

GAME MANAGEMENT SESSION

TRAPPING AND HANDLING EUROPEAN WILD HOGS *

By GEORGE H. MATSCHKE
Tennessee Game and Fish Commission

The population of European wild hogs (*Sus scrofa*) of the Tellico Wildlife Management Area in Tennessee is a result of stocking 13 animals in the spring of 1912; these were relocated on a private hunting preserve, located at Hoopers Bald, Graham County, North Carolina. The preserve was not open for hunting until the early 1920's. During the first hunt approximately 100 animals escaped from the split rail enclosure in which they had been captive for the previous ten years. The present wild hog population originated from those animals or progeny (Jones, 1957).

Literature pertinent to the species in North America did not contain adequate information for management; therefore, a full-time life history study was initiated in August, 1959. To obtain the desired basic information it was necessary to trap and handle these wild hogs. This is a progress report on the trapping and handling procedures.

MATERIALS AND METHODS

Two types of traps were used. One was a permanent pen trap and the other a portable chain-linked wire trap.

Permanent pen traps were erected near streams or trails and their sizes were not standardized. Average measurements were 12 feet long by 8 feet wide by 6 feet high. The traps were constructed with hog wire fastened to 8 feet posts sunken 2 feet in the ground. A vertical sliding door was closed by a mechanism manually triggered by the feeding hogs. The trigger consisted of two 12 inch wooden pegs and an 18 inch wooden cross bar. Pegs were driven approximately 4 inches into the ground at the rear of the trap, approximately 15 inches apart. Staples were driven into the pegs about 2 inches from the top and facing the rear of the trap. The cross bar fitted beneath the staples with a string tied from the crossbar to the raised door. Shelled yellow corn was used as bait and a scattered trail led into the trap. Specific care was taken to put large quantities of corn beneath the cross bar. Feeding hogs disengaged the crossbar beneath the staples, releasing the door.

Portable chain-linked wire traps in use are of the box type. Trap frames are $\frac{3}{4}$ inch galvanized pipe, 7 feet long by 3 feet wide by 4.5 feet high, and completely covered, except for the entrance, with number nine gauge chain-linked fence wire. The door is a plywood panel fixed in a galvanized pipe frame which is fitted to slide vertically on enclosed rollers inside a metal channel frame available commercially. Door and trap frames are bolted together, and the trigger mechanism is the same as used in the pen trap. Basic design of this trap was developed by the former project leader.

Movable traps were located near feeding areas, wallowing holes, or in areas past experience has shown to be good trapping sites. To insure protection for captured hogs from direct sunlight all traps were set beneath foliage.

Trapped hogs were restrained by ropes and canvas straps during the preliminary studies prior to August, 1959. In August, 1959, experiments began with immobilizing drugs delivered by an automatic projectile syringe fired from a gas (CO₂) operated projector (Crockford et al., 1957). The earlier drugs used were nicotine and Trilafon (Schering Corporation, Union, New Jersey) and in June of 1960 Cap-Chur-Barb (Palmer Chemical and Equipment Company, Atlanta, Georgia) was demonstrated. Since demonstration Cap-Chur-Barb has been used for immobilizing trapped hogs.

The dosage of Cap-Chur-Barb prepared in a projectile syringe for immobilizing a trapped hog is 500 mg. per 15 pounds of body weight. The hog

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is then maneuvered into a position that will allow an intramuscular injection into the hindquarters. After a period of 45 minutes if the animal is not immobilized an adjusted second dosage is administered. This adjusted dosage usually consists of approximately $\frac{1}{4}$ the original amount depending on the degree of immobilization. When the desired effect is attained the hog is removed from the trap, and the weight and body measurements are recorded. Due to complete muscle relaxation the mouth is easily opened with a swine mouth speculum for examination of tooth eruption and wear. Measurements are made on the male's lower canines' surface wear which results from the grinding of the upper and lower canines. The female's canines do not develop as the male's, and are not measured.

All animals are examined for external parasites, and the adults are then eartagged with a number 51 Hasco tag while immature animals are ear-notched. An injection of 400,000 units of penicillin and 100,000 units of dihydrostreptomycin is given as a bacterial prophylaxis. The area of drug injection is covered with an antiseptic and in the summer sprayed with an insecticide to prevent entrance of screwworms. Animals are then placed in the trap to prevent possible predation by bears and dogs. After complete recovery the animals are released.

ACTION OF DRUG

Cap-Chur-Barb is a combination of 500 mg/cc of pentobarbital sodium and 1 mg/cc of scopolamine hydrobromide. Pentobarbital sodium is a barbiturate whose major action is to depress the central nervous system, affecting the cortex of the brain and probably the thalamus. It depresses the motor and sensory areas of the brain and induces sleep. The drug is distributed more or less throughout the body and is eliminated by renal excretion in the urine or by destructive oxidation in the liver (Jones, 1957).

Scopolamine hydrobromide is a parasympatholytic drug which complements the action of the pentobarbital sodium by blocking the action of acetylcholine upon the effector cells of the cholinergically innervated viscera (Jones, 1957).

The antidote for Cap-Chur-Barb is amphetamine.

RESULTS

There is usually no response to the drug until 8 to 10 minutes after the injection. The hog will then exhibit swaying in the hindquarters, assume a sawhorse stance, and sometimes the snout is used as a prop. The hog normally remains on its feet during the induction stage of anesthesia. When the hog is no longer able to stand, and collapses, a brief period of minor excitement may be elicited if handled too quickly; therefore, a few minutes should be allotted for complete surgical anesthesia to occur. The time required for immobilization and recovery is dependent upon the dosage of the drug and the weight of the animal. The dosage of 500 mg. per 15 pounds of body weight will normally immobilize a hog within 20 to 40 minutes, rendering immobilization for a minimum of three hours. (Table 1). The prolonged action of the drug may be accounted for by its persistence in the cerebro-spinal fluid (Jones, 1957).

This procedure has proven very satisfactory and since June, 1960, 105 trapped hogs have been immobilized without mortality.

DISCUSSION

Both types of traps are effective in catching hogs. Adult hogs are seldom caught together in the same trap; only on three occasions has this happened, whereas, up to six immature hogs have been trapped at one time. There are signs indicating that some hogs may be trap-shy; whether these hogs have been previously trapped is not known.

The advantages of the portable chain-linked traps over the pen type are that they are movable and escape-proof. The disadvantage is the construction cost. The pen type traps were in constant need of repair, and their use was finally discontinued.

Handling trapped hogs by ropes and straps usually resulted in injury to the hog's snout, and this method forced the handlers to work under potentially

TABLE 1: IMMOBILIZING TRAPPED EUROPEAN WILD HOGS WITH CAP-CHUR-BARB

Tag Number	Weight (pounds)	Sex	Milligrams		Minutes required to take effect	Minutes immobilized
			Initial dose in milligrams	per pound of body weight		
521-522	54	F	500	9.2	Not effective	
349-350	138	F	1100	7.9	Not effective	
359-360	118	F	2500	21.2	Not effective	
513-514	43	F	1000	23.2	12	277
517-518	39	F	1000	25.6	16	270
505-506	150	F	2500	16.6	Not effective	
756-757	109	F	3000	30.0	23	244
763-764	112	F	4000	35.7	21	307
763-764	124	F	3500	28.2	23	216
494-495	41	F	750	18.2	38	154
756-757	108	F	3000	27.8	46	213
704-765	136	F	4500	33.1	9	over 240

dangerous circumstances. While being weighed, a 215 pound boar severely lacerated the legs of one handler, cutting through his boots, when the hog escaped his restraining ropes and attacked. The possibility of injury by a hog to the trappers is almost nonexistent when the animal is immobilized with Cap-Chur-Barb.

The drugs, nicotine and Trilafon, were not satisfactory for immobilizing trapped hogs. A high mortality occurred with nicotine while Trilafon, a tranquilizer, still required the hog to be restrained by ropes and straps.

The wide margin of safety in Cap-Chur-Barb is the big factor in handling trapped hogs without mortality, and there has never been an occasion for administering the antidote. Only one person is required to handle an immobilized animal. The disadvantage of the drug is its prolonged action which renders the trap inoperative until recovery and release of the animal.

SUMMARY

Two types of traps were used for trapping the European wild hog, a permanent pen and a portable chain-linked trap.

Cap-Chur-Barb, a barbiturate type drug, used at the rate of 500 mg/15 pounds of body weight has immobilized 105 trapped European wild hogs without mortality.

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LITERATURE CITED

- Blair, F. W., et al., 1957. *Vertebrates of the United States*, McGraw-Hill Book Company. New York. xi + 819.
- Crockford, J. A., et al., 1957. *Nicotine Salicylate for Capturing Deer*. J. Wildlife Management. 21:213-220.
- Jones, L. M., 1957. *Veterinary Pharmacology and Therapeutics*. The Iowa State College Press, Ames, Iowa. xii + 850.
- Jones, P., 1959. *The European Wild Boar in North Carolina*. N. C. Wildlife Resources Commission. 28 p.

PRELIMINARY X-RAY STUDIES OF DEER PRODUCTIVITY NEAR CROSSVILLE, TENNESSEE

By JAMES C. LEWIS

Tennessee Game and Fish Commission

ABSTRACT

Handling techniques for x -raying trapped doe deer are described. Myothesia was used as an anaesthetic at the rate of 1.5 cc. per 5 pounds body weight. A portable x -ray machine with maximum output of 30 MA and 80 KV was used to x -ray eight dead and forty-eight live deer. Pictures were made of yearling deer (12-14 cm. width) at 0.5 second exposure time, 36-inch focal-film distance, 25 milliamps and 65 kilovolts. Machine settings were the same for older deer, except kilovoltage, which increased 2 kilovolts per cm. of deer width.

Radiographs indicated that 52 deer contained an average of 0.83 fetus and none of the 23 yearlings were shown to be pregnant. The adult does averaged 1.5 fetuses. Aging of fetal images on the x -ray is discussed. Evidence of prenatal mortality was not found.

INTRODUCTION

The ability to predict the annual fawn crop is necessary for good deer herd management. Variations in productivity are related to age composition of the