

IMMOBILIZING EUROPEAN WILD HOGS WITH CAP-CHUR-GEM¹

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ABSTRACT

Cap-Chur-Gem was injected intramuscularly into 22 pen-reared and six wild trapped European wild hogs. In pen-reared hogs, complete immobilization occurred in 13 hogs (68 percent) at dosages of 1 cc./9.9 to 1 cc./18.6 pounds of body weight and incomplete immobilization occurred in six hogs within the same dosage range. The remaining three pen-reared hogs showed little or no effects when injected with dosages smaller than 1 cc./19.0 pounds. Three of the wild trapped hogs were immobilized at dosages of 1 cc./10 pounds and three were not immobilized at dosages of 1 cc. per 14 to 20 pounds. The time from injection to immobilization varied from 6 to 62 minutes and averaged 25.3 ± 8.4 minutes for pen-reared hogs. Time from injection to immobilization and recovery for wild trapped hogs averaged 27.7 and 79.0 minutes and varied from 2 to 69 and from 51 to 135, respectively.

The recommended dosage is 1 cc./15 pounds body weight. Cap-Chur-Gem is an effective drug for immobilizing European wild hogs, but it possesses no advantages over Cap-Chur-Barb.

Cap-Chur-Gem was found to be an effective drug for immobilizing European wild hogs (*Sus scrofa*). Effective immobilizing drugs are useful in handling hogs because they reduce chances of injury to the hogs and handling personnel and allow research procedures to be conducted more easily and effectively. It was intended that immobilization would facilitate the following procedures: tagging (Matschke, 1962) and ear notching (Winters, 1952) for identification, examining for external parasites and dental pattern (Matschke, 1967), measuring for growth studies, and blood sampling for chromosome counts (Rary, *et al.*, 1968), hematologic determinations, and recording of blood parasitism. The purpose of this study was to evaluate one immobilizing agent, Cap-Chur-Gem, for use on European wild hogs. Evaluation of Cap-Chur-Barb (Henry and Matschke, 1968) was reported earlier.

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PROCEDURE

Wild and pen-reared hogs (progeny of wild trapped and confined hogs) were used in this study. Trapping methods are described by Matschke (1962). Cap-Chur-Gem was injected intramuscularly into the large muscle of the hip or thigh either by an automatic projectile syringe fired from a carbon dioxide projector (Crockford, *et al.*, 1957) or by a hand syringe. An adjusted second dosage was administered if immobilization did not occur in 45 minutes. Time of injection, immobilization, and recovery were recorded when possible.

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After immobilization the hogs were tagged, ear notched, and examined and all pertinent data were recorded and material collected. The wild hogs were placed back into the trap to prevent predation by bears and dogs and then released when completely recovered.

ACTION OF DRUG

Cap-Chur-Gem contains 500 mg. of pentobarbital sodium, 100 mg. of alkaloidal nicotine, and 1 mg. of scopolamine hydrobromide per cc. Pentobarbital sodium, a barbiturate, depresses the central nervous system, affecting the cortex of the brain and probably the thalamus. It induces sleep by depressing the motor and sensory areas of the brain.

Scopolamine hydrobromide is parasympatholytic and complements pentobarbital sodium by blocking the action of acetylcholine upon the effector cells of the cholinergically innervated viscera (Jones, 1965).

Nicotine is a ganglionic blocking drug. It temporarily stimulates the ganglia of the central nervous system and then this system is severely depressed by a descending paralysis of all ganglia of the autonomic nervous system. This drug may produce convulsions and fatal respiratory paralysis (Jones, 1965).

RESULTS

Twenty-two pen-reared hogs were injected with Cap-Chur-Gem at dosages ranging from 1 cc./9.9 to 1 cc./30.7 pounds body weight (Table 1). Thirteen of these hogs (68 percent) were completely immobilized at dosages of 1 cc. per 9.9-18.6 pounds. Amphetamine, an antidote, was administered to two of these hogs as a safety precaution. Cap-Chur-Gem was semi-effective on six other hogs in the same dosage range. Little or no effects were recorded for three animals administered dosages lighter than 1 cc./19.0 pounds and no deaths were recorded. The time elapsed from injection until immobilization was recorded for six hogs which were completely immobilized and this time averaged 25.3 ± 8.4 minutes and varied from 6 to 62 minutes.

TABLE 1. Effects of Cap-Chur-Gem on Pen-reared and Wild Trapped European Hogs

Dosage (cc./lb.)	Weight (lbs.)	No.	Satisfactory		Unsatisfactory No.	Remarks
			Time (in Min.) Immobilization	from Inj. to Recovery		
Pen-reared hogs:						
1/10	99	0			1	Semi-effective
1/12	59.5	1	30		0	
1/13	93-93.5	1			1	Semi-effective
1/14	97	1	30		0	
1/15	103	1	6	26+	0	
1/17	86.5-119	3	10		1	Semi-effective
1/18	123-129	5	62	80+	3	Semi-effective
1/19	130-135	1	14		1	No effect
1/25	100*	0			1	Little effect
1/31	300*	0			1	Little effect
Totals	59.5-300	13	6-62	26+ - 80+	9	

* Estimate.

Dosage (cc./lb.)	Weight (lbs.)	No.	Satisfactory		Unsatisfactory No.	Remarks
			Time (in Min.) Immobilization	Recovery		
Wild trapped hogs:						
1/10	96-100	3	2-69	51-135	0	
1/14	96	0			1	Semi-effective
1/20	140-160	0			2	Little effect
Totals	96-160	3	2-69	51-135	3	

Six wild trapped hogs were injected with dosages ranging from 1 cc./9.6 pounds to 1 cc./20.0 pounds. The three hogs with dosages of 1 cc./10 pounds were immobilized. The time elapsed from injection to immobilization and recovery averaged 27.7 and 79.0 minutes and ranged from 2 to 69 and from 51 to 135 minutes, respectively. The remaining three hogs were not immobilized at dosages of 1 cc. per 13.7-20.0 pounds.

First responses to Cap-Chur-Gem usually occur in 8-10 minutes following injection. Swaying in the hindquarters, a sawhorse stance, and use of the snout for a prop are then characteristic. The hog normally remains on its feet during the induction state of anesthesia. A period of excitement often precedes immobilization. A few minutes should be allotted after the hog becomes recumbent.

DISCUSSIONS AND CONCLUSIONS

Other studies conducted by the authors and the long time required for immobilization and recovery did not often allow observations concerning the time required for immobilization and recovery. This is the reason for the omissions in Table 1.

Dosage recommendation for Cap-Chur-Gem for European wild hogs, based on the data presented, is the same as for Cap-Chur-Barb (Henry and Matschke, 1968), 1 cc. per 15 pounds of body weight. First responses at this dosage usually occur in 8-10 minutes and immobilization lasts several hours. At this dosage Cap-Chur-Gem is an effective drug for immobilizing European wild hogs. It fulfills the desires expressed in the introduction concerning tagging, ear notching, examining, collecting material, and recording data. Advantages of using Cap-Chur-Gem in handling trapped wild hogs are that only one person is needed to handle animals and handling personnel and hog are relatively safe from injury. Disadvantages are the time required for immobilization to occur and the prolonged effect of the drug, which renders the trap inoperative until recovery and release of the hog. Smaller hogs can be handled more quickly by man-handling but Cap-Chur-Gem is useful in handling adult hogs weighing 150 or more pounds, especially boars.

However, Cap-Chur-Gem has no apparent advantages over Cap-Chur-Barb for use on European wild hogs. Although claimed to be faster acting the results do not bear this out for European wild hogs. The safety margin should not be as wide for Cap-Chur-Gem because it contains nicotine, but no mortality was recorded at the dosages used.

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FAWN MORTALITY IN A CONFINED VIRGINIA DEER HERD

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INTRODUCTION

This paper reports on sex-specific fawn mortality of an expanding herd of 200 to 450 white-tailed deer (*Odocoileus virginianus*) being studied in a 2,322-acre enclosure at Radford Army Ammunition Plant, Dublin, Virginia since 1965.

The habitat is rolling, abandoned pastureland with occasional clumps of mature hardwoods, scattered cedars (*Juniperus virginianus*), and several young shortleaf pine (*Pinus echinata*) plantations. An extensive road system provides good visibility of nearly 90% of the area. Although the 8-foot high fence does not confine all deer, there appears to be little movement of animals out of the enclosure. The study site permits daily observations of large numbers of deer and the easy capture of fawns.

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FAWN CAPTURE TECHNIQUES

Experience of 5 years in marking 258 fawns resulted in development of a successful technique for capturing fawns. Behavior patterns vary between individuals, making it difficult to establish firm procedural guidelines. Our success in capturing nearly half of the fawn population each year of the study can be attributed to our having followed three practices: (1) in the interest of efficiency, ignore groups of deer and concentrate on single does, (2) do not leave the vehicle until a fawn is sighted, and (3) make a noisy, fast approach. Fawns older than 1 week are too fast for a man on foot to capture, but fawns up to 3 weeks of age have been captured by a trained dog. Details of this method for capture and marking of fawns have already been described by Downing and McGinnes, 1969.

FAWN MORTALITY

Hundreds of hours of observations following capture and release of fawns have yielded recovery of the carcasses of only 8 marked animals

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