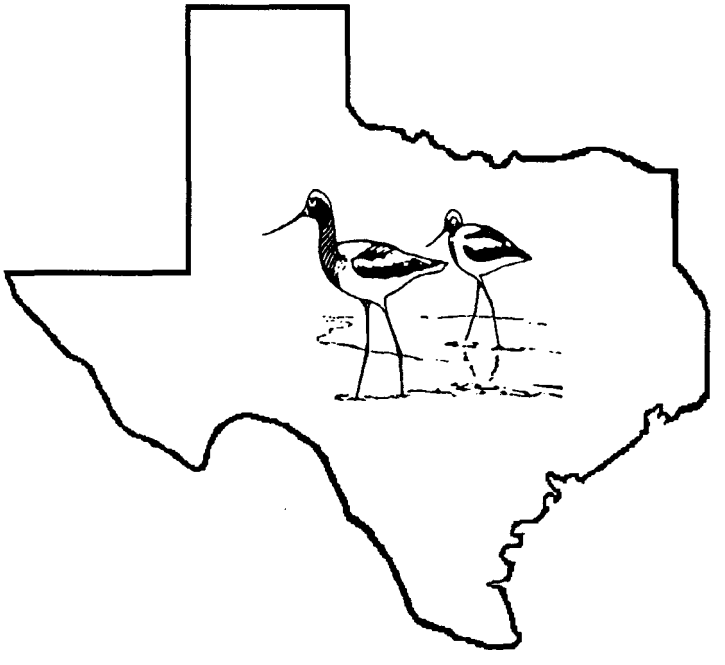
U.S. Fish and Wildlife Service
Region 2
Contaminants Program

CONTAMINANTS INVESTIGATION OF AN OCELOT MORTALITY AT LAGUNA ATASCOSA NWR, TEXAS

by

Thomas W. Schultz



U.S Fish and Wildlife Service
Fish and Wildlife Enhancement
Corpus Christi Field Office
Campus Box 338, 6300 Ocean Drive
Corpus Christi, Texas 78412

April 1993

Contaminants Investigation of an Ocelot Mortality at Laguna Atascosa NWR, Texas.

by

Thomas Schultz

Studytives:

To determine the cause of mortality of an endangered ocelot found near Laguna Atascosa NWR, Texas.

Background:

An endangered ocelot (Felis pardalis) was found dead on Tuesday, December 17, 1991 by Refuge personnel adjacent to Laguna Atascosa NWR. The ocelot was found along with 3 dead raccoons, a dead possum, a dead coyote, and what appeared to be several green jays, near a corn-baiting station on land leased for hunting. According to refuge personnel the animals were badly decomposed, and appeared to have been dead approximately two days. Climatic conditions occurring around the time of mortality included unseasonably warm temperatures (80-90° F) and low rainfall, followed by a rapid temperature drop, overcast conditions, and slight rainfall.

Methods:

Samples collected at the time of discovery included corn from the feeder, corn scattered on the ground in the near vicinity, and masticated corn removed from the stomach of one of the raccoons. Samples were placed in plastic ziploc bags and refrigerated following collection. Analyses were carried out by Patuxent Analytical Control Facility for Aldicarb (Temik), cyanide, and arsenic, and by the National Wildlife Health Research Center for aflatoxins.

Results and Discussion:

Although tests on the samples from the automatic deer feeder and on the ground nearby proved negative, the sample of corn obtained from the stomach of a dead raccoon found nearby contained high levels (29.0 parts per million) of the carbamate Aldicarb (Temik). Such a level is nearly 30 times that required (1 ppm) to cause mortality in mammals. Based upon evidence at the scene, it is probable that the 3 raccoons ingested poisoned bait. The ocelot and the coyote either fed directly on the poisoned bait or preyed upon the dead or dying raccoons, and in turn succumbed to the toxin.

Appendix

ANALYTICAL RESULTS

Invertebrate

U. S. FISH AND WILDLIFE SERVICE

PATUXENT WILDLIFE RESEARCH CENTER

ENVIRONMENTAL CONTAMINANTS RESEARCH BRANCH

JAN 27

QUALITY ASSURANCE REPORT

CATALOG: 2050015 REGION: 2 REGIONAL ID: R2-000000000

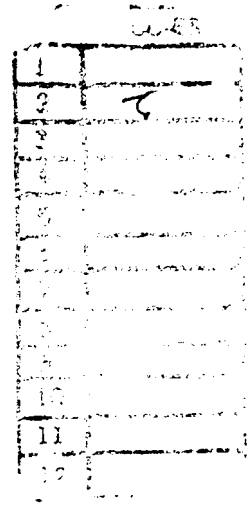
These analyses were performed by the Patuxent Analytical Control Facility in conformance with the Environmental Contaminants Research Branch Quality Assurance Program.

The accuracy, as measured by spiked sample analyses was acceptable.

The precision, as measured by duplicate sample analyses, was acceptable for all analytes.

Clifford P Rice

Quality Assurance Officer Date



QUALITY ASSURANCE REVIEW FORM

CATALOG: 205 0015 DATE: 1-21-92

ANALYTES: OP / Carb

I certify that these analyses were performed according to the Environmental Contaminants Branch Quality Assurance Program.

There were no deviations from the plan ✓.

Deviations from the plan were necessary _____. Attach explanation.

Laboratory Supervisor

These data have been reviewed and are cleared for release to submitter.

1/22/92
Date

Clifford P Rice
Quality Assurance Officer

ANALYTICAL REPORT INTEGRITY FORM

CATALOG #: 2050015 LAB: PACF REGIONAL ID: _____

DATE	INITIALS	PROBLEMS/ACTION
1-22-92	JM	INITIAL REVIEW OK
1-22-92	CSR	OK

Patuxent Wildlife Research Center
Patuxent Analytical Control Facility
Laurel, Maryland 20708

ANALYTICAL REPORT

CAT #: 2050015
DATE: 01/22/92
SUBMITTER: Thomas W. Schultz
SUB I.D.#: R2-000000000

GC column: 30m megabore; 7% cyanopropyl 7% phenyl polysiloxane for OPs; 5% phenyl methyl polysiloxane for carbamates

SAMPLE ID	SUBMITTER ID	IDENTIFICATION	Sample wt grams	Aliquot wt grams
488		PROCEDURAL BLANK	-	-
489	1B	PLANT TISSUE	25.26	5.00
3490	1B	DUPLICATE	25.26	5.00
3491	2B	PLANT TISSUE	3.44	1.02
3492	3B	PLANT TISSUE	85.04	10.34
3493	3B	OP/CARBAMATE SPIKE	85.04	10.16

LOG: 20890915

GANOPHOSPHATE ANALYSES
UG/G Wet Weight)

OMPOUND	3489	3491	3492
cephate	<1.0	<5.0	<0.5
zinphos-methyl	<1.0	<5.0	<0.5
hlorpyrifos-dursban	<1.0	<5.0	<0.5
oumaphos	<1.0	<5.0	<0.5
emeton	<1.0	<5.0	<0.5
iazinon	<1.0	<5.0	<0.5
ichlorvos	<1.0	<5.0	<0.5
icrotophos	<1.0	<5.0	<0.5
imethoate	<1.0	<5.0	<0.5
isulfoton	<1.0	<5.0	<0.5
ureban	<1.0	<5.0	<0.5
N	<1.0	<5.0	<0.5
hoprop	<1.0	<5.0	<0.5
phur	<1.0	<5.0	<0.5
sulfothion	<1.0	<5.0	<0.5
er thion	<1.0	<5.0	<0.5
lathion	1.0	<5.0	<0.5
thamidophos	<1.0	<5.0	<0.5
ethyl Parathion	<1.0	<5.0	<0.5
vinphos	<1.0	<5.0	<0.5
nocrotophos	<1.0	<5.0	<0.5
arathion	1.0	<5.0	<0.5
orate	<1.0	<5.0	<0.5
rbufos	<1.0	<5.0	<0.5
ichlorfon	<1.0	<5.0	<0.5

RBAMATE ANALYSES
G/G Wet Weight)

POUND	3489	3491	3492
dicarb	<2.0	<10.	29. *
rbaryl	<2.0	<10.	<1.0
rbofuran	<2.0	<10.	<1.0
ethiocarb	<2.0	<10.	<1.0
xamyl	<2.0	<10.	<1.0
thomyl	<10.	<50.	<5.0

* = GC/MS confirmation

The nominal lower limit of reportable residue based on a 10 gram sample is 0.5 ppm wet weight for OPs and 1.0 ppm wet weight for carbamates.

Patuxent Wildlife Research Center
Patuxent Analytical Control Facility
Laurel, Maryland 20708

QUALITY ASSURANCE REPORT
ORGANOPHOSPHATES

DATE: 01/22/92

LAT #: 2050015

RECOVERIES

Subm.#: 3B
Sample#: 3493

COMPOUND	Spike ug	Lab Value	% Recovery
horate	18.0	18.0	100
nocrotophos	18.0	17.5	97
enthion	20.0	20.5	103
arathion	20.0	20.0	100
amphur	20.0	20.5	103

DUPLICATES (UG/G) / BLANKS (UG)

COMPOUND	3489	3490	3488
Acephate	<1.0	<1.0	<5.0
Azinphos-methyl	<1.0	<1.0	<5.0
Chlorpyrifos-dursban	<1.0	<1.0	<5.0
Coumaphos	<1.0	<1.0	<5.0
Demeton	<1.0	<1.0	<5.0
Diazinon	<1.0	<1.0	<5.0
Dichlorvos	<1.0	<1.0	<5.0
Dicrotophos	<1.0	<1.0	<5.0
Dimethoate	<1.0	<1.0	<5.0
Dioxathion	<1.0	<1.0	<5.0
Dursban	<1.0	<1.0	<5.0
EPN	<1.0	<1.0	<5.0
Ethoprop	<1.0	<1.0	<5.0
Famphur	<1.0	<1.0	<5.0
Fensulfothion	<1.0	<1.0	<5.0
Fenthion	<1.0	<1.0	<5.0
Malathion	<1.0	<1.0	<5.0
Methamidophos	<1.0	<1.0	<5.0
Methyl Parathion	<1.0	<1.0	<5.0
Mevinphos	<1.0	<1.0	<5.0
Monocrotophos	<1.0	<1.0	<5.0
Parathion	<1.0	<1.0	<5.0
Phorate	<1.0	<1.0	<5.0
Terbufos	<1.0	<1.0	<5.0
Trichlorfon	<1.0	1.0	<5.0

Continued

QUALITY ASSURANCE REPORT
CARBAMATES

DATE: 01/22/92

CAT #: 2050015

RECOVERIES

Subm. #: 3B
Sample#: 3493

COMPOUND	Spike UG	Lab Value	% Recovery
Aldicarb	50.0	Invalid Spike	
Carbaryl	50.0	49.5	99
Carbofuran	50.0	48.0	96
Methiocarb	50.0	49.5	99
Oxamyl	50.0	79.0	158
Methomyl	50.0	49.5	99

	DUPLICATES (UG/G)		BLANKS (UG)
COMPOUND	3489	3490	3483
Aldicarb	<2.0	<2.0	<10.0
Carbaryl	<2.0	<2.0	<10.0
Carbofuran	<2.0	<2.0	<10.0
Methiocarb	<2.0	<2.0	<10.0
Oxamyl	<2.0	<2.0	<10.0
Methomyl	<10.	<10.	<50.0

The nominal lower limit of reportable residue based on a 10 gram sample 0.5 ppm wet weight for OPs and 1.0 ppm wet weight for carbamates.

ANALYST

CHIEF CHEMIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
PATUXENT WILDLIFE RESEARCH CENTER
LAUREL. MARYLAND 20708

TAKE PRIDE IN AMERICA

Date 12-21-92

ANALYTICAL METHODOLOGY FOR ORGANOPHOSPHATE/CARBAMATE SCANNING

CN 2050015

Matrix Tissue

Sample Preparation Date 12-18-91

Summary: This method involves homogenization of the sample followed by mixing with acetone and methylene chloride to separate the pesticides from the tissue. The organic extract is filtered and adjusted to volume prior to gas chromatography using a flame photometric detector for organophospate determinations and a nitrogen phosphorus detector for carbamate determinations. Megabore capillary columns are used for the GC separations.

Reference

Patuxent Wildlife Research Center, Analytical Chemistry Group SOP Organophosphate/Carbamate Scanning Method (o-25.00). April 28, 1989.

ANALYST CERTIFICATION OF PROCESS

I certify that these analyses were performed according to the standard operating procedure as described by the method listed above.

There were no deviations ✓.

Deviations were necessary _____.

Description and reasons for deviations:

Analyst