The Probe: Newsletter of the National Animal Damage Control Association

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A Primer to Formulations Used for Coyote Lures & Baits

Sherm Blom, USDA, APHIS, Animal Damage Control, Pocatello Supply Depot, 238 East Dillon, Pocatello, ID 83201

There's an old saying that "anything that stinks will catch coyotes." This might be true to a certain extent, but it's not a good rule to follow. Coyotes are very individualistic and their preferences to odors vary a lot from one animal to the next and also with the same animal from day to day. Their sense of smell is greatly underestimated and has been found to be many hundreds to thousands of times as sensitive to some odors as that of humans. One cannot sniff a lure or bait and tell for sure whether coyotes will be attracted to it or not.

It is recommended that lures be mixed in jars twice as big as the quantity of lure being made to allow for expansion of the lure and gas formation during the blending and aging process to prevent the lure from foaming up and running over or blowing up the jar from gas build-up. Do not snug the lid down on the jar during this time. To keep fly eggs out, place a piece of cloth over the jar lid and wrap string around the cloth to the jar neck.

Lures blend better if the solid ingredients and powders are mixed together first, followed by the liquids. Mix in the water-based liquids before the oil-based liquids. In order to formulate truly different lures one must use completely different bases and ingredients for each lure. Adding the same ingredients or different quantities of them to different bases doesn't change the odor of the lure that significantly. The same classes of chemicals are still there.

The number of ingredients in a lure is not as important as the type or chemical classes in them. Some lures with a few ingredients are equally or more attractive to coyotes than those with many.

Below are some examples of various formulations for lures and baits. These are just examples and you may wish to use different ingredients or quantities than what is given, according to your own preferences.

GLAND LURE: 1 pint batch.
- 12 ounces glands: rotted or fresh. If fresh, preserve with 2 teaspoons of sodium benzoate.

FOOD LURE: 1 pint batch.
- 11 ounces base: one or more of the following (fresh, tainted, or rotten): meat, fish, liver, eggs, blood, cheese, or brains. If fresh, add 2 teaspoons of sodium benzoate.
- Up to 1 ounce of additives: one or more of the following:
  - beaver castor: 1/2 ounce
  - muskrat glands: 1/2 to 1 ounces
  - mink glands: 1/2 ounce
  - rue oil: 3 to 5 drops
  - skunk musk: 3 to 5 drops
  - anise oil: 3 to 5 drops
  - chemical lure: 3 to 5 drops, up to 1/4 teaspoon
- 4 ounces of preservative: glycerin or propylene glycol
- Trace of fixative: 3 drops of oakmoss resin or orris root oil or 1.2 teaspoon of castroem (best to add to the preservative, mix, and then add to lure and mix well).

CALL LURE #1: 1 pint batch:
- 8 ounces base:
  - 3 ounces rotted meat or liver or eggs or rodents or brains or cheese; 2 ounces gland lure (coyote or fox or bobcat or badger); 3 ounces fish oil or juice (or snake or rodent juice or seal oil, etc.)

Continued on page 4
CALENDAR OF UPCOMING EVENTS


October 3-8, 1993: First International Congress of Vector Ecology, Hanalei Hotel, San Diego, California. Sponsored by the Society for Vector Ecology. For more information, contact: Society for Vector Ecology, P.O. Box 87, Santa Ana, CA 92702, (714) 971-2421, FAX (714) 971-3940.


November 4-5, 1993: North America Research Workshop on the Ecology and Management of Cowbirds, Austin, Texas. For more information, contact Tom Barnes, Extension Wildlife Specialist, Department of Forestry, University of Kentucky, Lexington, KY 40546-0073.

December 8-9, 1993: Ground Squirrel/Pocket Gopher Symposium, Reno, NV. Deals with current and future technology for control, especially rodenticides. Contact: Kathleen Fagerstone, USDA Denver Wildl. Res. Ctr., P.O. Box 25266, Denver, CO 80225-0266, (303) 236-2089.


February 21-23, 1994: 1st Eastern Nuisance Wildlife Control Operators Short Course, Lexington, Kentucky. For more information, contact Tom Barnes, Extension Wildlife Specialist, Department of Forestry, University of Kentucky, Lexington, KY 40546-0073.

Update on NADCA Nominations

As of August 17, the following persons have been nominated to serve during 1994-95:

President: Jim Forbes
Gary Simmons
Vice President-East: Jim Miller
Vice President-West: Alan Foster
Secretary: Michael Hoy
Treasurer: Wes Jones
Region 1 Director: Mike Worthen
Region 2 Director: Fred Knowlton
Region 3 Director: William Rightmire
Region 4 Director: Rosemary Heinen
Region 5 Director: Scott Hygnstrom
Region 6 Director: Richard Dolbeer
Region 7 Director: Scott Craven
Region 8 Director: Laura Henze
Region 9 Director: Martin Lowny
Region 9 Director: Jim Armstrong

More nominations are desired! Consider volunteering or nominating a colleague to serve our organization. Please convey nominations to Treasurer Wes Jones at (715) 463-2038 by September 15.

The Probe is the newsletter of the National Animal Damage Control Association, published 11 times per year.

Editors: Robert H. Schmidt, Department of Fisheries and Wildlife, Utah State University, Logan UT 84322
Robert M. Timm, Hopland Research & Extension Center, 4070 University Road, Hopland, CA 95449

Editorial Assistant:
Pamela J. Tinnin, Laurelwood Press, P.O. Box 518
Cloverdale, CA 95425

Your contributions to The Probe are welcome. Please send news clippings, new techniques, publications, and meeting notices to The Probe, c/o Hopland Research & Extension Center, 4070 University Road, Hopland, CA 95449. If you prefer to FAX material, our FAX number is (707) 744-1040. The deadline for submitting material is the 15th of each month. Opinions expressed in this newsletter are not necessarily those of NADCA.
BAIT SOLUTION #2: 1 pint batch:
1 tablespoon ground muskrat glands
1 tablespoon ground mink glands
1 teaspoon garlic oil or 1/4 teaspoon powder or salt
1 teaspoon orris root oil or 1/4 teaspoon powder
5 drops rue oil
2 ounces coyote urine
2 teaspoons sodium benzoate
fill jar with half vodka or DEA and half glycerin

A pint of either of these bait solutions will make 1 gallon of bait. Pour the entire pint of either solution over 2/3 gallon of chunk, or 3/4 gallon of paste base and stir well. Can be used right away or aged several weeks or months.

COATING LURE FOR M-44'S

Coyotes don't get much sugar in their normal diet and seek out fruit, berries, melons, etc. with natural sugars during the time of year they are in season. It has been known that sugar enhances the lick-chew-bite responses of known food lures by coyotes. To utilize this fact, mix a sugar coating lure in a 4 ounce squirt bottle:

2 ounces sugar
1 ounce water
1 ounce glycerin

Squirt a small amount around the top of a scented M-44 and allow it to run down the sides. This is strictly a taste lure; no odor is present. It will also extend the life of the scent used on the M-44 top.

SLOW RELEASE, PRE-LURED M-44 TOPS

In a 16 ounce, #303 tin can (canned fruit or vegetable size) mix 1 cup of plaster paris, 1/2 cup paraffin wax, and 1/2 cup white beeswax. Yellow beeswax is OK as well as trap wax. When using trap wax use 1 cup of it, alone, since it is usually a mixture of the two, anyway. Melt the waxes in tin cans on an electric hot plate. DO NOT USE open flame or a gas stove since the waxes are combustible. Mix these three items together well. Then add the lure and stir well, keeping the mixture at a temperature just at, or below simmering. For conventional lures, add 1 ounce of a strong-odored lure and up to 4 ounces of a milder lure. For chemical lures, start out with 1 teaspoon. If more is desired, add more but do not exceed 1 tablespoon. M-44 tops can be wrapped with gauze, burlap, cloth, VETWRAP, or any absorbent material. Insert an empty used M-44 capsule into the top and screw it onto a cocked ejector. Dip the tip into the matrix to the bottom of the threads and keep immersed for 10-15 seconds. Remove from matrix and hold upside down until excess matrix has drained off into can. Then place ejector upright until matrix cools and hardens. Unscrew the top and push the capsule out. Excess matrix may have to be scraped off around the hole of the top so it won't interfere with the unit firing.

Some helpful measurements and conversions for lure and bait making:

3 teaspoons = 1 tablespoon = 1/2 ounce
6 teaspoons = 2 tablespoons = 1 ounce
360 drops of liquid = 1 ounce (approximately)
28 grams of powder = 30 milliliters liquid (approximately)
30 milliliters = 1 ounce
1 cc = 1 milliliter
1/2 cup = 4 ounces
1 cup = 8 ounces
1 pint = 16 ounces = 2 cups
1 quart = 32 ounces = 2 pints
1 gallon = 8 pints = 4 quarts = 128 ounces

In the last issue of The PROBE, Sherm Blom discussed the basics of coyote lure and bait ingredients.
From the Editors...

We have been editing The PROBE for 3 years, since September, 1990. With this issue, we have gone through the newsletter production cycle 32 times. Bill Fitzwater, the previous editor, produced 103 issues. Bill, we now have a better appreciation for the contributions you made to NADCA, and we thank you again.

Over the years, The PROBE has produced a wide variety of articles of interest to wildlife damage professionals. Topics included professionalism, research at the Denver Wildlife Research Center, the private sector's role in wildlife damage work, ADC's EIS process, research and opinions on padded traps, the EEC's wild fur regulations, Australian approaches to animal welfare and fertility control, public attitudes toward coyote management, Bird Strike Committee USA, principles of wildlife damage management, and baits and lures for coyotes. We've had articles on black bears, cattle egrets, rabies, laughing gulls, gray wolves, and bats.

Our list of authors is beginning to look like a "who's who" of wildlife damage management: Sam Linhart, Russ Reidinger, Don Hawthorne, Bobby Acord, Michael Hoy, Kevin Clark Janet Sillings, Richard Dolbeer, Mahadev Bhat, Alan May, Michael Bodenchuk, Fred Knowlton, Robert Giles, Mary Bomford, Peter O'Brien, Alton Dunaway, Richard Chipman, Jim Forbes, Rex Marsh, and Sherm Blom (we hope we haven't missed anyone). Many others have contributed newspaper articles reports, and announcements to us.

A special thanks goes to our special correspondent and editorial assistant Pam Tinnin. Pam has been with us from our first issue. Incidentally, Pam begins a 3-year program this fall to receive her master's degree in theology. Between studying the lost scrolls and human psychology, she will continue to assist us with the production of The PROBE.

We look forward to continued improvement in your newsletter. Send us the ideas you want for feature articles. In particular, we invite broader participation by wildlife damage professionals in the private sector, more "how-to" articles, reports on both successful and unsuccessful case histories, dialogue on controversial issues within the profession, and news articles or reports on new techniques. If you have an idea for an article, but are unsure about your writing talents, contact us for ideas and support. We want our members to share their expertise, and we want The PROBE to be the vehicle for information transfer.

Finally, we thank you, the readers who have supported the newsletter with your membership in NADCA. Please continue to give us feedback, and tell us what you want to see in the future.

Robert Schmidt
Logan, Utah

Robert Timm
Hopland, California

Jack H. Berryman Institute Names Fellows

The Jack H. Berryman Institute of Wildlife Damage Management has named three graduate students as Berryman Fellows. These fellowships are awarded yearly to superior graduate students interested in the broad area of wildlife damage management. Kimberly Kessler, Wendy Sanborn, and Rolla Ward will be attending Utah State University in the Department of Fisheries and Wildlife. Kim and Wendy are student members of the NADCA, and Kim was a recipient of a NADCA student presentation award at the 1991 Great Plains Wildlife Damage Control Workshop.

For more information on the Berryman Institute and its fellowship program, write to the Berryman Institute, Department of Fisheries and Wildlife, Utah State University, Logan UT, 84322.
Connecticut Man Suggests Humane Raccoon Control Idea

This letter was received by PROBE editor Robert Timm.
Dear Bob:

My name is Richard Daniotti. I have been in the nuisance wildlife business for approximately six years. As you know, here in the northeast as well as other areas of the country, raccoons make their homes and rear their young in chimneys. It doesn't take very long to figure out that removing them can be a very profitable part of a nuisance wildlife business. All I have read on this subject would seem to agree on that point. What they seem not to agree on, however, is the method by which they are removed. Everyone in any business wants to expend the least amount of time and effort per dollar made, get good results, and look professional doing it. How do we remove the raccoons humanely, no matter what their temperament, within the same time frame every time, with only one method?

I have designed and manufactured a trap that is currently available, which when mounted over a chimney flue, will catch the raccoon alive as it tries to exit. There is no bait involved and the door locks so it can't get out. Once you are on the roof it takes about five minutes to secure it to the chimney. The trap is left set over night. You only have to return when your customer calls to tell you the raccoon is in the trap. It will be there. It has to come out!

The CHIM-TRAP™, as it is called, is 10"x12"x36". It is made from 14 ga. 1"x1" galvanized wire and 18 ga. steel. It weighs about 15 lbs. and has no wires, cables, pulleys, or springs to break. It is very well constructed and will give years of trouble-free service. The CHIM-TRAP™ has many other applications and may be of use in situations where lethal methods may not be practical.

For years I have been reading about how the nuisance wildlife business is going to become very big as urban areas continue to spread. As in any trade, the tradesman is only as professional as the methods and tools he or she has to work with. There are very few tools designed specifically for the urban nwco that he or she can rely on for consistent, professional results. I believe everyone involved in nwco work or contemplating getting in to this field could benefit from the CHIM-TRAP™.

The CHIM-TRAP™ is currently being distributed by Rob Erickson/On Target ADC, P.O. Box 5345, Glendale Heights, IL 60139, Tel: (708) 858-4895.

For more information, call or write Rob or myself, Rich Daniotti, Wildlife Control Products, Wildlife Control Services, 65 Edgemere Ave., West Hartford, CT 06110, Tel. (203) 236-2683.

Inventor of M-44 Ejector Device Dies at 70

Victor D. Keenan, inventor of the M-44 ejector device, died July 27 in Colorado. Mr. Keenan worked for the U.S. Fish and Wildlife Service for 28 years.

Concerned about the safety of the men who worked under him, Mr. Keenan designed, developed, and field tested a "safe, selective, effective coyote trap." He was awarded a state Bureau of Sport Fisheries and Wildlife Animal Control incentive award for the device in 1968. In 1975 he received another award from the U.S. Department of the Interior in Washington, D.C. for developing the sodium cyanide ejector device.

Mr. Keenan retired in 1980 to Chromo, Colorado, and among other retirement interests, set out to develop a true blue Colorado columbine. His field of 10,000 columbines should start producing seeds for sale this year.

Mr. Keenan is survived by his wife Lois, and three children and their spouses.

The editors of The PROBE thank contributors to this issue: Sherm Blom, Franklin Anderson, Russ Mason, Rich Daniotti, James E. Forbes, and Wes Jones. Send your contributions to The PROBE, 4070 University Road, Hopland, CA 95449.
Formulations Used for Coyote Lures & Baits

continued...

- Up to 4 ounces additives: one or more of the following:
  - beaver castor: 1/2 ounce
  - muskrat glands: 1/2 to 1 ounce
  - asafetida tincture: 1 teaspoon
  - valerian root extract: 1 teaspoon
  - skunk musk: 3 to 5 drops
  - rue oil: 3 to 5 drops
  - cilantro oil: 2 to 4 drops
  - chemical lure: 3 to 5 drops
- 4 ounces preservative: glycerin or propylene glycol
- Trace of fixative: 3 drops orris root oil or tincture or oakmoss resin or 1/8 teaspoon phenyl acetic acid tincture (best to add to preservative, mix, then add to lure and mix well).

CALL LURE #2: 1 pint batch:
- 10 ounces base:
  - 5 ounces glands (coyote or fox or badger)
  - 5 ounces fish oil or juice (or snake or rodent juice or seal oil, etc.)
- Up to 2 ounces additives: One or more of the following:
  - beaver castor: 1/2 ounce
  - muskrat glands: 1/2 to 1 ounce
  - mink glands: 1/2 ounce
  - rhodium oil: 1 teaspoon
  - anise oil: 5 drops
  - orris root oil or tincture: 1/2 teaspoon
  - chemical lure: 3 to 5 drops
- 4 ounces preservative: glycerin or propylene glycol
- Trace of fixative: imitation Tonquin musk or Civet: 1/4 teaspoon (best to add to preservative, mix, then add to lure and mix well).

Chemical Lures

Bases:
- Summer: Vaseline (petroleum jelly). Melt in pan of boiling water. After the chemical is mixed, it will solidify, again.
- Winter: mineral oil; can be used in plastic squirt bottle.

1 pint batch:
CALL LURE: 1 to 3 ounces of chemical lure
13 to 15 ounces of base
CLOSE-UP LURE: 1 to 5 teaspoons of chemical lure; 15 to 16 ounces of base

Many combinations of lures can be made from these base formulas to give truly different lures. The conventional lures are generally aged for several months before use, and mixed periodically during this time. The chemical lures can be used immediately after formation.

Baits

Baits can be made from a variety of meats or fish, depending on locality or availability. Meats that are often used include horse, bobcat, sheep, and rodents. Rodents include prairie dogs, ground squirrels, gophers, mice, rats, etc. Any kind of fish can be used. Make sure that all of your ingredients are obtained legally. Baits can either be cut into chunks or ground into a paste. Baits can be somewhat preserved at the desired stage (fresh, tainted, or rotten) by adding 2 teaspoons of sodium benzoate per pint, or 5 tablespoons per gallon of bait. To use baits without any other odor ingredients, prepare as follows:

1 pint batch:
- 12 ounces bait
- 2 teaspoons sodium benzoate
- 4 ounces glycerin or propylene glycol

1 gallon batch:
- 3 quarts bait
- 5 tablespoons sodium benzoate
- 1 quart glycerin or propylene glycol

Bait Solutions

Bait solutions are liquids composed mostly of glycerin/alcohol with sodium benzoate and a variety of odor ingredients added to extend the bait odor. This actually makes a lure, with the bait as the base and the other ingredients enhancing and preserving the whole odor.

Bait Solution #1: 1 pint batch:
- 2 ounces fish oil or juice (or rodent or snake or seal)
- 2 dried beaver castors, rasped to a powder
- 1 teaspoon asafetida tincture or 1/4 teaspoon powder
- 1 tablespoon valerian extract or tincture or 1/4 teaspoon powder
- 5 drops skunk musk
- 1/4 teaspoon anise oil
- 2 teaspoons sodium benzoate
- fill jar with half vodka or DEA and half glycerin

Continued on page 5
Populations of great snow geese (Chen caerulescens atlantica) have increased steadily for the past 30 years, resulting in increased crop depredation on migration and wintering areas in New Jersey.

Unlike Canada geese (Branta canadensis) that cause damage to crops in the fall, damage by snow geese is most severe in late February and March when the geese are engaged in premigratory fattening. Rye, winter wheat, and grass turf are heavily grazed, compromising the principle reasons these crops are planted, i.e., nitrogen fixation and to reduce soil erosion. Geese are a vector for agriculturally important pathogens and parasites, including soybean cyst nematode and pepper nematodes. As a result, even farmers without substantial goose damage to crops express concern over visits by flocks to their fields.

Chemical repellents like methyl anthranilate may become available for goose damage control, but no substance currently is registered with the U.S. Environmental Protection Agency for this purpose. Existing strategies to control damage include hunting, harassment, providing lure crops, planting unattractive cover crops, and the use of auditory and visual repellents. Each of these strategies can be successful, but none is consistently effective over long periods of time.

From 1991-1993, DWRC evaluated the effectiveness of white plastic flags, black plastic flags, and mylar streamers as visual repellents for snow geese. Each of these strategies has been, or is currently recommended for goose control. To broaden the implications of our experiment, both upland agricultural fields and tidal salt hay meadows were flagged. The results showed that both white and black flags were effective deterrents (P<0.01). Mylar, on the other hand was no more effective than bare stakes placed in control fields (P>0.50).

Although both white and black flags reduced damage when all fields were considered, there were several flagged fields in which severe grazing occurred. This overgrazing commenced about 6 weeks later than grazing in mylar or control fields, but it rapidly increased to high levels. This suggests that once flocks of geese began to forage in flagged fields, repellency "shuts-off".

We conclude that flags are like birth control devices—the risk of damage (or pregnancy) is reduced by their use, but once damage is initiated (or pregnancy occurs), damage levels (or pregnancies) become indistinguishable from those that occur in the absence of flags (or birth control) can be expected.

For additional information on the use of flagging, contact Russ Mason at (215) 898-4999.

This article was reprinted from the NEA-WDB Technical Notes, Vol. 1, No. 3, Spring 1993.

PETA Stops Goose Roundup

In July, while research crews from the University of Minnesota were shooing Canadian geese into traps around the Denver area, People for the Ethical Treatment of Animals (PETA) was in court trying to halt the goose roundup. The roundup is only held in communities that request it, where geese are seen as a nuisance or hazard to airplanes.

According to the July 10 issue of the Denver Star Tribune, Hennepin County District Judge LaJune Lange issued a temporary restraining order, too late to end the trapping for this year, but the order will stop the final round of shipments. At press time, hearings were to resume to determine a final decision.
Membership Application

NATIONAL ANIMAL DAMAGE CONTROL ASSOCIATION

Mail to: Wes Jones, Treasurer, Route 1 Box 37, Shell Lake, WI 54871, Phone: (715) 468-2038

Name: ____________________________ Phone: (____) ______ - ______ Home

Address: ____________________________ Phone: (____) ______ - ______ Office

Additional Address Info: ____________________________

City: ____________________________ State: __________ ZIP: __________

Dues: $______ Donation: $______ Total: $______ Date: ______

Membership Class: Student $7.50 Active $15.00 Sponsor $30.00 Patron $100 (Circle one)
(After 7/31/93) Student $10.00 Active $20.00 Sponsor $40.00 Patron $100

Check or Money Order payable to NADCA

Select one type of occupation or principal interest:

[ ] Agriculture  [ ] Pest Control Operator
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[ ] Federal - not APHIS or Extension  [ ] State Agency
[ ] Foreign  [ ] Trapper
[ ] Nuisance Wildlife Control Operator  [ ] University
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