

EXCISE



Department of State

TELEGRAM

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DEPARTMENT OF STATE A/CDC/MR

REVIEWED by RHM DATE 11/4/88

() RELEASE () DECLASSIFY
(X) EXCISE (X) DECLASSIFY in PART
() DENY () Non-responsive info.

FOI, EO or PA exemptions (A)(1); (A)(5)

TS authority to:
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AMEMBASSY VIENTIANE PRIORITY
USMISSION USUN NEW YORK PRIORITY
CDR MIIA/FT FT DETRICK MD
CDR FSTC CHARLOTTESVILLE VA
HQ DA/DAMI-FIT WASHDC

SECRET STATE 275704

E.O. 12356: DECL: OADR
TAGS: PARM, FR, TH, CA, UN
SUBJECT: CHEMICAL/TOXIN WEAPON USE ADMINISTRATION
OPERATIONAL MATTERS

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REFS: A) BANGKOK IR6895007382 (NOTAL), B) PARIS 18899

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Difference on p. 2
Paragraph starting with
"The samples."
Also page 3 omitted in
one copy.
2 Different Versions

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(NOTAL), C) BANGKOK 52214 (NOTAL), D) USUN NY 02539
(NOTAL), E) BANGKOK 376)0 (NOTAL)

(S)(X)(1)(a)(5)

LEONARD PH/TMP, IN TURN GAVE DEPARTMENT OFFICER, COL. A NON-PAPER ON POSITIVE TRICHOHECENE TOXIN SAMPLE ANALYSIS FROM A APPARENT "YELLOW RAIN" ATTACK ON FEB. 19, 1982-IN KAMPUCHEA.

(S)(X)(1)(a)(5)

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2. THE TEXT OF THE NON-PAPER GIVEN TO FOLLOWS: (BEGINNING NON-PAPER)

AN APPARENT "YELLOW RAIN" ATTACK TOOK PLACE ON THE 19TH OF FEBRUARY 1982 IN THE PONG NAM RON DISTRICT NEAR THE THAI KAMPUCHEAN BORDER. SAMPLES WERE COLLECTED BY SEVERAL DIFFERENT GROUPS. ONE COUNTRY HAS REPORTED THAT FUSARENON-X WAS A MAJOR COMPONENT AND THAT MONOACETATE DEOXYMIVALENOL AND MIVALENOL DIACETATE ALSO WERE PRESENT IN SMALL AMOUNTS. A SECOND COUNTRY HAS FOUND THE PRESENCE OF TRACES OF DEOXYMIVALENOL AND DIACETOXYSIRPENOL (200 PPB). US ANALYSIS OF A SAMPLE TAKEN FROM THE ATTACK SITE IS AS FOLLOWS:

THE SAMPLES WAS EXTRACTED WITH ETHYL ACETATE.
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CONCENTRATED, REDISSOLVED IN ACETONITRILE, AND THEN PARTITIONED WITH PETROLEUM ETHER. THE ACETONITRILE LAYER WAS EVAPORATED TO DRYNESS AND DISSOLVED IN 100 ML OF METHANOL; 50 ML OF WATER WAS ADDED, AND LOADED ONTO A XAD-2 COLUMN AND ELUTED WITH 20% METHANOL; THE ELUATE WAS COLLECTED AND DRIED FOR ANALYSIS BY GC/MS.

THE SAMPLES WAS ANALYZED FOR T-2 TOXIN, HT-2, AND DIACETOXYSIRPENOL BY SELECTED ION MONITORING OF CORRESPONDING TFA DERIVATIVES IN AN HP-5985B GAS

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CHROMATOGRAPH/MASS SPECTROMETER DATA SYSTEM USING EL MODE.

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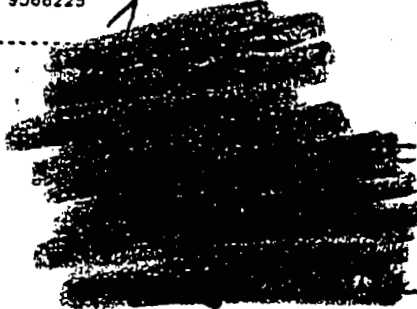
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FOL, EO or PA exemptions 1.3 (c)(1)(5)
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 INFO ALL NATO CAPITALS PRIORITY
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 RUMJFS/AMEMBASSY VIENTIANE PRIORITY 0000
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 S E C R E T STATE 275704



E.O. 12356: DECL: OADR
 TAGS: PARM, FR, TH, CA, UN
 SUBJECT: CHEMICAL/TOXIN WEAPON USE ADMINISTRATIVE AND OPERATIONAL MATTERS

REFS: A) BANGKOK 1R6895007382 (NOTAL), B) PARIS 18899 (NOTAL), C) BANGKOK 52214 (NOTAL), D) USUN NY 02539 (NOTAL), E) BANGKOK 376)0 (NOTAL)

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2. (C) THE TEXT OF THE NON-PAPER FOLLOWS: (BEGINNING NON-PAPER)

AN APPARENT "YELLOW RAIN" ATTACK TOOK PLACE ON THE 18TH OF FEBRUARY 1982 IN THE PONG NAM RON DISTRICT NEAR THE THAI KAMPUCHEAN BORDER. SAMPLES WERE COLLECTED BY SEVERAL DIFFERENT GROUPS. ONE COUNTRY HAS REPORTED THAT PUSARENON-X WAS A MAJOR COMPONENT AND THAT MONOACETATE DEOXYNIVALENOL AND NIVALENOL DIACETATE ALSO WERE PRESENT IN SMALL AMOUNTS. A SECOND COUNTRY HAS FOUND THE PRESENCE OF TRACES OF DEOXYNIVALENOL AND DIACETOXYIRSIPENOL (200

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PPB). US ANALYSIS OF A SAMPLE TAKEN FROM THE ATTACK SITE IS AS FOLLOWS:

THE SAMPLES WAS EXTRACTED WITH ETHYL ACETATE, CONCENTRATED, REDISSOLVED IN ACETONITRILE, AND THEN PARTITIONED WITH PETROLEUM ETHER. THE ACETONITRILE LAYER WAS EVAPORATED TO DRYNESS AND DISSOLVED IN 100 ML OF METHANOL; 90 ML OF WATER WAS ADDED, AND LOADED ONTO A XAO-2 COLUMN AND ELUTED WITH 90 METHANOL. THE ELUATE WAS COLLECTED AND DRIED FOR ANALYSIS BY GC/MS.

THE SAMPLES WAS ANALYZED FOR T-2 TOXIN, HT-2, AND DIACETOXYSCIRPENOL BY SELECTED ION MONITORING OF CORRESPONDING TFA DERIVATIVES IN AN HP-99898 GAS CHROMATOGRAPH/MASS SPECTROMETER DATA SYSTEM USING EL MODE.

RESULTS:

LEAF SAMPLE		
MATERIAL	AMOUNT	TOXINS
ONE DRY LEAF WITH YELLOW SPOT	0.098	NEG 86PPB NEG

SUMMARY: THE DIFFERENCES IN REPORTED RESULTS CAN BE ATTRIBUTED TO MANY POSSIBLE FACTORS I.E., THE AMOUNT OF SUBSTANCE ON THE SAMPLE ANALYZED, USE OF DIFFERENT TECHNIQUES AND METHODS OF ANALYSIS, AS MICROBIAL DEGRADATION IS KNOWN TO OCCUR. (END NON-PAPER)

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FURTHER US RESULTS OF TISSUE OBTAINED FROM THE SAME VICTIM BY ANEMBASSY BANGKOK AND ANALYZED BY US LABORATORIES FOUND THE PRESENCE OF TRICHOHECENE MYCOTOXINS. A SUMMARY OF THE US REPORT FOLLOWS: (BEGINNING REPORT SUMMARY)

AN AUTOPSY WAS CONDUCTED BY A WESTERN PHYSICIAN TRAINED IN FORENSIC PATHOLOGY ON A VICTIM OF A CHEMICAL ATTACK THAT OCCURRED IN FEBRUARY 1982 IN KAMPUCHEA. THE VICTIM DIED ONE MONTH AFTER EXPOSURE TO A "YELLOW RAIN" INCIDENT. THE VICTIM AND FOUR DEMOCRATIC KAMPUCHEAN SOLDIERS WHO SURVIVED THE ATTACK HAD HIGH LEVELS OF TRICHOHECENE MYCOTOXINS IN BLOOD AND URINE SAMPLES DRAWN AFTER THE ATTACK. THE AUTOPSY SPECIMENS INCLUDED THE VICTIM'S HEART, ESOPHAGUS, STOMACH, LIVER, KIDNEY, LUNG, AND LARGE INTESTINE. THEY WERE SUBMITTED TO SEVERAL US LABORATORIES FOR GROSS, MICROSCOPIC, HISTOPATHOLOGICAL, AND CHEMICAL-TOXICOLOGICAL ANALYSES. THE PATHOLOGY FOUND INCLUDED: HEMORRHAGE INTO THE HEART TISSUE WITH EVIDENCE OF CELL DESTRUCTION AND INFLAMMATION, CIRRHOSIS OF THE LIVER, HEMORRHAGE AND CELLULAR DESTRUCTION OF KIDNEY TUBULES, HEMORRHAGE IN THE BROCHI, AND CONGESTION AND DESTRUCTION OF THE LUNG. A TRICHOHECENE TOXIN, T-2, OR ITS METABOLIC PRODUCT, HT-2, WAS FOUND IN ALL THE TISSUE SPECIMENS EXCEPT THE LIVER. DIACETOXYSCIRPENOL, ANOTHER TRICHOHECENE TOXIN WAS ONLY IN THE KIDNEY TISSUE. AFLATOXINS WERE FOUND IN THE STOMACH, LIVER, KIDNEY, AND INTESTINE SAMPLES. CONTROL SAMPLES WERE NEGATIVE FOR TRICHOHECENE AND AFLATOXIN MYCOTOXINS AND THEIR METABOLIC PRODUCTS. EXAMINATION OF PREVIOUS YELLOW RAIN RESIDUE

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FROM A DIFFERENT ATTACK HAD SHOWN HIGH LEVELS OF TRICHOHECENES, BUT WAS NEGATIVE FOR AFLATOXINS.

COMMENT:

THE RESULTS OF THE AUTOPSY PROVIDE OBJECTIVE EVIDENCE THAT:

REPORTS FROM WITNESSES OF YELLOW RAIN ATTACKS ARE VALID AND THAT BLEEDING SOMETIMES OCCURS IN THE LUNG, STOMACH, INTESTINE, AND KIDNEY OR BLADDER. PERSONS WHO ARE ALREADY DEBILITATED, BY MALARIA OR LIVER DISEASE FOR EXAMPLE, HAVE A GREATER RISK OF DEATH FROM TRICHOHECENE TOXICOSIS. MICROSCOPIC EXAMINATION SHOWS TISSUE DAMAGE OCCURS IN HUMANS AFTER HEAVY-TO-MODERATE EXPOSURE TO TRICHOHECENES. THE DAMAGE IS SIMILAR TO THAT FOUND IN EXPERIMENTAL ANIMALS. MICROSCOPIC DAMAGE PERSISTS OVER A PERIOD OF ONE MONTH OR LONGER. TRICHOHECENES ARE KNOWN TO CAUSE LONG-TERM DAMAGE TO RAPIDLY DIVIDING TISSUE. THESE TOXINS ACCUMULATE AND PERSIST AT LEAST IN THE ORGANS THAT WERE EXAMINED. AFLATOXINS FOUND IN THE TISSUES MAY BE A FOOD-BORNE ILLNESS AND IS NOT NECESSARILY A COMPONENT OF THE YELLOW RAIN SUBSTANCE. HOWEVER, AFLATOXINS AND TRICHOHECENE TOXINS ACT SYNERGISTICALLY. IN GENERAL, THE DATA SUPPORT THE EVENTS REPORTED AT THE ATTACK SITE. THE SOLDIERS WERE SURPRISED BY THE ATTACK BUT WELL COVERED BY CLOTHING, WHICH REDUCED THE EFFECTS OF THE ATTACKS ON THEIR SKIN. SOME OF THEM WERE INCAPACITATED QUICKLY DUE TO INHALATION EFFECTS RATHER THAN BLISTERING OF THEIR EXPOSED SKIN, AND THE MOST SERIOUS MEDICAL PROBLEMS WERE FOUND IN PERSONS WHO INGESTED CONTAMINATED MATERIAL. CLINICAL FINDINGS ALSO POSSIBLY INCLUDED FALCIPARUM MALARIA. SURVIVORS HAD SIMILAR, BUT MUCH LESS SEVERE, SIGNS AND SYMPTOMS BOTH SHORTLY FOLLOWING THE EXPOSURE TO THE CHEMICAL AND IN THE ENSUING MONTH. THE VICTIM WHO DIED REPORTEDLY HAD SWALLOWED A GOOD AMOUNT OF THE WATER, AND WAS THE ONLY DEATH RESULTING FROM THE FEB 13, 1982 INCIDENT. THESE FINDINGS STRONGLY SUPPORT OUR EARLIER CONCLUSIONS BASED ON SUBJECTIVE MEDICAL DATA, PHYSICAL SAMPLE ANALYSES, AND REPORTS FROM SURVIVORS OF CHEMICAL ATTACKS. WE CONTINUE TO BELIEVE THAT OTHER CHEMICALS, INCLUDING OTHER LETHAL ONES, HAVE BEEN USED IN OTHER LETHAL ONES, HAVE BEEN USED IN OTHER ATTACKS. WE ALSO BELIEVE THE YELLOW RAIN SUBSTANCE INCLUDES OTHER, AS YET UNIDENTIFIED, MAN-MADE SUBSTANCES POSSIBLY INCLUDING LUNG SURFACTANTS, SKIN-BARRIER PENETRANTS, AND INCAPACITANTS; THESE LATTER VIEWS ARE CURRENTLY SUPPORTED BY LABORATORY DATA FROM TWO OR THREE SAMPLES ONLY (END REPORT SUMMARY).

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