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STATUS OF M-44 DEVICE

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Introduction

The purpose of this paper is to report on the current status of M-44 (sodium cyanide) capsule and its use. I have included information received from other states and entities that have a registration for M-44s, included some historical information concerning the M-44 program and the current source of supplies.

The M-44 was invented in the mid-1960s (Poteet 1967) to replace the primer powered cyanide ejector known as the "coyote getter" (Young and Jackson 1951). The M-44 was to reduce some of the human hazards inherent with the pistol cartridge fired cyanide dosage. The M-44 works on the same principle but uses a spring propelled rather than a primerpowered ejection device to propel the cyanide dosage into the mouth of the predator. After several years of field testing, M-44s officially replaced coyote getters in the Animal Damage Control (ADC) program in 1970 (Bacus 1969 and Bacus.n.d.).

A trend in environmental awareness surfaced in the 1960s that caused closer scrutiny of the ADC program. Such books as "Must They Die?" (McNulty 1971) and Slaughter the Animals, Poison the Earth (Olson 1971) increased public awareness of animal damage control techniques (Wagner 1988). The use of poisons to kill predators increasingly came under criticism

(Di Silvestro 1985). In 1971, spurred by lawsuits from animal welfare groups over program use of toxicants, the Secretary of Interior and President's Council on Environmental Quality (CEQ) appointed a seven-person Advisory Committee on Predator Control. The Chairman of the Committee was Stanley Caine. The advisory Committee's report (published in 1972) is commonly known as the Caine report. The Caine report was generally critical of Federal predator control efforts. The report recommended that immediate congressional action be sought to remove all toxic chemicals from registration (USDA APHIS 1993). As a result of the recommendations in the Caine report, President Richard Nixon signed Executive Order 11643 on February 8, 1972, banning the use of toxicants for predator control by Federal agencies or for use on Federal lands. EPA followed President Nixon's order by canceling the registration of the chemicals Compound 1080, strychnine, sodium cyanide, and thallium sulfate. President Gerald Ford amended the Executive Order 11643 in 1975 to allow the experimental use of sodium cyanide in a control device called an M-44 in severe depredation situations (Executive Order 11870). Executive Order 11643 was amended again in 1976 (Executive Order 11917) to allow the registration of sodium cyanide for predator control.

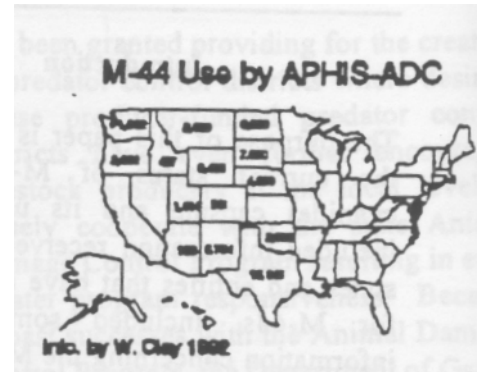
Methods and Results

Brief telephone surveys, personal contacts and review of print materials were used to compile this report.

EPA acted to halt use of sodium cyanide and the other two major predicides on the basis of finding that the compounds posed unacceptable hazards to man and other non-target species. New evidence to the EPA on sodium cyanide's delivery through the M-44 device significantly altered the earlier risk/benefit assessment and permitted new registration of the compound. USDA-APHIS-ADC (1993) evaluated potential impacts associated with exposure to pesticides. That risk assessment procedure showed sodium cyanide capsules received the highest cumulative score of the products tested based on potentially exposed threatened and endangered species and the highly toxic nature of the active ingredient. Environmental fate did not contribute significantly to the cumulative score. The M-44 sodium cyanide ejector was registered in 1975 by the EPA after an abbreviated but extensive research effort (Matheny 1976). Connolly (1988) reported that use of the M-44 has steadily increased in the ADC program, with coyote take by M-44s in 1986 almost double that of 1981. William F. Clay (person. comm.) reports in FY91 that 56,728 capsules were used and 28,542 animals taken. In FY92 that 53,807 capsules were used and 29,188 animals taken.

The following chart (Fig. 1) lists the number of sodium cyanide (M-44) capsules used by the federal ADC program.

Fig. 1



States and entities other than APHIS-AD also use the M-44 in control program (Fig. 2). These groups purchase M-4 capsules and equipment from APHIS-ADC

Registration to M-44 use other than APHIS 3-ADC



Kansas

In Kansas the program has evolved with cooperation of the Kansas Cooperative Extension Service (CES). By regulatory authority, CES is required to conduct an educational program in animal damage control. The Extension Specialist is also required to provide written approval before the use of M-44s can be allowed in Kansas.

By early mutual agreement between the Kansas Department of Wildlife and Parks (KDWP) and the CES, KDWP was to purchase the equipment and provide it to CES and CES would conduct the educational program and training in the use of the technique. This arrangement has worked well to date. Training in use of *M-44s* is provided by CES and consists of pesticide use and safety, predation identification, coyote biology, control alternatives, and a written test on procedures and EPA restrictions. Demonstrations on practical use of the M44 is provided. Producers are certified as private pesticide applicators by the State Board of Agriculture. Cost for such certification is \$10 for five years. There is no cost for the producers to use the equipment but they must pay for capsules used. Use of the *M-44* is very low in Kansas. A range of from 1-17 producers use the *M-44* program per year.

Registration costs are borne by KDWP. The state pesticide registration for one label is \$130, The 1990 Farm Bill allowed minor use registration to be exempt from the EPA fee of 5650 if sufficient documentation was provided. Kansas has been exempted from this fee but is still in the process of getting a EPA registration

for *M-44* use so that product can be purchased.

Montana

The Department of Livestock is the registrant of M-44 predicide. The M-44 is the "mainstay of the Montana ADC program." Department of Livestock, the dealer, places orders through Pocatello for capsules and devices. Program use is about 1000 capsules per year. Department of Agriculture develops protocol for testing and certification of private, commercial and government applicators. They are required to have a license and certification. Private licenses are good for 4 years and cost \$15. Commercial and government applicators must renew their license each year at a cost of \$45/year. Licensing is done on demand on a case by case basis. Certification consists of written and handson training in safety, use regulations, record keeping. Written tests are given for certification requirements. About 40-50 applicators including APHIS-ADC staff use the program each year

New Mexico

The Department of Agriculture issues a certificate of compliance licensing. This licensing is for both private applicators and APHIS-ADC staff. A private rancher goes through training and certification. The test includes 25 written questions and a handson practical test. A \$5 certification fee is good for 5 years. Licensing is good for 1 year with renewals available. Capsules or hardware cannot be purchased until certified. Usually about 85 people/year are certified but now have 112 certified. Of this 112 only 34 active users, but 37 other federal ADC employees are

Historical use was about 300 capsules/ year prior to this year, but now use about 1500 capsules. Program is working fine, but could be made easier to get antidote since it is a prescription item.

South Dakota

The South Dakota Game Fish and Parks operates a M-44 program. M-44 use is only by the ADC staff. South Dakota does not desire to have a M-44 program by the private sector because of concerns about misuse. They have 22 people certified for operational use. Training is about 2 days. The M-44 is an important ground control tool for predators. About 2186 coyotes or 40% of the total are taken with M-44s.

Texas

The Texas Department of Agriculture (TDA) approves dealers who are approved by the State Director of APHIS-ADC. A dealer is defined as pesticide dealer with at least one employee certified as an applicator. Not more than 1 dealer per county. All orders for M-44s go through TDA.

About 1500 applicators go through training program that includes identification of predation, alternative methods of control, M-44 use and training, but only about 150 users of devices. In addition more than 200 ADC staff are licensed in Texas. TDA has a memorandum of understanding to conduct testing. Training has some hands on practice. A pesticide applicator license is required to go through training. There are some record keeping requirements but no reporting requirements for applicators or dealers. TDA looks for compliance among ADC and private users. The main

improvement in the program was the ability to purchase materials from Pocatello. The quality control of the capsules and the devices are much better. Texas would like to update the training manual. Not many enforcement problems are found. If many more applicators start using M-44s inspecting every one could be a logistical problem. M-44 capsule use in Texas is found in Fig 3.

Fig. 3

Registration for M-44 use other than APHIS-ADC



Wyoming

The Department of Agriculture administers the program. They have experienced stable use until this year when use rapidly increased. About 132 private and commercial applicators and 48 government trappers are certified. Only about 20 people are using the product with state registration at present. Dept. of Ag. purchases equipment and capsules and makes them available for resale at cost to applicators. They conduct a one day training seminar on use including the EPA restrictions. Have just completed a new

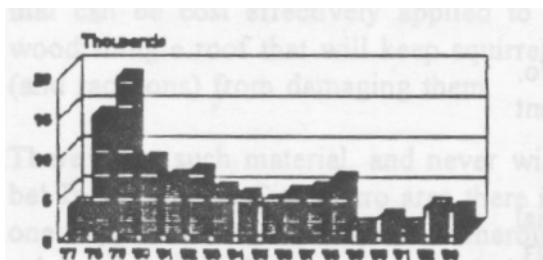
program manual. They can inspect each applicator yearly. Two certification periods per year are held. One is in conjunction with the Woolgrowers annual meeting and another sponsored by Dept of Ag. when yearly applications expire in April. Budget allocations for hardware and capsules is about \$6800. No cost for state certification for private users but \$10 for commercial applicators.

Navajo Fish and Wildlife

The Navajo Fish and Wildlife Agency administers a M-44 program on Tribal lands. They report some restrictions on use could be changed in the program e.g. sign posting. The Tribe provides training for and four agents work on reservation. APHIS-ADC staff do not use M-44s on tribal lands but do utilize other control methods. The program is working well and efficiency of the devices and capsules have improved since purchasing them from Pocatello

Fig. 4

M-44 Capsule Use In Texas



Currently *M-44* devices and capsules must be purchased from the Pocatello Supply Depot (PSD). The PSD operates as a not for profit entity via a cooperative

agreement between USDA and Pocatello Chamber of Commerce, which serves as trustee. They produce wildlife damage management materials and services, which are not readily available from private commercial sources, for use by ADC and the public. These materials are typically products that are needed in such low quantities or at such infrequent levels that commercial sources have shown little interest in providing them. USDA-APHISADC pesticide product registrations are developed and maintained by the Denver Wildlife Research Center. State Directors are then responsible to maintain state registrations necessary for product use in their respective states. The PSD will sell and ship items to Federal and nonfederal agencies, organizations, and individuals. All orders for pesticides must be approved in writing by the respective

Summary

Use of the *M-44* is increasing but at a moderate rate. Capsule use varies tremendously among states (Fig. 4). In some states the *M-44* is the mainstay of the animal damage control program. Although the EPA registration process is lengthy and some restrictions are cumbersome, program administrators report few problems and are generally pleased with the program. Products available from PSD are far superior to products available from previous suppliers. Cooperation with APHIS-ADC State Directors has been good.

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