

file

9310068-3
PD-AAL-528

EXPANDED SUMMARY FOR PROJECT 9310068,
DEVELOPMENT OF ENVIRONMENTALLY ACCEPTABLE SUBSTITUTES FOR DDT 1p

TWO PART PROJECT PROVIDES 1) CONTRACT FUNDING TO UNIVERSITY OF ILLINOIS (UI) TO CONTINUE RESEARCH, SYNTHESIS AND EVALUATION OF ENVIRONMENTALLY ACCEPTABLE DDT SUBSTITUTES; 2) GRANT SUPPORT TO WHO TO COMPLETE PHASE-7 FORMAL CERTIFICATION OF INSECTICIDE FENITROTHION (OMS-43) AS SAFE AND EFFECTIVE AND PHASE-5 FIELD TEST CERTIFICATION OF PROMISING UI COMPOUNDS. ^PUI CONTINUES RESEARCH AND TESTING OF AT LEAST EIGHT DDT ANALOGUES THROUGH WHO PHASE-1 LABORATORY TRIALS. POTENTIAL DDT SUBSTITUTES TESTED FOR HIGH INSECTICIDAL ACTIVITY AGAINST DISEASE VECTORS AND AGRICULTURAL PESTS, BIODEGRADABILITY, REDUCED TOXICITY TO FISH; EFFECTIVENESS AGAINST DDT-RESISTANT INSECT SPECIES, TOXICITY TO HIGHER ORDER ANIMALS. COOPERATING ORGANIZATIONS IN TEST SEQUENCE INCLUDE UI, ILLINOIS STATE NATURAL HISTORY SOCIETY, USPHS/CSC, LONDON SCHOOL OF TROPICAL MEDICINE AND HYGIENE, ^{USDA AND WHO. ORGANIZATIONS} ~~██████████~~ PROVIDE ~~██████████~~ BASIC RESEARCH AND TEST LABORATORIES, INSECTARY FACILITIES, TEST PLOTS AND A WIDE SPECTRUM OF INSECT TEST SPECIES. ^PWHO PARTICIPATION INCLUDES ESTABLISHMENT AND OPERATION OF INSECTICIDE TESTING FACILITIES AT SEMARANG, INDONESIA, BASELINE SURVEYS, INSECTICIDE FIELD TESTS, POST-TEST EPIDEMIOLOGICAL EVALUATION FOR INSECTICIDES' EFFICACY. WHO CERTIFICATION OF OMS-43 THROUGH PHASE-7 AND ONE OR MORE UI DDT ANALOGUE COMPOUNDS THROUGH PHASE-5 ANTICIPATED BY END OF PROJECT FOR USE IN PUBLIC HEALTH MALARIA CONTROL AND/OR AGRICULTURAL PEST CONTROL PROGRAMS IN DEVELOPING COUNTRIES. ^PPROJECT DURATION JULY 1972-JULY 1975.

ACTION MEMORANDUM

TO: AA/TA, Joel Bernstein
THRU: TA/PM, David G. Mathiasen
FROM: TA/H, Lee M. Howard, M.D.

Problem: A request from WHO for AID assistance through a one-time grant of \$375,000 to accelerate the epidemiological evaluation of Fenitrothion (OMS-43) for use as a residual wall spray where needed in place of DDT (See Tab A).

Discussion: In most countries of the world, after twenty years of use in malaria programs, DDT is still the cheapest, safest, and most effective insecticide available. However, in parts of some countries the mosquito vectors are completely resistant to DDT and in some areas they are partially resistant. Of the countries where malaria programs have been assisted by AID, mosquito vector resistance problems are present in a large part of Pakistan, several states of India bordering Pakistan, and the Central American countries of El Salvador, Guatemala, Honduras and Nicaragua. In India Malathion is being used at a cost sixteen times that of DDT. The Central American countries are using Propoxur (OMS-33) donated as a grant from the West German Government. Cost, if purchased, would be ten times that of DDT. Cost of Fenitrothion (OMS-42) has been estimated at half that of Propoxur. Cases of mosquito resistance to Malathion and Propoxur have already been reported. AID assistance to these countries has been approximately 172 million dollars. If solutions to these

problems are not found, much of this investment may well be lost.

AID research efforts in the field of malaria are being concentrated on the development of a malaria vaccine. However, actual use of a malaria vaccine in a field malaria program may be five to eight years in the future. In the meantime, the most effective technology for malaria control/eradication is still the use of residual insecticides. Since DDT is decreasing in effectiveness each year, it is of vital importance to expedite and accelerate the testing and evaluation of new insecticides such as Fenitrothion (OMS-43) in order to make them available for use in the field as soon as possible.

AID has in the past provided assistance to 36 country malaria programs (26 through bilateral agreements and 10 with commodity assistance only). Nearly all of these countries would benefit from the WHO certification of the use of Fenitrothion in malaria programs.

An interim reply was sent to HEW for transmittal to WHO indicating that AID would give careful consideration to the request (See Tab B). TA/H has now obtained additional information on the project.

The project started in July of 1972 and is scheduled to be completed by July of 1975. The first year was devoted to gathering of the base line data in preparation for the start of the spraying in July of 1973 with additional cycles every three months for two years. The total budget required is one million dollars. The shortfall is \$375,000, however only \$160,000 is urgently required in this fiscal year with a commitment as soon as possible in order to assure the procurement and

delivery of commodities for the initial spraying in July of 1973. WHO had expected to finance the project from their own budget, but currency devaluation and inflation have made it impossible. Although the original request was on the basis of accelerating the project, it is now clear that without an immediate commitment of \$160,000 the project will have to be terminated or reduced so drastically that it will not be possible to accomplish the objective of certifying Fenitrothion for use in malaria programs.

Recent events have emphasized the need for early certification of Fenitrothion by WHO. Resurgence of malaria in Pakistan has reached epidemic proportions with over 200,000 reported malaria cases in one month. The vector mosquito in Pakistan is already resistant to DDT. The population in India living in areas where the vector mosquito is resistant to DDT and BHC is increasing each year. DDT is virtually useless in most of Central America. USAID Mission Directors from Pakistan and the Philippines have expressed their concern to AID/W over the threat of malaria. AID health officials for S.A. Bureau have expressed similar concern for the Indo-Chinese peninsula countries.

Another factor indicating the need for developing substitutes for DDT is brought out in a recent report prepared by the Office of the General Counsel on "The Effect of the Federal Environmental Pesticide Control Act of 1972 on AID's Use of DDT for Malaria Control". The pertinent section is as follows:

"In the years to come it is possible that the EPA or the Congress might challenge our use of DDT in the fight against malaria.

This could result in amendments to the Federal Insecticide, Fungicide and Rodenticide Act which would limit the use of certain pesticides for export purposes, for both crop and public health uses or which effectively remove the exclusion of pesticides for export from the act. This raises questions of possible substitutes, which the Agency should continue to vigorously explore. While DDT remains the most effective means of controlling malaria, its days may be numbered and we should continue planning for that contingency."

Recommendation: That you sign the attached letter to HEW informing them of AID's intention to make a contribution of \$160,000 to the WHO Special Account for Health Development (malaria) to assist in the completion of the epidemiological evaluation of the insecticide Fenitrothion (OMS-43).



Subj: **W.S**

TAB

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Oct 13 3 28 PM '72 OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20201

AID
EXECUTIVE SECRETARIAT

OCT 6 1972

ek Due 10/26/72

ACTION: AA/AFR for Williams sig

INFO: Hannah log
Williams log
AA/TA, AA/PPC

John A. Hannah, Ph.D.
Administrator
Agency for International Development
Department of State
Washington, D. C. 20523

Dear Dr. Hannah:

As you know, the World Health Organization conducts a program for the development of new insecticides to control vector-borne diseases. It has, over the past 20 years, tested some 1,500 compounds, of which two have been approved for operational use in malaria eradication. The development of resistance of certain species of Anopheles to DDT makes the further accelerated testing of new insecticides imperative.

In recent years, WHO has successfully tested a third insecticide -- Fenitrothion (OMS-43). Through six stages of testing, it has been found to be exceptionally promising for the control of Anopheles gambiae. An epidemiological evaluation, however, is necessary. To undertake this evaluation, WHO has developed a detailed protocol jointly with the Government of Kenya and an area with approximately 50,000 population has been selected. A copy of the protocol is enclosed for your information.

The expected allocation of the World Health Organization for insecticide testing for the period 1972-1975 amounts to about \$591,450. An additional amount of \$375,000 will be required for the period 1972-1975 in order to accelerate the completion of the epidemiological evaluation of OMS-43. Due to the pressing heavy demands on WHO's budget, this would not appear feasible without external aid.

It is our understanding that the Agency for International Development is interested in this particular project and would be willing to consider financial assistance in order to accelerate the epidemiological evaluation. Dr. Candau, the Director-General of WHO, therefore has requested that we explore with you possibilities for AID assistance through a one-time grant of \$375,000 toward the realization of this project.

Page 2 - John A. Hannah, Ph.D.

We strongly share Dr. Candau's conviction that this project is of vital importance for the further progress of the global malaria eradication program, and would urge your favorable consideration of his request.

Sincerely yours,

P. H. Seppel
For Merlin K. DuVal, M.D.
Assistant Secretary for
Health and Scientific Affairs

Enclosure

TAB

NOV 2 1972

The Honorable Merlin K. DuVal, M.D.
Assistant Secretary for
Health and Scientific Affairs
Department of Health, Education
and Welfare
Washington, D. C. 20201

Dear Dr. DuVal:

Dr. Hannah has asked me to reply to your letter of October 6 regarding possible A.I.D. assistance, in collaboration with WHO, to a malaria research project in Kenya.

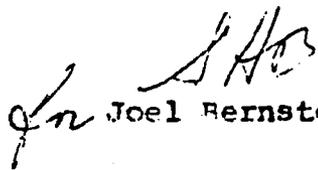
As you know, A.I.D. has a long history of cooperation with WHO in assistance to malaria control and eradication programs in many countries of the world and has a continuing interest in the success of these programs.

We will be happy to review the request from WHO for collaborative assistance to accelerate the completion of the epidemiological evaluation of the insecticide Fenitrothion (OXS-43). However, additional information will be required before any decision can be made. It is not clear to us just when the additional funding will be required or if the entire amount will be needed at one time. The nature and degree of acceleration of the testing made possible by the additional funding is not indicated. In the interest of obtaining a better background and perspective, it would be well to know the status of testing of other candidate insecticides in the WHO scheme.

Mr. Edgar A. Smith of our Technical Assistance Bureau/Office of Health will be attending a WHO Malaria Conference in Brazzaville in November and has been invited by WHO to visit the Fenitrothion Testing Project in Kenya after the meeting. He will be discussing the project with WHO officials and will obtain the additional information required to make a decision.

The proposal will then be reviewed in light of this additional information, current policy and other commitments. You may be sure that it will receive our careful consideration as early as possible. In this regard I must point out that A.I.D. research funds are very tight at present.

Sincerely yours,


Joel Bernstein

TA/H:EASmith-AA/TA:SHButterfield:raf/mab:10/26-11/1/72

DRAFT 2/26/73

TAB C

Charles Edwards

The Honorable ~~Richard L. Soggel~~
Acting Assistant Secretary for
Health and Scientific Affairs
Department of Health, Education
and Welfare
Washington, D. C. 20201

Dr. Edwards:
Dear Dr. ~~Soggel~~:

We have reviewed the request from WHO for assistance to accelerate the completion of the epidemiological evaluation of the insecticide Fenitrothion (OMS-43).

We will be happy to make a contribution to the WHO Special Account for Health Development (Malaria) in the amount of \$160,000 which we understand is the minimum amount urgently needed during this fiscal

year to keep the project on schedule. *The Grant Document is being prepared and will be forwarded to you as soon as it is completed.*

We feel this project is needed for the benefit of many countries with problems of malaria and is deserving of support from other sources.

We are also aware of the great effort WHO has put into the search for new and more effective insecticides and feel that a greater effort should be made to obtain contributions from many donors in order to accelerate the availability of new compounds which show promise.

Although our funds for *projects* research of this type are very limited, we will be glad to review the project again next year in terms of status and needs and progress in obtaining other support.

Sincerely,

Joel Bernstein

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

9310068-5
PD-AAL-518

(13) 068

(3p)

FEB 0 3 1976

Dr. Halfdan T. Mahler
Director General
World Health Organization
Avenue Appia 1211
Geneva 27, Switzerland

Subject: Amendment No. 1 to
Grant No. AID/ta-G-1210

Dear Dr. Mahler:

Pursuant to the Foreign Assistance Act of 1961, as amended, the Agency for International Development hereby amends the subject Grant as follows:

1. Under Paragraph One, lines 4 and 5, delete the statement "the sum of One Hundred Eighteen Thousand Two Hundred Dollars (\$118,200)" and in lieu thereof insert "the sum of Two Hundred Twenty Three Thousand Two Hundred Dollars (\$223,200)."
2. Under Paragraph One line 7 delete the words "first year" and in lieu thereof insert "first and second year."
3. Under Paragraph Two line 5 delete the words "one year" and in lieu thereof insert "two year".
4. Delete the itemized budget shown in Enclosure 2 entitled Illustrated Budget, Semarang.

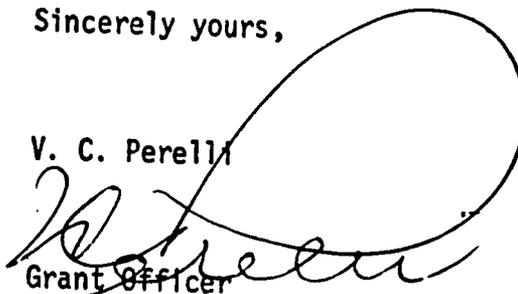
Approp. No.	78-11X1024
Alloc. No.	424-31-099-00-20-61
Obj. No.	3168206 Obj. Cl. 259
Amount	\$105,000.00
Proj. No.	931-11-511-068-73
	900 2/5/76

5. Upon receipt of cable acknowledgement of this Amendment, the funds provided by this Amendment shall be deposited to the WHO Bank Account Number 015-002527 at the Chemical Bank, United Nations Office, New York, New York as a contribution to the WHO Special Account for Medical Research.

6. All Provisions and conditions applicable to the basic Grant shall apply to this Amendment No. 1.

Sincerely yours,

V. C. Perelli

A large, stylized handwritten signature in black ink, appearing to read 'V. C. Perelli', is written over the typed name and extends upwards and to the right.

Grant Officer
Technical Assistance Branch
Central Operations Division
Office of Contract Management

(PARIS - Form 6)

TWO-WAY TRANSMITTAL - PIO.

TO SER/CM - V. Perelli	FROM TA/PM - M. Mozynski
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SUBJECT
Request for contract action: Development of Environmental Acceptable Replacement for DDT

PARIS NO.	PROJECT NO. 931-11-511-068-73	OBLIGATION NO. (10 DIGITS) 4243168206	CONTRACT NO.
ADMINISTRATIVE RESERVATION		NEGOTIATED CONTRACT AMOUNT	
AMOUNT	TA/PM	DATE	
XXXX 105,000	SER/PM	DATE	
CONTRACT MANAGER		EXTENSION	
CONTRACT NEGOTIATOR		EXTENSION	
CONTRACT AMOUNT		CUMULATIVE CONTRACT OBLIGATION.	

NAME OF UNIVERSITY WHO/HEW	CODE J/	ADD3 RECIPIENT CODE
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SHORT CONTRACT TITLE (LIMIT TO 40 CHARACTERS)	
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EXTENDED CONTRACT TITLE (LIMIT TO 120 CHARACTERS)	
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PRINCIPAL INVESTIGATORS/CONTACT	<ol style="list-style-type: none"> 1. <i>Dr. Halphon T. Mahler</i> 2. 3.
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TECHNICIANS		PARTICIPANTS		COMMODITIES' (AMOUNT)	OTHER COSTS	TOTAL
AMOUNT	MM	AMOUNT	MM			

J/ TO BE ENTERED BY DATA COORDINATOR

NOTE: The proposed contract extension was approved for funding on August 8, 1975 by AA/TA for the program administered by the Office of Health.

DISTRIBUTIONS FORWARD COPY 2 TO DATA COORDINATOR
(cont.)

DATA COORDINATOR	INITIALS	DA
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9310068 (6)
FD-AL-528

1577 - 3

STANDARD FORM 30, JULY 1963 GENERAL SERVICES ADMINISTRATION GSA FPMR (41 CFR) 101-11.6		AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		FORM 1 164
1. AMENDMENT/MODIFICATION NO. Amendment No. 1		2. EFFECTIVE DATE 8/5/75	3. REQUISITION/PURCHASE REQUEST NO.	4. PROJECT NO. (If applicable) 931-11-511-068-73
5. ISSUED BY Agency for International Development Central Operations Division Office of Contract Management Washington, D. C. 20523		CODE	6. ADMINISTERED BY (If other than block 5): Same as issuing office	
7. CONTRACTOR NAME AND ADDRESS (Street, city, county, state, and ZIP Code) University of Illinois 162 Administration Building Urbana, Illinois 61801		CODE	FACILITY CODE	8. AMENDMENT OF SOLICITATION NO. <input type="checkbox"/> DATED _____ (See block 9) 12-28 <input checked="" type="checkbox"/> MODIFICATION OF CONTRACT ORDER NO. AID/ta-C-1128 DATED 6-30-75 (See block 11)
9. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS <input type="checkbox"/> The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended, <input type="checkbox"/> is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods: (a) By signing and returning _____ copies of this amendment, (b) By acknowledging receipt of this amendment on each copy of the offer submitted, or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.				
10. ACCOUNTING AND APPROPRIATION DATA (If required)				
11. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS (a) <input type="checkbox"/> This Change Order is issued pursuant to _____ The changes set forth in block 12 are made to the above numbered contract/order. (b) <input checked="" type="checkbox"/> The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12. (c) <input type="checkbox"/> This Supplemental Agreement is entered into pursuant to authority of _____ It modifies the above numbered contract as set forth in block 12.				
12. DESCRIPTION OF AMENDMENT/MODIFICATION The contract number on the cover page and schedule of the contract is hereby changed from "AID/ta-C-1128" to "AID/ta-C-1228". All correspondence and vouchers should reference the new corrected contract number.				
<p>CERTIFIED A TRUE COPY THIS 14th DAY OF Aug. '75 BY: R.D. Murodoff</p>				
Except as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.				
13. <input checked="" type="checkbox"/> CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT <input type="checkbox"/> CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN _____ COPIES TO ISSUING OFFICE				
14. NAME OF CONTRACTOR/OFFEROR		7. UNITED STATES OF AMERICA Agency for International Development		
BY _____ (Signature of person authorized to sign)		BY _____ (Signature of Contracting Officer)		
15. NAME AND TITLE OF SIGNER (Type or print)		16. DATE SIGNED	18. NAME OF CONTRACTING OFFICER (Type or print) S. A. Crabtree S. A. Crabtree	19. DATE SIGNED Aug 01 1975

COST REIMBURSEMENT CONTRACT WITH AN EDUCATIONAL INSTITUTION

3

AGENCY FOR INTERNATIONAL DEVELOPMENT NEGOTIATED CONTRACT NO. AID/ta-C-1128

NEGOTIATED PURSUANT TO THE FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED, AND EXECUTIVE ORDER 11223	TOTAL ESTIMATED CONTRACT COST (See Article V)
CONTRACT FOR: Development of Environmental Acceptable Replacement for DDT PROJECT NO: 931-11-511-068-73	CONTRACTOR (Name and Address) University of Illinois
ISSUING OFFICE (Name and Address) Central Operations Division Office of Contract Management Agency for International Development Washington, D.C. 20523	NAME 162 Administration Building
ADMINISTRATION BY Same as issuing office	STREET ADDRESS Urbana, Illinois 61801
MAIL VOUCHERS (Original and 3 copies) To: Office of Financial Management Agency for International Development Washington, D.C. 20573	CITY, STATE, AND ZIP CODE COGNIZANT SCIENTIFIC/TECHNICAL OFFICE TA/H - Office of Health
EFFECTIVE DATE 06-30-75	ACCOUNTING AND APPROPRIATION DATA PROJECT NO. 931-11-511-068-73-3158210 APPROPRIATION NO. 72 - 11X1024 ALLOTMENT NO. 424-31-099-00-20-51
ESTIMATED COMPLETION DATE 06-29-78	ESTIMATED COMPLETION DATE 06-29-78

The United States of America, hereinafter called the Government, represented by the Contracting Officer executing this Contract, and the Contractor, an educational institution chartered by the State of Illinois with its principal office in Urbana, agree that the Contractor shall perform all the services set forth in the attached Schedule, for the consideration stated therein. The rights and obligations of the parties to this contract shall be subject to and governed by the Schedule and the General Provisions. To the extent of any inconsistency between the Schedule and the General Provisions and any specifications or other provisions which are made a part of this contract, by reference or otherwise, the Schedule or the General Provisions shall control. To the extent of any inconsistency between the Schedule and the General Provisions, the Schedule shall control.

CERTIFIED A TRUE COPY THIS

28th DAY OF July, 75

BY Robin Grindstaff

This Contract consists of this Cover Page, the Table of Contents, and the Schedule consisting of 5 pages, the General Provisions (Form AID 1420-23C), dated 9/74

NAME OF CONTRACTOR BOARD OF TRUSTEES OF THE UNIVERSITY OF ILLINOIS	UNITED STATES OF AMERICA AGENCY FOR INTERNATIONAL DEVELOPMENT
BY (Signature of authorized individual) <u>Earl W. Porter</u>	BY (Signature of Contracting Officer) <u>V. C. Perelli</u>
TYPED OR PRINTED NAME <u>Earl W. Porter, Secretary</u>	TYPED OR PRINTED NAME V. C. Perelli
TITLE 	CONTRACTING OFFICER
DATE	DATE JUN 26 1975

**SCHEDULE
COST REIMBURSEMENT CONTRACT WITH
AN EDUCATIONAL INSTITUTION**

Contract No. AID/ta-C-1128

TABLE OF CONTENTS

SCHEDULE

The Schedule, on pages 1 through 5, consists of this Table of Contents and the following Articles:

ARTICLE I	- STATEMENT OF WORK
ARTICLE II	- REPORTS
ARTICLE III	- KEY PERSONNEL
ARTICLE IV	- PERIOD OF CONTRACT SERVICES
ARTICLE V	- ESTIMATED CONTRACT COST AND FINANCING
ARTICLE VI	- BUDGET
ARTICLE VII	- NEGOTIATED OVERHEAD RATES
ARTICLE VIII	- SPECIAL PROVISION
ARTICLE IX	- ALTERATIONS IN CONTRACT

ARTICLE 1 - STATEMENT OF WORK

A. Objective: The objective of this Contract is to provide funds for the synthesis and evaluation of biodegradable analogues of DDT applicable to vector borne disease and Agricultural Pest Control.

Description: This Contract is based on an eight-year program of laboratory studies at the University of Illinois which has produced a group of biodegradable DDT analogues which have substantial insecticidal qualities, are much less toxic to fish than DDT, and are apparently effective against DDT - resistant strains. Studies in a laboratory model ecosystem have demonstrated the biodegradability of these compounds.

The funding herein is to permit the continuation of the search for new analogues and the preliminary screening of these; to fund the synthesis of 2 kg. of each of the eight most promising of those already discovered, attempting in this laboratory synthesis to develop a simplified method adaptable to commercial production; and to distribute these samples to other laboratories for testing against a wider range of insect strains than that available at the University of Illinois.

The University of Illinois at Urbana will provide all basic laboratory and insectary facilities, and the Illinois State Natural History Society will provide greenhouse space, field test plots, experimental ponds, etc. USPHS/CDC, London School of Tropical Medicine and Hygiene, and USDA laboratories at Beltsville, Maryland, Gainesville, Florida, and Corvallis, Washington, have agreed to utilize their laboratory and insectary facilities in testing compounds provided by the University of Illinois against the wider spectrum of insects available to them and WHO will carry tests of

these materials through their Stage IV Certification tests at Semarang, Indonesia.

In furtherance of the above the Contractor's Proposal dated December 18, 1974 entitled "Potential Role of New Biodegradable DDT Analogues in Insect Control" is hereby incorporated into this Contract by reference.

ARTICLE II - REPORTS

In lieu of those reports required by General Provision No. 12 the Contractor shall submit the following:

1. Thirty-five (35) copies of a yearly report, prepared in accordance with the official "Guidelines for Preparation of the Research Final Report" shall be submitted within thirty (30) days following each twelve month period beginning the effective date of this Contract.

2. Manuscripts of scientific papers based on work undertaken under the terms of this Contract will acknowledge AID support and will be submitted for AID review and clearance prior to publication.

Reprints of published papers will be provided in fifty (50) copies for AID reference and distribution.

3. Special reports will be submitted, as may be indicated, on problems encountered and accomplishments.

4. Quarterly fiscal reports due 45 days following each quarter shall be submitted to the Office of Financial Management, AID.

ARTICLE III - KEY PERSONNEL

A. The key personnel which the Contractor shall furnish for the performance of this Contract are as follows:

Key Personnel: Dr. R. L. Metcalf - Principal Investigator **

B. The personnel specified above are considered to be essential to the work being performed hereunder. Prior to making any change in the key personnel, the Contractor shall notify the Contracting Officer reasonably in advance and shall submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on the program. The listing of key personnel may, with the consent of the contracting parties, be amended from time to time during the course of the contract to either add or delete personnel, as appropriate.

C. (1) The Contractor shall obtain A.I.D.'s approval to change the principal investigator, or to continue the research work during a continuous period in excess of three months without the participation of the approved principal investigator or project leader.

ARTICLE IV - PERIOD OF CONTRACT SERVICES

The effective date of this Contract is June 30, 1975, and the estimated completion date of work, including final report(s), under this Contract is June 29, 1978.

ARTICLE V. - ESTIMATED CONTRACT COST AND FINANCING

The Contractor will be reimbursed for the costs incurred by him in performing services hereunder in accordance with the applicable provisions of the Schedule and the General Provisions, subject to the following limitation made in respect thereto:

- A. Total A.I.D. dollar funds available for payment and allotted to this Contract. See the clause of the General Provisions entitled "Limitation of Funds" and the article of the Schedule entitled

** Compensation (i.e. salary & fringe benefits) for Dr. Metcalf are provided at no cost to this contract.

"Budget".	<u>\$110,000</u>
B. Estimated additional funds which may be provided, if funds are available. See the clause of the General Provisions entitled "Limitation of Funds" and the article of the Schedule entitled "Budget".	<u>\$ 57,144</u>
Total Estimated Contract Cost	<u><u>\$167,144</u></u>

NOTE: It is estimated that the aforesaid amounts will be sufficient to complete the work required hereunder as set forth in the Schedule article entitled "Statement of Work".

ARTICLE VI - BUDGET

LINE ITEM	<u>Funds Available (i.e. Obligated)</u>	<u>Estimated Additional Cost to Completion</u>	<u>Total Estimated Contract Cost</u>
	FR: 06-30-75 TO: 06-29-77	FR:06-30-77 TO:06-29-78	
Salaries & Wages	\$ 58,425	\$ 31,421	\$ 89,846
Fringe Benefits	1,580	850	2,430
Indirect Cost	38,560	20,738	59,298
Materials & Supplies	<u>11,435</u>	<u>4,135</u>	<u>15,570</u>
	\$110,000	\$ 57,144	\$167,144

The "Funds Available" column represents the total authorized to be expended by the Contractor during the period indicated (see the Article of the Schedule entitled "Estimated Contract Cost and Financing" and the clause of the General Provisions entitled "Limitation of Funds"). Total

PATENT PROVISIONS AND PUBLICATION OF RESULTS (May 1973)

The public shall be granted all benefits of any patentable results of all research and investigations conducted and all information, data, and findings developed under this contract, through dedication, assignment to the Administrator, publication, or such other means as may be determined by the Contracting Officer.

(a) With respect to any invention or discovery conceived or first actually reduced to practice in the course of or under this contract, the Contractor shall furnish the Contracting Officer a complete technical disclosure, promptly after conception or first actual reduction to practice, whichever occurs first under the contract. Such disclosure shall identify the contract and inventor(s) and be sufficiently complete in technical detail to convey to one skilled in the art to which the invention or discovery pertains a clear understanding of the nature, purpose, operation, and to the extent known, the physical, chemical, biological, or electrical characteristics of the invention or discovery.

(b) With respect to patentable results and in accordance with this clause the Contractor agrees:

(1) to cooperate in the preparation and prosecution of any domestic and foreign patent applications which the Agency may decide to undertake covering the subject matter above described;

(2) to execute all papers requisite in the prosecution of such patent application including assignment to the United States and dedications; and

(3) to secure the cooperation of any employee of the Contractor in the preparation and the execution of all such papers as may be required in the prosecution of such patent applications or in order to vest title in the subject matter involved in the United States, or to secure the right of free use in public. It is understood, however, that the making of prior art searches, the preparation, filing, and prosecution of patent applications, the determination of questions of novelty, patentability, and inventorship, as well as other functions of a patent attorney, are excluded from the duties of the Contractor.

January 20, 1972

**GUIDELINES FOR PREPARATION
OF THE
RESEARCH ANNUAL REPORT**

The attached guidelines suggest the format and the detail for annual research reports that are required in all research contracts. The research contractor will submit thirty-five copies of the report with appendices to the A.I.D. Project Manager. The A.I.D. Project Manager will submit two copies to TA/RUR and two copies to the A.I.D. Reference Center.

The outline should prove useful to the contractor in preparing the report, and provide an improved basis for annual project reviews. The contractor is encouraged to develop a self-contained report as outlined below in approximately fifteen double-spaced pages. Additional material may be annexed as necessary for a comprehensive report. The fifteen page report is intended to provide a barebones statement of the effectiveness of research resources and methods in producing research results according to annual work plans, and the significance of these research results for the solution of the problem being addressed. Annexed material is essential for a critical review of assertions regarding findings, significance, etc.

REPORT SUMMARY 1/

- A.**
- 1. Project Title and Contract Number:**
 - 2. Principal Investigator, Contractor and Mailing Address:**
 - 3. Contract Period (as amended): 2/ from _____ to _____**
 - 4. Period covered by Report: from _____ to _____**
 - 5. Total A.I.D. funding of contract to date:**
 - 6. Total expenditures and obligations through previous contract year: 3/**
 - 7. Total expenditures and obligations for current year: 3/**
 - 8. Estimated expenditures for next contract year:**
- B. Narrative Summary of Accomplishments and Utilization**

(In this space provide a concise statement of the principal accomplishments during (1) the period of the report and (2) life of the project in relation to research objectives and actual or potential operational significance.

This information does not substitute for a full discussion of the same points required in the body of the Annual Research Report as outlined below.)

Identify significant problems or accomplishments in the progress of the project related to the volume, effectiveness, or scheduling of the manpower, equipment, travel, etc., made available by these expenditures.

Discuss significant changes or modifications in project management, in the staffing pattern, physical facilities, institutional environment, etc.

G. Work Plan and Budget Forecast for Coming Year

Taking into consideration the past year's progress and expenditures and the work remaining to be done over the life of the project, present a work plan and budget for the coming year.

1. anticipated accomplishments for the coming year.
2. procedures to be used and activities to be carried out.
3. significant factors that you anticipate that will promote or impede accomplishments.
4. a plan for dissemination and utilization of the expected results of the research in the U.S. and in LDCs as applicable.
5. a budget statement that shows planned expenditures for each of the major inputs (personnel, equipment, travel, LDC involvement, etc.) according to the major accomplishments, or work targets that are planned for the coming year's work.

H. Appendices

- Reports of technical data and analyses (Par. D. 2)
- A bibliographic list with abstracts of papers and publications (Par. E. 1)
- A list of uses made of research findings and reports (Par. E. 1)
- Other appendices as appropriate.

- 1/ "Report Summary": Statistical Information (Item A) and the Narrative Summary of Accomplishments (Item B) should be reported on a single page. This page will be for general public use as well as project management purposes, and should be written for a general rather than a technical audience.
- 2/ Item 3 - Contract Period (as amended): Report the original date of the contract and closing date as prescribed by the contract or any amendment thereto.
- 3/ Items A 6-8: These items refer to expenditures including firm obligations by the contractor. Obligations are the contractor's legal but unpaid commitments, i.e., subcontracts, purchase orders, etc.; and other related accruals through the end of the reporting period. A "contract year" is one between anniversary dates of the contract.

ANNUAL RESEARCH REPORT

A. General Background

Prepare a concise statement that provides the background and rationale that led to the initiation of the project. This summary should state the nature and importance of the problem to which the research is addressed, and the rationale that links the research activity to the problem.

B. Statement of Project Objectives as Stated in the Contract

The purpose of this section is to record in a precise and concise way the objectives of the research project. The objectives as stated in the contract may have been interpreted, expanded or further defined in other documents and mutually agreed to by A.I.D. and the contractor. This section should reflect the contractual objectives as modified by these supplementary understandings.

C. Continued Relevance of Objectives

Does your research to date, or other circumstances, indicate a need for modification of project objectives as stated in the contract? If so, in what respects?

D. Accomplishments to Date

1. Findings: Provide a statement of the principal and significant findings and other accomplishments for the reporting period as they relate to the anticipated results in the year's work plan. (See material for the year similar to that requested in G.1. below for the coming year.)

Discuss the operational significance of the findings of the current year's research for attainment of project objectives as stated in Section B above. The discussion should include reference to existing knowledge, recent research findings by others, and cumulative findings and accomplishments of this project.

Also discuss side effects of the work, positive or negative. For example, do the findings to date suggest unexpected complications for the application of findings; do they suggest the need for more direct approaches to the problem than were originally anticipated; or is the research developing information and insights not expected in the scope of the work?

2. Interpretation of Data and Supporting Evidence:

Summarize briefly the evidence and analysis that support the findings cited above. To permit a critical analysis of the evidence and analysis, expand as necessary in an appendix to each copy of the report.

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3. **Research Design:** State briefly any significant modifications made in the research design prior to the current reporting period.

Are the present techniques, instruments or mode of inquiry appropriate and/or optimal for the study design? In view of the findings of the past year or your experience with the research measures employed, do you recommend modifying (1) the research design or (2) research techniques? For example, have there been special problems of data availability, sampling, data processing, or ineffective techniques? Have research findings revealed technical relationships that suggest a continuation of present methods or do they suggest a new approach?

E. Dissemination and Utilization of Research Results

1. Briefly describe efforts made under the contract to disseminate the results of the research project. Attach as appendices two lists: (1) a bibliographic list and an abstract not exceeding 200 words of papers and publications developed under the contract and (2) a list of short statements that identify each known use of materials produced by the project for seminars, conferences, translations, or as background material for speeches, policy statements, etc.

2. Cite evidence and cases known to you that findings of the research project are being used in LDCs, the U.S., or both, in training, direct application to the problem, etc.

3. Has the experience of the past year suggested new or more effective ways to expand the use of research results? If so, discuss the experience and as appropriate include proposed steps in the work plan (Item G below). Indicate whether your proposals can be carried out under current provisions of the contract, or would require new contract arrangements by A.I.D.

4. Discuss the extent and nature of considerations to involve LDC personnel and/or institutions as an appropriate activity of the project. If judged appropriate, discuss the kind and extent of LDC involvement in (a) planning the project, (b) the execution of the field work, (c) the analysis and reporting of results. Plans to involve LDCs in the future should be reflected in the work plan in Item G (4) below.

5. Under separate cover forward four copies of publications, seminar reports, translations and other materials representing efforts to disseminate results of the research project, and evidence of the results being utilized by LDC or U.S. people or institutions.

F. Statement of Expenditures and Obligations and Contractor Resources

Provide a statement of expenditures and obligations related to the budget plan for the year. This statement should show expenditure and obligations for each of the (1) major inputs (Personnel, equipment, travel, etc.) according to (2) the major accomplishments or work targets that had been planned for the year's work.

Identify significant problems or accomplishments in the progress of the project related to the volume, effectiveness, or scheduling of the manpower, equipment, travel, etc., made available by these expenditures.

Discuss significant changes or modifications in project management, in the staffing pattern, physical facilities, institutional environment, etc.

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