of strychnine baits that it was decided to investigate the use of a stable suspension of the poison in a thick gelatinous carrier. Several such carriers came under review, namely, gelatine, alginates and methyl cellulose.

It was decided that the physical properties of the methyl cellulose were what was required for this preparation. The biggest factor in favour of the methyl cellulose was its increased resistance to bacterial breakdown.

Gels of varying strength were prepared to see if a stable suspension could be achieved. It was found that a concentration of 2 per cent. had the two desired characteristics, viz.:

(a) The concentration was suitable for suspending powdered alkaloid strychnine in the required dose.

(b) It was of such consistency as would pass through a heavy gauge hypodermic needle.
A stock suspension was made in which half of a grain of alkaloid strychnine was dispersed evenly throughout each one quarter c.c. of the 2 per cent. gel.

It is then an easy matter for a person using this material to pump 1/4 of a c.c. into each bait, safe in the knowledge that it contains a measured amount of strychnine sufficient to kill the average dingo, wild dog or fox.

This preparation was first made to impregnate turtle eggs found near Port Hedland with strychnine as a fox bait. The idea was so attractive that it was then investigated as a method of making all types of strychnine dog and fox baits.

Another possibility was also explored, viz., the coating of the present strychnine tablet with a thin layer of methyl cellulose gelatine, which on exposure to air, hardens and forms a protective coating. This coating dries quite hard and without taste. Therefore, tablets treated in this manner could be handled without any fear of the taste of strychnine being transferred to the outside of the bait. However, it is recognised that this might possibly increase the hazards of strychnine tablets to human beings who may mistake them for other similar sized tablets, there being no accompanying bitter taste to act as a deterrent. Consequently the idea was not investigated any further.

In preparing a mixture suitable for poisoning meat baits etc., the following method needs no complex measuring or weighing devices—merely a half pint bottle or measure.

As many farmers have small hypo syringes, these will only need to be fitted with a large-bore bleeding needle to allow a free flow of the gelatine. (Methyl cellulose or "Cellofas" is available from the stock firms at approximately 10s. per lb.).

One sixth ounce of methyl cellulose is mixed into half a pint of cold water and allowed to stand for 10-12 hours to dissolve completely. Pour off half the gelatine in the half pint container and add the powdered alkaloid strychnine powder; stir thoroughly while adding the balance of the gelatine—discard any surplus. If the mixture has been thoroughly stirred each 1/4 c.c. will now contain 1/16-grain of the powdered alkaloid poison—sufficient to poison one dingo or fox bait.

The mixture flows freely from the syringe and care is needed to see the baits are not overcharged with poison. Care should be taken to see that the mixture is kept in an airtight container.

If not exposed to the air, the mixture should keep indefinitely. However, if not kept in a sealed container the mixture will dry out and will not pass through the needle.

**SUMMARY**

(a) A 2 per cent. methyl cellulose gelatine was found suitable for the suspension for alkaloid strychnine powder for use in poisoning dingoes, wild dogs and foxes.

(b) This suspension was capable of administration through a large bore hypodermic needle.

(c) A suitable concentration for strychnine was worked out so that half a grain (sufficient to kill dingo, wild dog or fox) could be conveniently contained in 1/4 of a c.c.

(d) Some thought was given to the coating of strychnine tablets with a non-tasting gelatine such as methyl cellulose which would harden on exposure to air. However it is considered that an added hazard to the public health might be created by such a practice.

(e) The method of preparation and use is described.