E-2
PD-AAZ-744
62409
he
11/ 35
i

UNIVERSITY OF MIAMI SUB-CONTRACT

OCTOBER 1, 1985 - SEPTEMBER 30, 1986

JON B. MANN

ANALYTICAL TRAINING AND QUALITY CONTROL

TABLE OF CONTENTS

SUMMARY

TABLES A1 - OUTLINE OF PROJECT OUTPUTS

A2 - FUTURE PROJECT OUTPUTS

B1 - TRAINING COURSE RESULTS (MARCH 3 - MAY 23, 1986)

B2 - TRAINING COURSE RESULTS (AUG. 4 - OCT. 24, 1986)

C1 - ANALYSIS OF BOLIVIAN TOMATO SAMPLES

D1 - LIST OF PARTICIPATING LABS

D2 - STATISTICAL RESULTS UM-018

SUMMARY

(See Table A1 for Outline of Project Outputs)

Training

Two (2) - 3 month training courses in "Pesticide Residue Analysis" were held this period. The first was held March 3 - May 23, 1986 for Ivan Trivino - Ministry of Health of Chile and Hilda Triador - School of Medicine of the Republic, Uruguay (See Table B1 for laboratory performance and written test scores). The second course was held August 4 - October 24, 1986 for Graciela Bernal - I.C.A., Colombia and Lourdes Espinosa - Ministry of Agriculture, Ecuador (See Table B2).

Mann participated in a "Pesticide Safety Course" in El Salvador with the travel expenses paid by the sponsors - PROMECAFE/A.I.D.

Technical Assistance

Ten (10) tomato samples from Bolivia were analyzed to assess the impact of pesticide useage (See Table C1). This is a follow-up to samples run previously to determine baseline levels prior to an A.I.D. Projects suggestions for pesticide useage. Ten (10) additional samples will be run in November.

Quality Control Sample UM-018 was mailed November 11, 1985 to 56 participating laboratories (See Table D1). Only six (6) laboratories analyzed the sample and mailed in their results (See Table D2).

Networking

Preparation and attendance of meeting at Maryland to discuss new contract with A.I.D.

Preparation of addition of University of Miami's participation to the new CICP brochure.

TABLE A1

OCTOBER 1, 1985 - SEPTEMBER 30, 1986

PROJECT OUTPUTS	WHERE	WHEN	PERSON MONTHS	TECHNICIAN
TRAINING				
Pesticide Safety Course	El Salvador	Dec. 1985	0.25	Mann
Pesticide Residue Course	Miami	March 3 - May 23, 1986	3.0	Mann
Pesticide Residue Course	Miami	Aug. 4 - Oct. 24, 1986	2.0	Mann
*Preparation/ Planning	Miami	Nov. 1, 1985- Feb. 28, 1986	3.25	Mann
TECHNICAL ASSISTANCE				
Quality Control	Miami	Oct. 1 - Nov. 31, 1985	0.5	Mann
Analysis of Bolivian Tomato Samples	Miami	May 26 - Aug. 1, 1986	2.0	Mann
NETWORKING				
Reports/ Planning	Maryland/ Miami	Dec. 1985	0.5	Mann
T.A. Information	Miami	Oct. 1, 1985- Mar. 31, 1986	0.5	Mann

*Included Laboratory move in this category

TABLE A2

PROPOSED PROJECTS

TRAINING	WHERE	WHEN	PERSON MONTHS	TECHNICIAN
Pesticide Residue Course Continued	Miami	Oct. 1-24, 1986	1.0	Mann
TECHNICAL ASSISTANCE				
Analysis of Haitian Bloods	Miami	Nov. 1, 1986 -Feb.28, 1987	1.5	Mann
Analysis of Bolivian Tomato Samples		Nov. 1, 1986 -Feb.28, 1987	1.0	Mann
Quality Control	Miami	Nov. 1, 1986 -Feb.28, 1987	1.0	Mann
NETWORKING				
Reports/Planning	Maryland/ Miami	Dec. 1986	0.5	Mann

TABLE B1

Performance Evaluation of Trainees

Pesticide Residue Course Held March 3 - May 23, 1986

At the beginning of the course, a test was given on general knowledge of pesticide residue analysis (Pre-test). The same test was given at the end of the course (Post-test) to see if the course served its purpose of technology transfer.

STUDENT	SCORES	
	Pre-test	Post-test
Ivan Trivino	38.3	96.5
Hilda Triador	10.8	92.0

LABORATORY TEST SAMPLES

Compound Actual Value	Aldrin (0.5)	Lindane (0.7)	Me.Par. (5.0)	DDE (1.0)	Dieldrin (1.25)	Malathion (10.0)
Ivan Trivino	0.46	0.63	4.70	0.93	1.21	9.70
Hilda Triador	0.49	0.70	3.55	0.86	1.16	9.20

LABORATORY TEST SAMPLE SCORES

	ID(1)	Quantitation(2)	Total
Ivan Trivino	50	7.50+7.67+7.84+7.75+8.09+8.09	96.94
Hilda Triador	50	8.33+8.17+5.92+7.17+7.74+7.65	94.98

(1) Each correct identification is equal to 50/6 = 8.33 points

(2) Quantitative score is equal to 8.33 times the percentage of the actual value found for each compound. If more than 100% of the actual was reported, then the actual value was divided by the determined value and multiplied by 8.33. The scores are based on deviation from the actual value.

TABLE B2

Performance Evaluation of Trainees

Pesticide Residue Course Held August 4 - October 24, 1986

At the beginning of the course, a test was given on general knowledge of pesticide residue analysis (Pre-test). The same test was given at the end of the course (Post-test) to see if the course served its purpose of technology transfer.

STUDENT	SCORES	
	Pre-test	Post-test
Graciela Bernal	30.2	92.5
Lourdes Espinosa	20.6	91.2

LABORATORY TEST SAMPLES

Compound Actual Value	Aldrin (80)	DDT (226)	DDE (160)	Dieldrin (160)	Endrin (202)
Graciela Bernal	74.1	267	158	131	208
Lourdes Espinosa	65.0	267	133	131	200

LABORATORY TEST SAMPLE SCORES

	ID(1)	Quantitation(2)	Total
Graciela Bernal	50	9.26+9.88+8.46+8.19+9.71	95.50
Lourdes Espinosa	50	8.13+8.31+8.46+8.19+9.90	92.99

(1) Each correct identification is equal to 50/5 = 10 points

(2) Quantitative score is equal to 10 times the percentage of the actual value found for each compound. If more than 100% of the actual was reported, then the actual value was divided by the determined value and multiplied by 10. The scores are based on deviation from the actual value.

TABLE C1

June 20, 1986

Dr. Don Calvert
Casilla 4132
Cochabamba, Bolivia

Dear Don:

The tomato samples were analyzed under the following conditions:

	Limit of Detection	Tolerance
Methamidophos	0.1 ppm	1.0 ppm
EPN	0.02 ppm	3.0 ppm
Azodrin	0.33 ppm	0.5 ppm
Cypermethrin	0.25 ppm	(1)
Cyfluthion	0.25 ppm	(2)
Metalaxyl	0.1 ppm	1.0 ppm

(1) No Tolerance
(2) Not registered for use in the U.S.

There was not enough sample to do a separate analysis for the bisdithiocarbamates - Antracol (propineb), Padan, and Dithane (Maneb). The method won't differentiate the compounds and the residues are never found anyway. Kocide and Cupravit and copper fungicides are exempt from tolerances. We don't have the capability to analyze for inorganics. The only residue found above the limits of detection was EPN.

SPL. No. :	RS-2	RS-1	MV-1(3)	AC-1	MR-5(3)	BC-1
EPN (ppm):	0.17	0.19	0.02	0.10	0.04	0.12

(3) Didn't report using EPN.

Sincerely,

Jon B. Mann, Quality Control
& Analytical Training
CICP/AID PM Project

JBM:sm
cc: Drs. Steinhauer, Miller, Davies, Freed & Mr. Collier

TABLE D1

UM-018

LEGEND

METHOD OF ANALYSIS

A. E.C.D. - G.L.C.

B. F.I.D. - G.L.C.

C. T.L.C.

D. COLORIMETRIC

E. I.R.

F. FLUORIMETRY

DISPOSITION

1. SAMPLE SENT
2. SAMPLE RECEIVED
3. RESULTS RECEIVED
4. FOLLOW-UP LETTER SENT (RESULTS NOT RECEIVED)
5. EXPLANATION RECEIVED (UNABLE TO DO SAMPLE)
6. EXPLANATION RECEIVED (WILL DO SAMPLE LATER)
7. REPORT SENT TO LABORATORY

PARTICIPATING LABORATORIES

1. Dra. Koesmijati Widodo
Head, Pharmaceutical Chemist
National Institute of Health
Kotak Pos. 226
Jl. Percetakan Negara I
Jakarta, INDONESIA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

2. Dr. Hernando Bayona
Jefe Seccion Control Calidad
de Aquas
INSFOPAL
C.A.N. - BLOQUE 2
Bogota, COLOMBIA S.A.

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

3. Dr. Omar Velasquez L.
Jefe Depts. De Quimica
Division de Ciencias
Universidad del Valle
Cali, COLOMBIA S.A.

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

4. Dr. Soejono
National Atomic Energy Agency
Pasar Djum'at Research Center
P. O. Box 2, KBJ-LAMA
Jakarta, INDONESIA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

5. Dr. Metta Sinta Sari
Universitas Indonesia
Bagian Farmakologi
Salemba 6
Jakarta, INDONESIA

METHOD OF ANALYSIS _____
DISPOSITION 1 ,
_____, _____, _____

6. Dr. Gloria Ruth Calderon
Lab Residuos de Plaguicidas
CENTA
Apartado Postal 885
San Salvador, EL SALVADOR C.A.

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

7. Mrs. Amelia W. Tejada
Dept. of Entomology
College of Agriculture
U.S. at Los Banos College
Laguna 3720, PHILIPPINES

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

8. Mrs. Maria de Arriolla
Central American Research Inst.
(ICAITI)
Avenida la Reforma 4-47, Zona 10
Guatemala City, GUATEMALA C.A.

METHOD OF ANALYSIS A
DISPOSITION 1 ,
2 , 3 , 7

9. Mrs. Marit de Campos
Laboratorio Unificado de
Control de Alimentos
Apartado Postal 1188
Guatemala City, GUATEMALA C.A.

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

10. Mr. Ridha Bouhalila
Laboratoire Central
Rue Nehru - Montfleury
Tunis, TUNISIA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

11. Dr. Gladys Bastista
Direccion General de Ganaderia
Laboratorios de Alimentos
Feria Ganadera
Santo Domingo, REP. DOMINICANA
Telephone #528-3979

METHOD OF ANALYSIS A
DISPOSITION 1 ,
2 , 3 , 7

12. (Dr. Mahmoud El-Amayem)
Plant Protection Department
Alexandria University
Alexandria, EGYPT

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

13. Dr. A.H. El Sebae, Assoc. Dir.
UNARC
P. O. Box 832
Alexandria, EGYPT

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

14. Dr. M.M. Baig
Federal Pesticides Laboratory
Government of Pakistan
Malir, Halt - 27
PAKISTAN

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

15. Dr. Roberto A. Colindres R.
Barrio El Jazmin No. 124
Tegucigalpa D.C.
HONDURAS

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

16. Dra. Mirian Segoria
Instituto Nacional de Tecnologia
y Normalizacion
Casilla de Correo 967
Asuncion, PARAGUAY

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

17. Jefe del Laboratorio
IFAGAN + CIA. LTDA.
Apartado Postal 1954
Managua, NICARAGUA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

18. Ing. Oscar Linares
Fundacion CIEPE
Zona Industrial, Apd. 100
San Felipe, Edo. Yaracy
VENEZUELA S.A.

METHOD OF ANALYSIS A
DISPOSITION 1 ,
2 , 3 , 7

19. Mr. Hugh Hines
Pesticide Control Laboratory
CARDI
U.W.I., St. Augustine
TRINIDAD, W.I.

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

20. Mrs. Chaweewon Halilamiam, Dir.
Division of Food Analysis
Dept. of Medical Sciences
Yodse, Bangkok 1,
THAILAND

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

21. Sr. Eligio Hichez Frias
Sec. Estado de Agricultura
Dept. de Sanidad de Vegetal
Lab. de Residuos de Pesticidas
Santo Domingo, REP. DOMINICANA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

22. Brig. Gen. Guillermo Pecache
National Pollution Control Comm.
Pedro Gil St. Corner Taft Ave.
Ermita, Manila
PHILIPPINES

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

23. Dr. Prayoon Deema
Chief, Pesticide Research Lab.
Department of Agriculture
Bangkhen, Bangkok 9,
THAILAND

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

24. Sra. Anita Torrado Pacheco
Laboratorio Nacional de
Insumos Agricolas
Instituto Colombiano Agropecuario,
Apartado Aereo 151123, El Dorado
Bogota, D.C., COLOMBIA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
ICA
_____, _____, _____

25. Dr. Joseph Ngatia
Pesticide Research Laboratory
P. O. Box 14733
Nairobi, KENYA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

26. Dr. J.G. Concepcion
Banco Central de la Republica
Dominicana, Instituto Dominicano
de Tecnologia Ind.
Santo Domingo, REP. DOMINICANA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

27. Mrs. Mercedes Bolanos de Moreno
Casilla 063
Ribamba,
ECUADOR

METHOD OF ANALYSIS A
DISPOSITION 1 ,
2 , 3 , 7

28. Dra. Olga Ruiz
CENDEISA
Apartado 10094
San Jose,
COSTA RICA C.A.

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

29. Mr. Hameraj Singh
Commissioner of Food & Drugs
19-21 Evans & Lyng Streets
Georgetown,
GUYANA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

30. Dr. Rafael Murillo
INCIENSA
Apartado 4
Tres Rios,
COSTA RICA C.A.

METHOD OF ANALYSIS A
DISPOSITION 1 ,
2 , 3 , 7

31. Dr. Mauricio Restrepo
Instituto Nacional de Salud-INS
Avenida Eldorado con Carrera 50
Apartado Aereo 80334 Zona 4
Bogota, COLOMBIA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

32. Dr. Ester de C. Fonseca Moraes
Faculdade de Ciencias Farmaceutic
Universidade de Sao Paulo
Caixa Postal 30786
01000 Sao Paulo, SP. BRASIL

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

33. Mr. John B. Chogo
Ag. Principal Chem. Analyst
Tropical Pesticides Res. Inst.
P. O. Box 3024
Arusha, TANZANIA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

34. Dr. R.P. Chawla
Department of Entomology
Punjab Agricultural University
Ludhiana, INDIA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

35. Mr. Walter Claros
Dept. of Pesticides
M.A.C.A./Sanidad Vegetal
Av. Camacho #1471
La Paz, BOLIVIA (Tele: 782366)

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

36. Dr. Hosny, Director
Plant Protection Department
Ain Shams University-Faculty
Shoubra El-Cheima
Cairo, EGYPT

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

37. Cro. Alvaro Espinoza Medina
Laboratorio de Tecnologia
de Alimentos (LABAL)
Direccion Tecnologica
Apartado Postal 189
Managua, NICARAGUA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

38. Dra. Ernestine Lacher
Laboratorio de Quimica
Fundacion Chile
Via Sur Parque Institucional
6651 Santiago, CHILE

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

39. Dr. Telmo Oleas
Instituto Nacional de
Investigaciones Agropecuarias
Estacion Santa Catalina
Apartado No. 340
Quito, ECUADOR

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

40. Central Lab of Drugs & Food Cont.
Dir. Gen. of Drugs & Food Control
Ministry of Health
Jl. Percetakan Negara 23
P. O. Box 143
Jakarta, INDONESIA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

41. Ingeniero Raul Arias U.
Corporacion Autonoma Regional
del Cauca - CVC
Departamente de Aquas
Apartado Aereo 2366
Cali, COLOMBIA S.A.

METHOD OF ANALYSIS A
DISPOSITION 1 ,
2 , 3 , 7

42. Dr. Raul Osorio G.
Quimico Farmaceutico
Apartado Aereo No. 55361
Medellin, COLOMBIA S.A.

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

43. Mr. Francisco Palacio
R & D Manager
Cia. Colombiana de Tabaco S.A.
Apartado Aereo 828
Coltabaco
Medellin, COLOMBIA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

44. Dr. Enrique Posada
Universidad Pontifica Bolivariana
Apartado Aereo 1178
Medellin, COLOMBIA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

45. Dr. Erasmo J. Franklin
Central Veterinary Laboratory
P. O. Box 181
Belize City, BELIZE C.A.

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

46. Dr. Armando Vargas
Facultad de Medicina
Departamento de Ciencias
Fisiologicas
Universidad Nacional de Colombia
Bogota, COLOMBIA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

47. Mr. Juan Valdez
Faculdad de Ciencias
Universidad Nacional
Heredia,
COSTA RICA C.A.

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

48. Mr. Leonardo L. LeMoth
Instituto de Investigacion
Agropecuaria de Panama
Apartado 6-4391
Panama 6A, PANAMA

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

49. Dr. Chris Banfield
Government Laboratory "Flodden"
Culloden Road
P. O. Box 505
St. Michael, BARBADOS W.I.

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
_____, _____, _____

50. Mr. Henry Lubin
Union Agricultural Station
Ministry of Agriculture
Castries, ST. LUCIA W.I.

METHOD OF ANALYSIS_____
DISPOSITION 1 ,
5 , _____, _____

TABLE D2

CM-018

Lab Code	Lindane (0.7ug/ml)	Aldrin (0.5ug/ml)	Methyl Parathion (5.0ug/ml)	p,p'-DDE (1.0ug/ml)	Dieldrin (1.25ug/ml)	Malathion (10.0ug/ml)	Ronnel (0)	Parathion (0)	Endrin (0)
8	0.68	0.46	4.1	0.83	1.08	8.3	-	-	-
41	0.82	0.75	5.2	1.09	1.70	14.8	42.6	-	-
11	0.45	0.30	-	0.50	1.00	9.5	-	-	-
27	0.91	0.65	-	0.15	-	1.18	-	-	3.2
30	0.70	0.50	5.0	1.0	1.0	7.0	-	-	-
18	0.54	0.29	-	-	1.63	7.76	-	4.24	-
MEAN	0.68	0.49	4.77	0.71	1.28	8.09			
S.D.	0.17	0.18	0.59	0.39	0.35	4.38			

51. Ms. Valerie Lendore
Produce Laboratory
Ministry of Agriculture
Archibald Avenue
St. George's, GRENADA W.I.

METHOD OF ANALYSIS_____

DISPOSITION 1 ,

_____, _____, _____

52. Mrs. Narda M. de Nazar
Hondurena de Ecologia
Apartado T-250
Teguicagalpa, D.C.
HONDURAS

METHOD OF ANALYSIS_____

DISPOSITION 1 ,

_____, _____, _____

53. Mrs. Annette Lashley
Food and Drugs Division
115 Fredrick Street
Port-of-Spain,
TRINIDAD & TOBAGO

METHOD OF ANALYSIS_____

DISPOSITION 1 ,

_____, _____, _____

54. Mr. Albert Walker
Forensic Science Laboratory
19 West Avenue
Kingston 4,
JAMAICA

METHOD OF ANALYSIS_____

DISPOSITION 1 ,

_____, _____, _____

55. Mr. Tomas Salgado
Fundacion Hondurena de
Investigacion Agricola
Apartado Postal 2067
San Pedro Sula, HONDURAS

METHOD OF ANALYSIS_____

DISPOSITION 1 ,

_____, _____, _____

56. Ms. Evangeline Ramos
Bureau of Animal Industry
Visayas Avenue
Quezon City,
PHILIPPINES

METHOD OF ANALYSIS_____

DISPOSITION 1 ,

_____, _____, _____